

Understanding Your Energy Costs The Power to Take Control Kentucky's K-12 Success Story

6th Annual Kentucky Energy Management Conference

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Kentucky Chamber of Commerce

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Kentucky School Boards Association-School Energy Managers Project

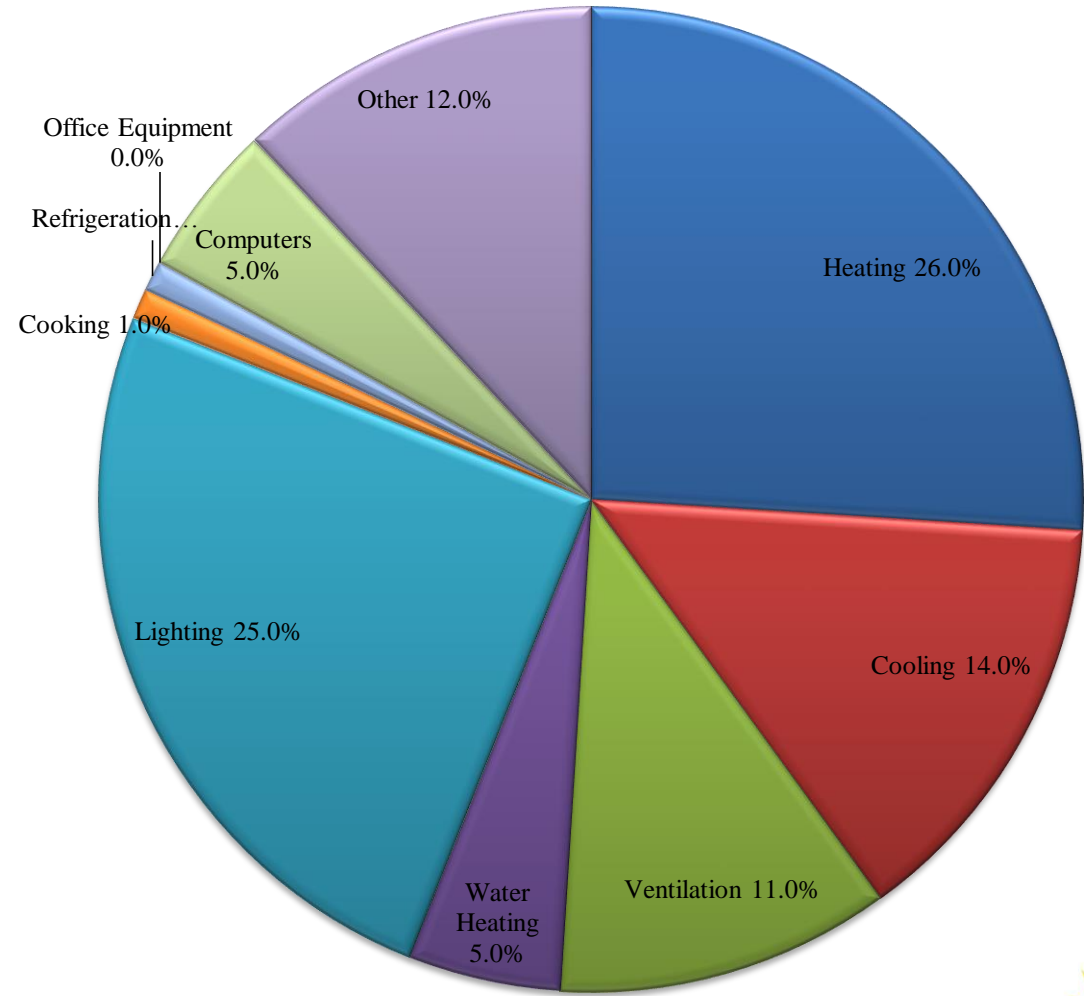


The Average School District in Kentucky

	Entire State	Less Fayette & Jefferson Counties
Elementary Schools	4.0	3.4
Middle and High Schools	2.5	2.2
TOTAL	6.5	5.5
Energy Consumption, MMBTU	33,000	26,000
Energy Spend, \$	\$799,5000	\$639,000
Conditioned Square Footage	637,000	518,000

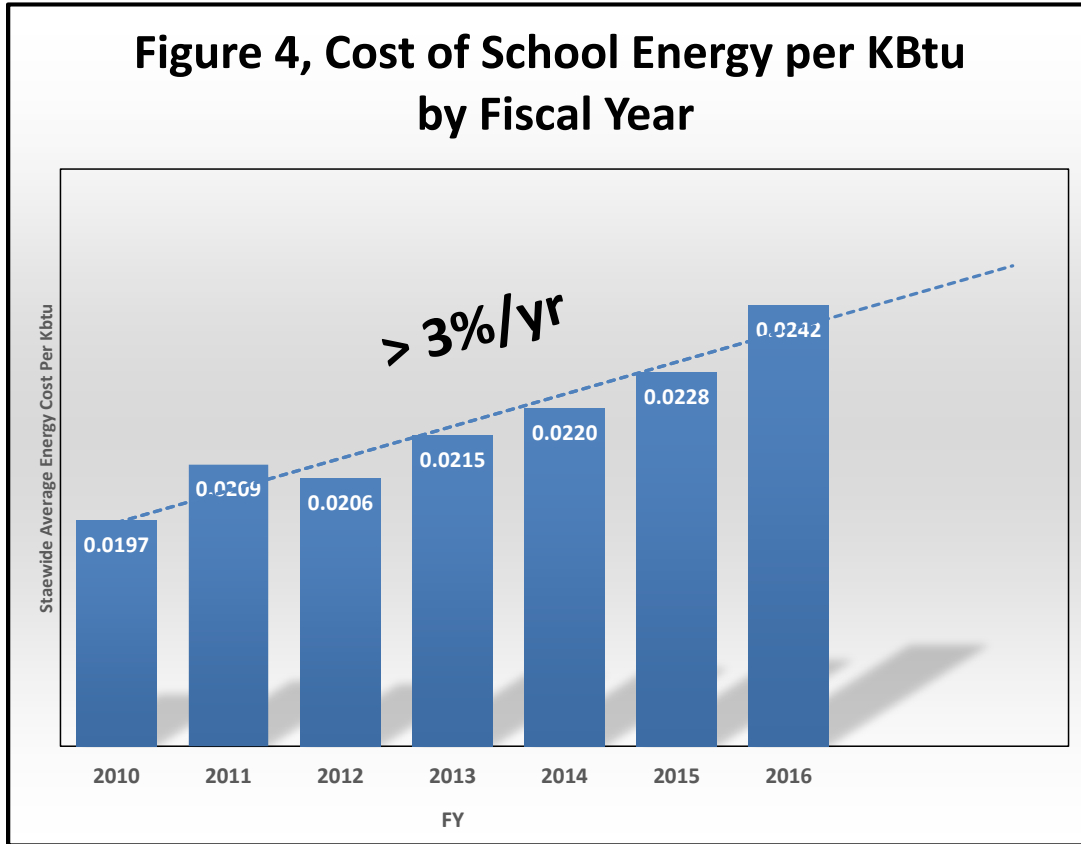
Where do those BTUs go?

- Note HVAC
- Note Lighting
- Other = Things Plugged In
 - ✓ Space heaters
 - ✓ Coffee Makers
 - ✓ Microwaves
 - ✓ Mini Fridge

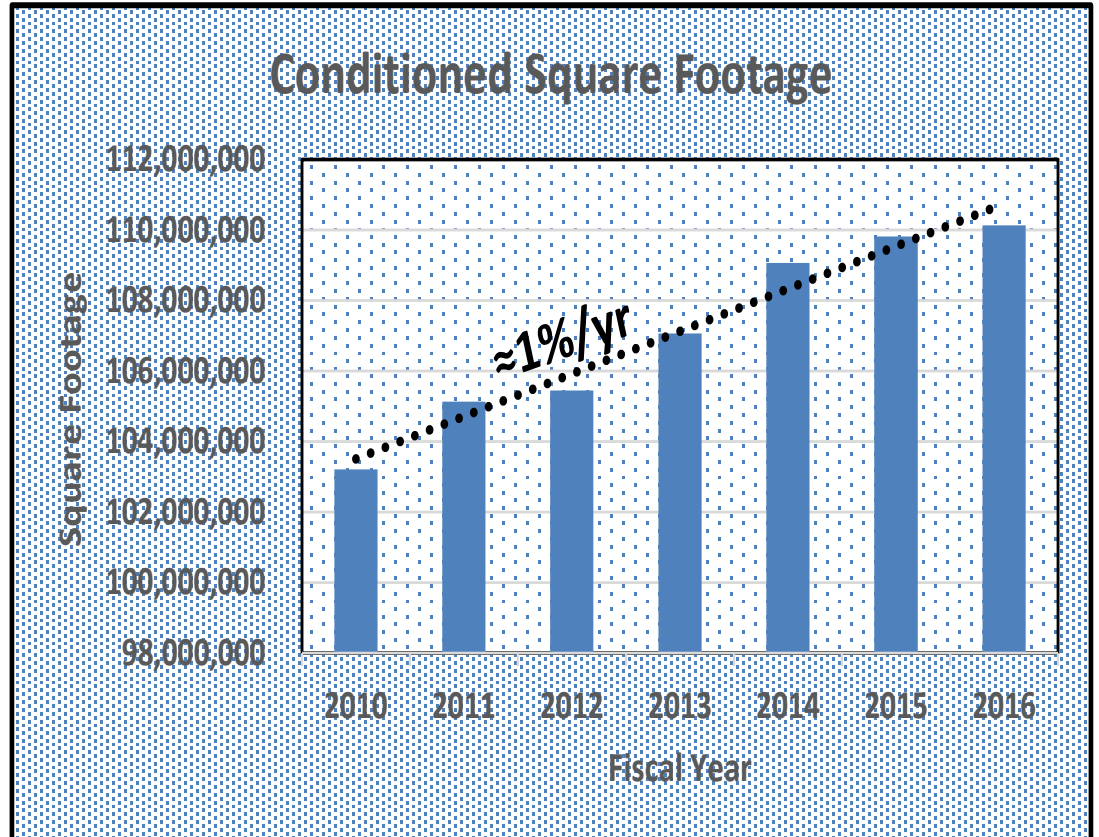


Utility Cost and Space Increases

Figure 4, Cost of School Energy per KBtu by Fiscal Year



Conditioned Square Footage



School Culture

- School administrator and personnel focus = education
- Background is education – not finance or energy
 - Default: “just pay the bill”
- Contrary to a business, schools have multiple decision makers
 - Each teacher can bring items (portable heaters, refrigerators, additional lights, and microwaves) and, in many cases, have control over the temperature of their room.

School Culture (continued)

- Energy Initiative Funding Challenge
 - Energy Projects: Cash and bonding capacity limitations
 - Energy Practitioners: non-classroom position is a problem
- Energy Technology in Buildings is Sophisticated
 - Educators have learned “occupied” and “unoccupied”.
 - Control Systems for HVAC and Lighting are complex
 - Succession training required
 - Energy Manager Oversight or Control
- Energy Success Stories - Now Classroom Lessons

What have schools done



- Employed Energy Managers
- Facility & Operation Audits
- Behavior - Staff/Student Involvement
- Implemented Efficiency Measures
 - Adjusted HVAC temperature set points
 - Incorporated HVAC temperature set backs
 - Building Automation Systems
 - Equipment Upgrades
 - Lighting Retrofits
- Demand Response
- Performance Contracts



Key Factors for Successful Energy Management Program

- Support - School Board & Superintendent
- Buy in - All Principals (Building Leaders)
- Buy in - All Faculty and Staff
- Educate Students on Saving Energy
- Competition - Weekly and Monthly Reports
- Identify Prioritize & Implement ECM's
- Recognize achievements



Energy Manager



- Dedicated Resource
 - No Priority Shuffling – Boots on the Ground
 - Significant ROI (NON Classroom Position Saves Multiple Classroom Positions)
 - Knowledgeable Connection to Utility Companies
- Skilled Resource
 - Evaluates and Presents Energy Saving Options
 - Facilitates Policy Compliance
 - Translates Technical Information

NO Involvement = NO commitment

- If you want people committed, you have to get them involved
- How do you get people Involved?
 - Communication
 - Teams
 - Contests
 - State Rankings



LED Lighting



RESULTS

