

Let's Save Energy



School Energy Managers Project



LED Upgrades as Maintenance Projects keeps MADISON COUNTY reducing costs

October 2013

With 17 schools and utility costs over \$2 million, you can understand why Madison County Schools' Maintenance Supervisor Larry Curry and Energy Manager David Rorrer are always looking for Energy Conservation Measures (ECMs) that can lower those costs, and have a short payback time.

Having a unique partnership, Curry and Rorrer have worked together in the maintenance department for six years. As energy became a critical focus for Kentucky, more of Rorrer's duties moved to the area of energy management and they became "Co-Energy Managers." Rorrer's role shifted from preventative maintenance, which is important for energy savings, to proactive project management which is key for long-term ECM.

As they continued to understand the new technologies, renovating several areas to use LED lighting became a goal. Initially the cost of LEDs was a deterrent; however Curry and Rorrer kept them on the list of ECMs. When the LED costs began dropping during the last year, they realized the payback

would be less than three years, if they did the work themselves.

Decisions of where and when to do the replacement fixtures are made strictly by when bulbs need to be replaced. At this time, four of the gymnasiums have been upgraded with an energy savings between 76 percent and 83 percent. In two of the gyms, the number of fixtures was reduced because of the light output made the areas too bright. Thirty-two outdoor lights (20' pole lights) have been replaced, with energy savings of 76 percent, and an average of four pole lights being changed per month. One school auditorium and one school canopy have also been upgraded.



Larry Curry
Madison County
Co-Energy Manager



David Rorrer
Madison County
Co-Energy Manager

As the maintenance projects continue, the energy savings are quickly adding up. A significant fact to recognize is that Madison County Schools is already in the top ten percent of the lowest Energy Utilization Index (EUI) in Kentucky, and they are still implementing various energy projects to continue to reduce their utility costs!



Madison Central High School pathway lighting show an LED fixture on left using 56 watts, as compared to 100 watt HID metal halide fixture on right. Notice the color of light and the distribution as it illuminates the building side.

LED Lighting “race to the bottom”

By: Jason C. Newland, lighting specialist

In the words of Bob Dylan, “The times are a -changin’” when it comes to embracing LED lighting solutions. In nearly every application regarding the lighting needs of our schools, LED is becoming more practical with each passing day. Just a few years ago LED was a promising technology with initial costs that dampened our enthusiasm to embrace the technology. Well, it is time to gather around and accept that LED will soon be the predominate lighting technology in our schools. LED lighting’s initial costs have dropped by 50 percent to 75 percent on many products, while input wattages continue to decrease and the energy savings continue to impress when compared to other

types of lighting. This “race to the bottom” has the design community converting over to LED as the standard of lighting for most applications.



It won’t be many more “blue moons over Kentucky” before all of us take advantage of the energy savings and reduced maintenance afforded by LED lighting. LED pricing will continue to become more reasonable while energy and maintenance costs will continue to rise. Contact a lighting specialist to assess the possible savings with lighting upgrades.

SCHOOL ENERGY MANAGERS TRAINING RE-CAP

As we continue to build on the successes of energy management in Kentucky school districts, the goal of the SEMP is to provide strong professional development and high quality information and direction for all school energy managers. On Oct. 1-2, 26 energy managers from 51 districts gathered in Georgetown to review updates in lighting, controls and building assessments. The energy managers met with 13 vendors representing controls, lighting, maintenance, engineering and commissioning services. A few highlights of the recent training include:



Dr. Len Peters, Secretary Energy & Environment Cabinet

“School district administrators have been faced with increasingly tough challenges! Among the most serious is how to deliver quality education with reduces budgets. In the past few years, school energy managers have proven to be a valuable resource to school districts across the Commonwealth. They have shown how energy efficiency is an effective tool to save precious dollars that can be returned to the classroom.”

School Energy Managers Training (Continued)

Jim Gardner, Vice-Chairman Kentucky Public Service Commission

"With the Kentucky energy outlook so volatile, it is critical that energy efficiency is a significant part of the decision making. Emerging demand-side management programs should help to encourage this to happen."



Carl Wicklund School Board Member Kenton County Schools

"School board members are all about the student! We all want the students to learn and to reach their full potential. Even though there are some who have not seen energy

management as a direct contributor to learning, **we** know that it is. When you reduce costs that take from the classroom, you are contributing to an improved learning environment. Additionally, when the school environment including lighting, temperature, and security are appropriate, the learning environment is enhanced."



Tracy Terkelsen Senior Economist Fellon-McCord

"In making decisions on gas suppliers, several facts need to be considered. Oil and natural gas production in North America have increased more than 30 percent in the past five years. Additionally

the have been increased supplies have pulled industrial gas and power prices down to give the U.S. and Canada a competitive advantage in energy prices. This and other competitive advantages are attracting manufacturing back to North America. When you consider the four main forces that can drive the US Energy Prices: regulation of hydraulic fracturing, coal/nuclear retirements, liquefied natural gas (LNG) exports and the demand for energy, making your decisions regarding energy gets complicated."

Joe Harrell, PE, CEM Executive Director of Utilities University of Cincinnati

Joe Harrell led the energy managers through a refresher of Certified Energy Manager training principles by working specific examples on lighting, energy auditing and heat losses through non-working variable frequency drives (VFD). His examples included energy engineering and analysis coupled with



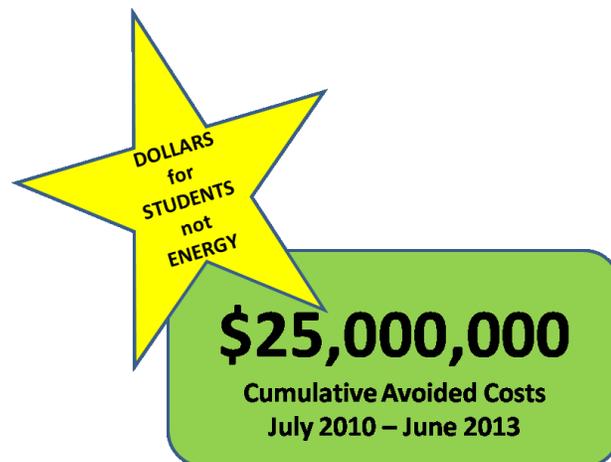
the financial implications which are important to "sell" these ideas and projects to superintendents and financial officers. He also shared a selection of auditing tools and informational web-sites.

ENERGY MANAGEMENT REPORT Update

Data input and analysis of this year's Energy Management Report is in full swing. To date, approximately 75 percent of the districts have reported. Data verification is being done using historical basis and trend analysis. Many districts are being asked to supply more data to ensure that the results are valid.

Once the data is validated, final reports will be shared with superintendents, board members, and the Legislative Research Commission.

Overall, districts have made tremendous progress in reducing their energy use intensity (EUI) since the baseline report of fiscal year 2010. Even with escalating energy prices, many districts are spending the same now as in 2010.



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