

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

NASEO Webinar

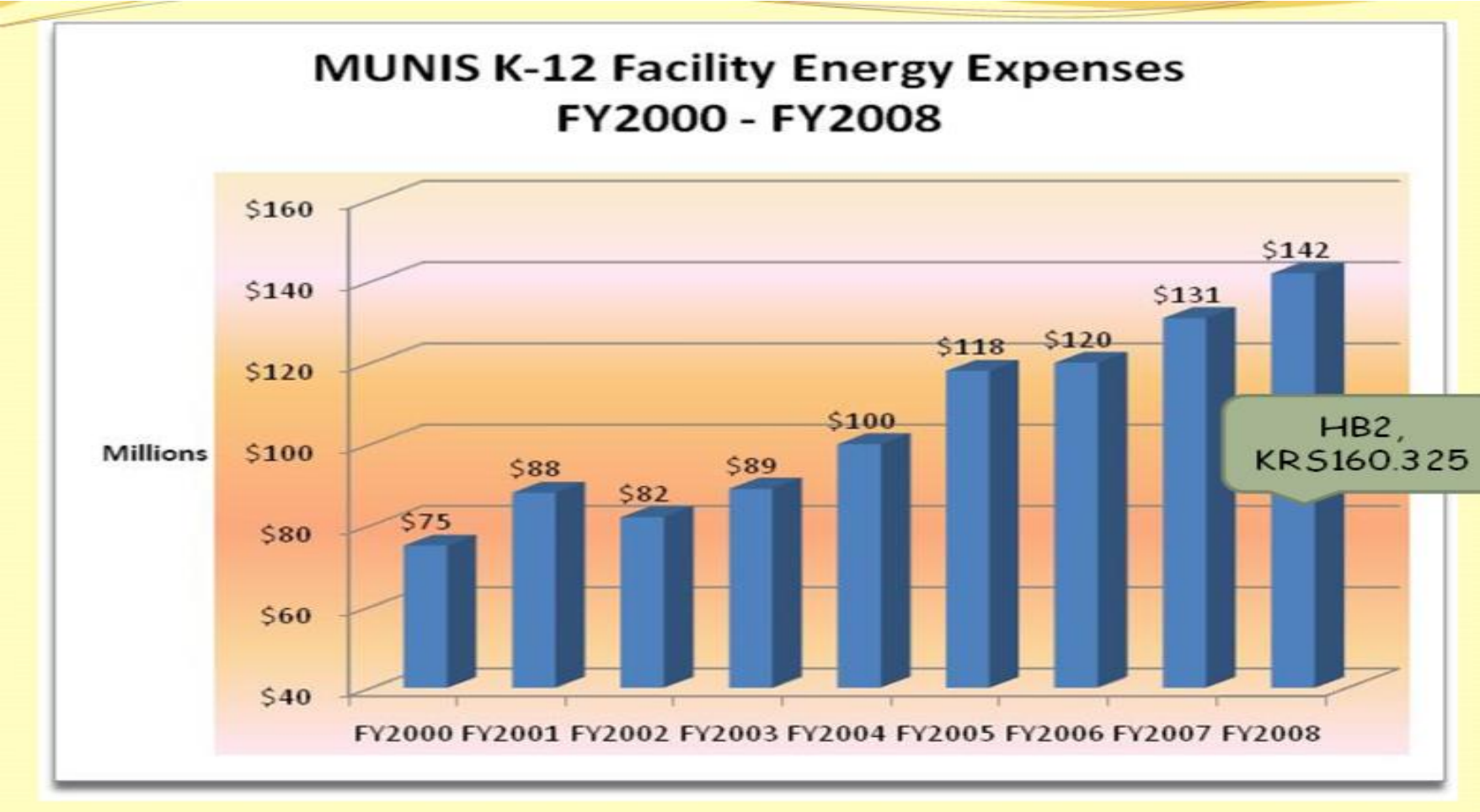
July 14, 2016

Ron Willhite, Director

Kentucky School Boards Association-School Energy Managers Project



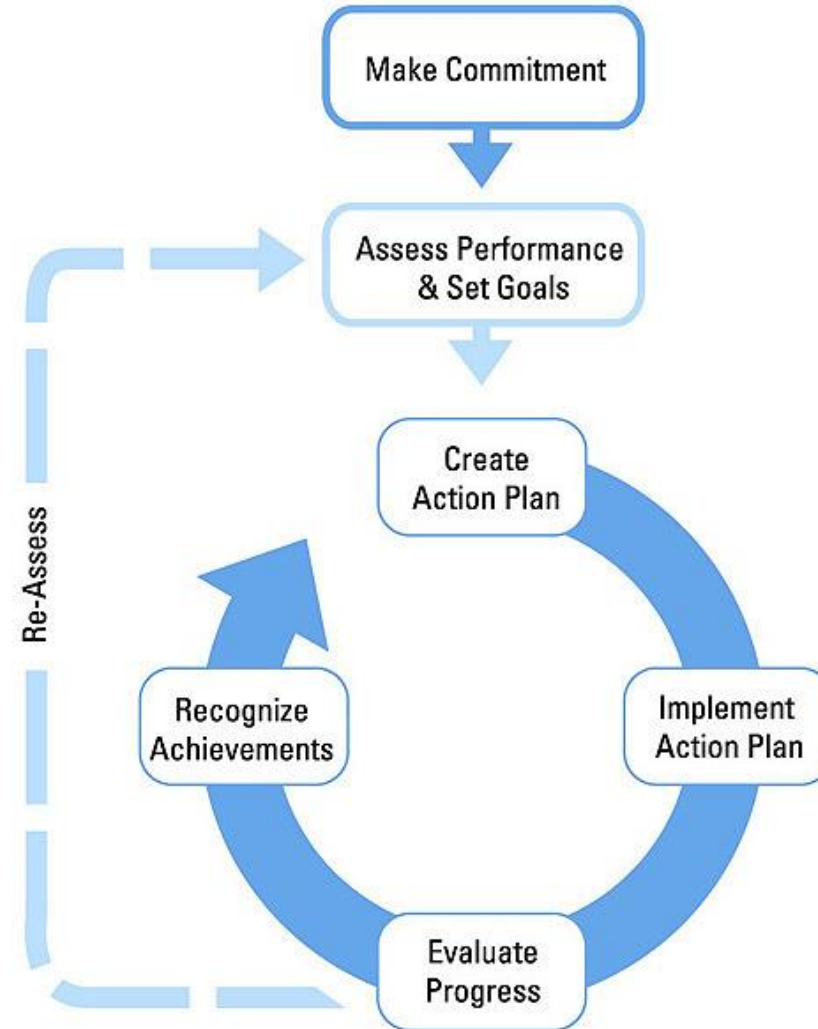
Why is energy management important in Kentucky?



Statutory & Policy Drivers

- **HB2 (2008) to KRS160.325 to Board Policy 05.23**
 - Develop/ Implement/Monitor Energy Management Plan
 - Track & Monitor Progress Managing & Reducing Costs
 - District/Superintendent Annual Reporting
 - KSBA collects, verifies and reports to DEDI & LRC

ENERGY STAR Guidelines



Where Had Schools Been?

- \$140 Million Annually on Utilities
- No Comprehensive Energy Plan
- Reliance on Mechanical Systems
- 12 ENERGY STAR Labeled Schools

OVERVIEW

SCHOOL ENERGY MANAGERS PROJECT

“SEMP”

SEMP's Message

Best Fuel Source – Energy Efficiency

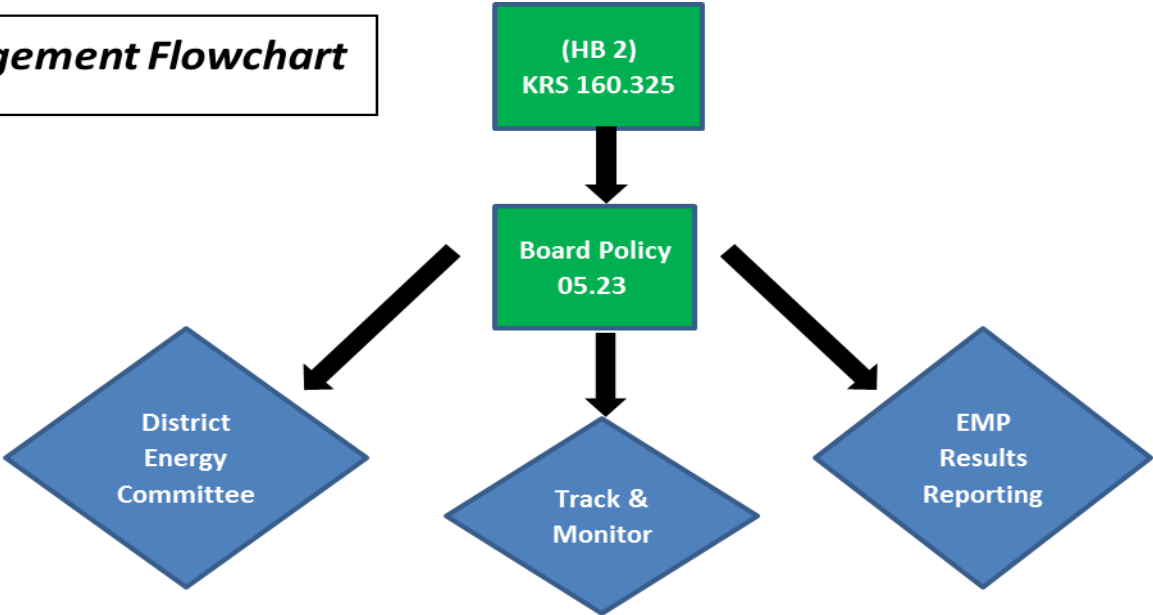
- Doesn't require new technology
- Can do it today
- Reduces Greenhouse Gas
- Lowers Cost

SEMP OVERVIEW

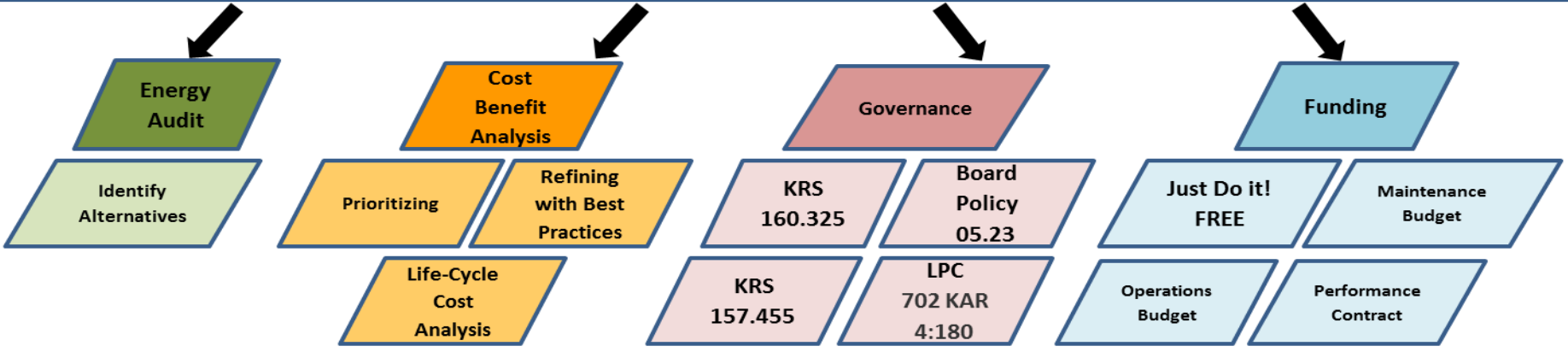
- Establish Energy Management as a Core School Value
- State-wide Infrastructure of Energy Professionals
- Share Resource & Cost via District Partnerships

Energy Management Flowchart

Integrating
ENERGY STAR
Guidelines &
KRS160.325



Moving from the Energy Management Plan to Budgeted Actions



District Energy Committee to develop Long and Short Term Action Plans

Local Planning Committee (LPC) to evaluate for District Facilities Plan – Operating Budget

Energy Manager Attributes

- Dedicated Resource
 - No priority shuffling
 - Significant ROI (This 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

Energy Manager Responsibilities

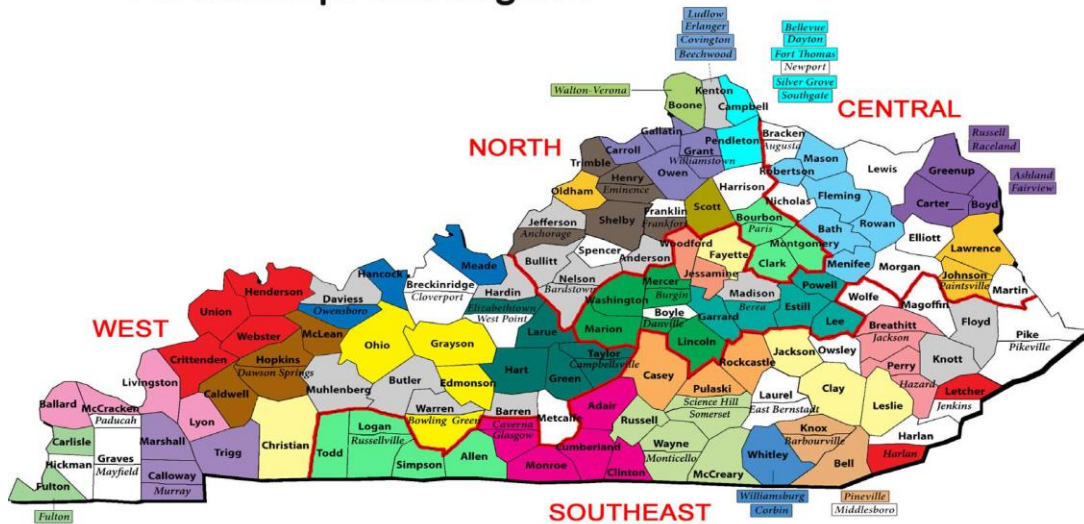
- Coordinates Requirements of Board Policy
- Accumulates and Provides Data
- Develops & Implements Energy Management Plan
- Commits to Performance Goals
- Analyzes and Implements ECMs
- Saves Districts Energy and Dollars

KSBA-SEMP Support

- Professional Development
- Engineering & Analytical Support
- State-wide Performance Reporting
- Governmental & Utility Collaboration
- Program Outreach

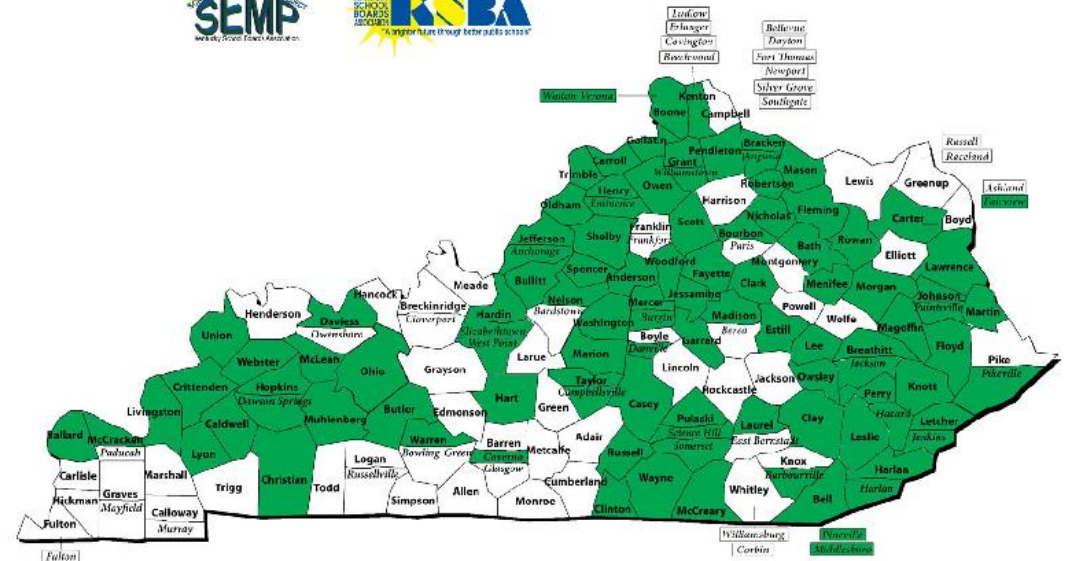
Participating Districts FY2010 - Now

School Energy Managers Project Partnerships and Regions



Existing Energy Management district - gray
Non-participating district - white

School Energy Managers



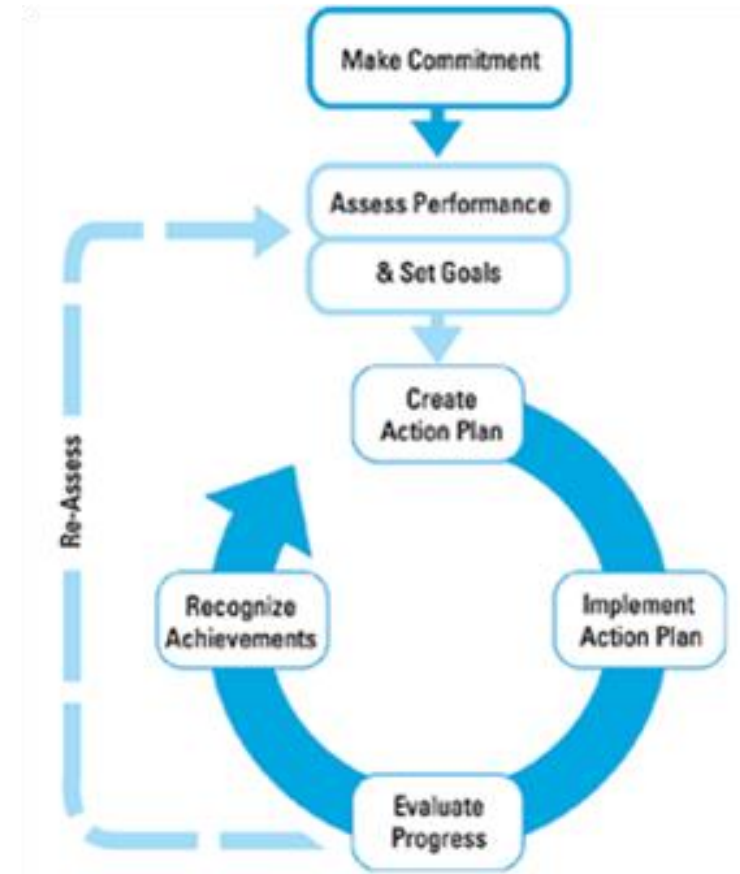
District with Energy Manager - green

Updated 7/11/16

BEST PRACTICE IMPLEMENTATION

ENERGY STAR Resources Supporting SEMP

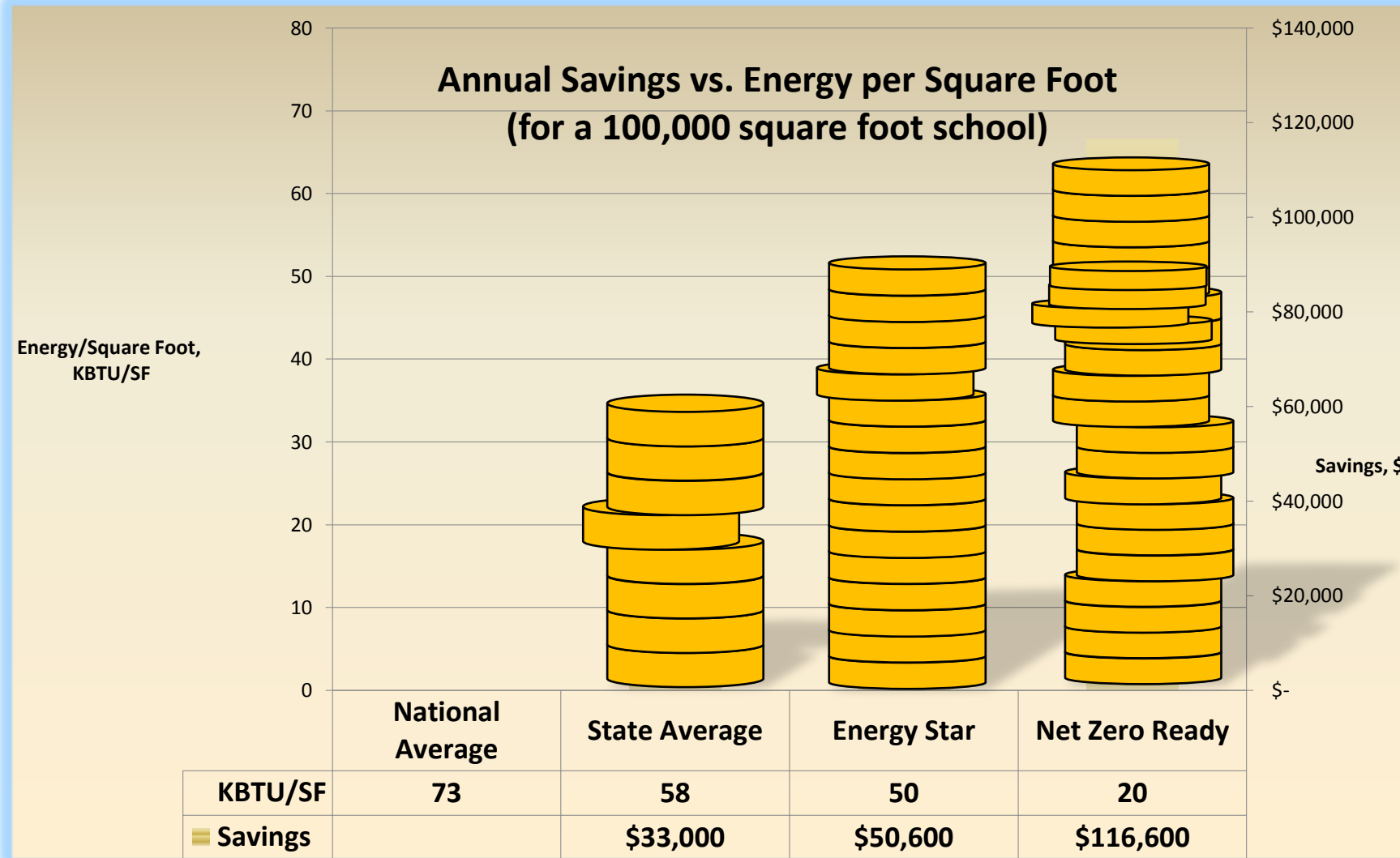
- Guidelines for Energy Management
- Portfolio Manager
- ENERGY STAR Labeled Schools
- National Building Competition



Benchmarking Energy Efficiency

	2010	2015
National	73	73
Kentucky	65	57
ENERGY STAR	50	50
KY's Best District	43	32
Net-Zero Ready	20	20

Relationship between Energy and Dollars



What have schools done

- District Oversight Committee
- Employed Energy Managers
- Monthly tracking and utility bill review
- Facility & Operation Audits
- Staff/Student Involvement
- Implemented Efficiency Measures
 - *Adjusted HVAC temperature set points*
 - *Incorporated HVAC temperature set backs*
 - *Lighting Retrofits*
 - *Performance Contracts*
 - *Demand Response Programs*



Kentucky ENERGY STAR Labeled Schools



	Count of First Label Year
2006	9
2007	3
2008	6
2009	36
2010	34
2011	36
2012	70
2013	42
2014	35
2015	37
2016	31
Total	339

Celebrating ENERGY STAR



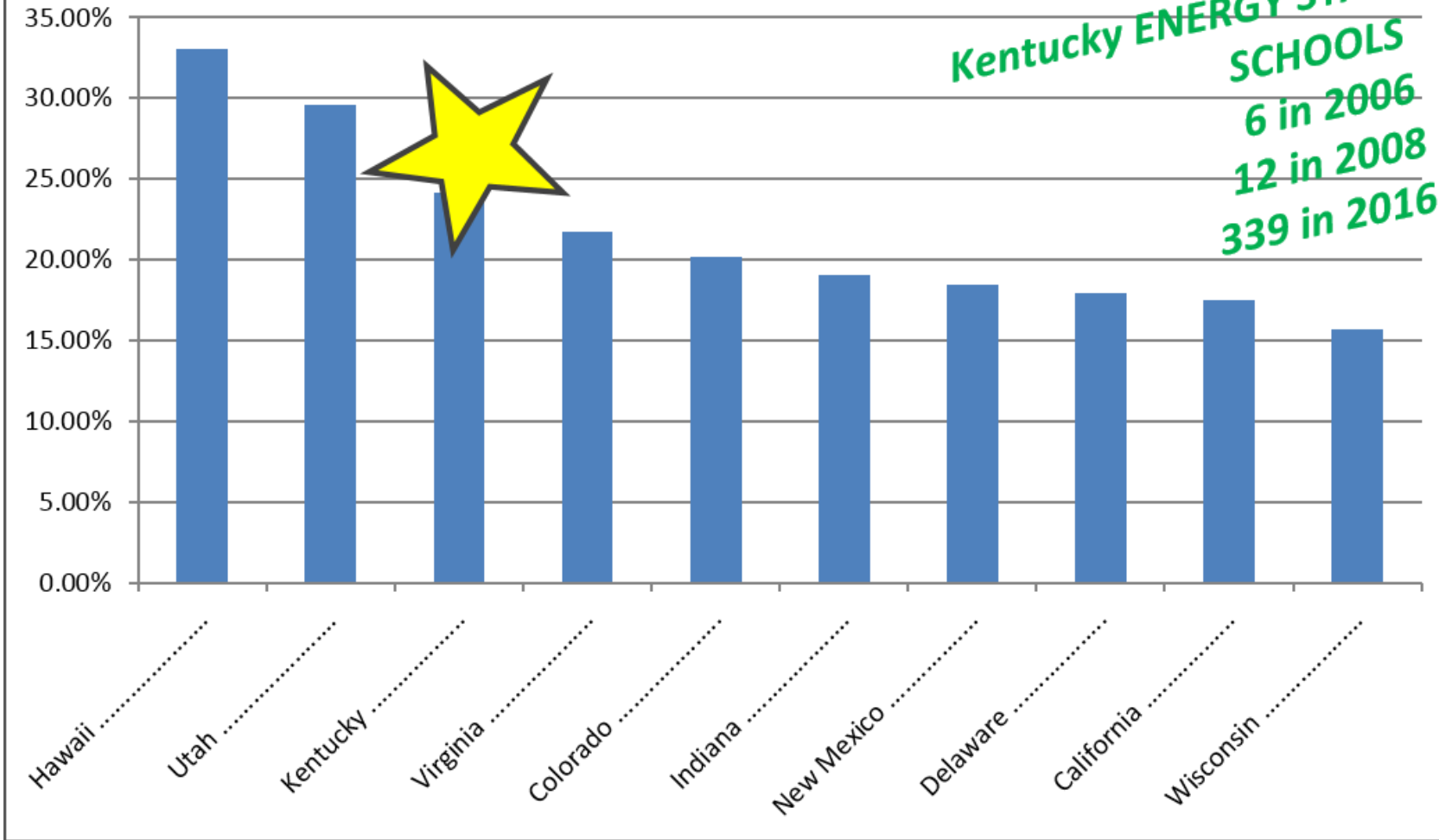
Owen Co. Schools



Owen Primary School

Top Ten States: Kentucky Ranks Third for Percentage ENERGY STAR Schools of Total Schools

June 22, 2016



TRAINING

ENERGY MANAGERS & FACILITY PERSONNEL

- Energy Conferences
- Energy Manager Certification
- Regional Meetings
- One-on-one sessions



Board Members, Legislators, Superintendents & Finance Officers

- Presentations
- Testimony



KSBA-School Energy Managers Project Presents

Kentucky's Battle of the School Buildings

An ENERGY STAR®
Battle of the Buildings™ Competition



132 School Buildings – 28 districts
Competition comparing Calendar Year 2015 to 2016

INTEGRATING WITH UTILITY DSM PROGRAMS

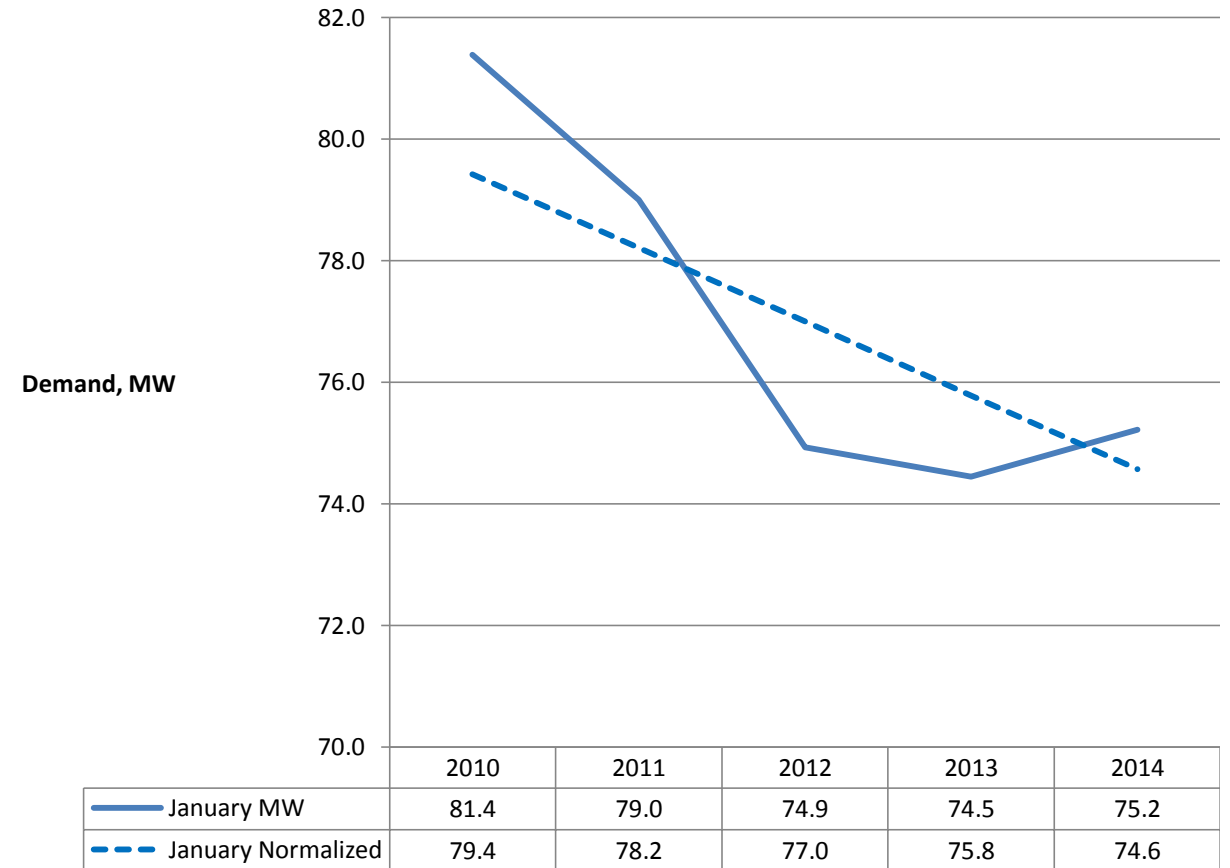
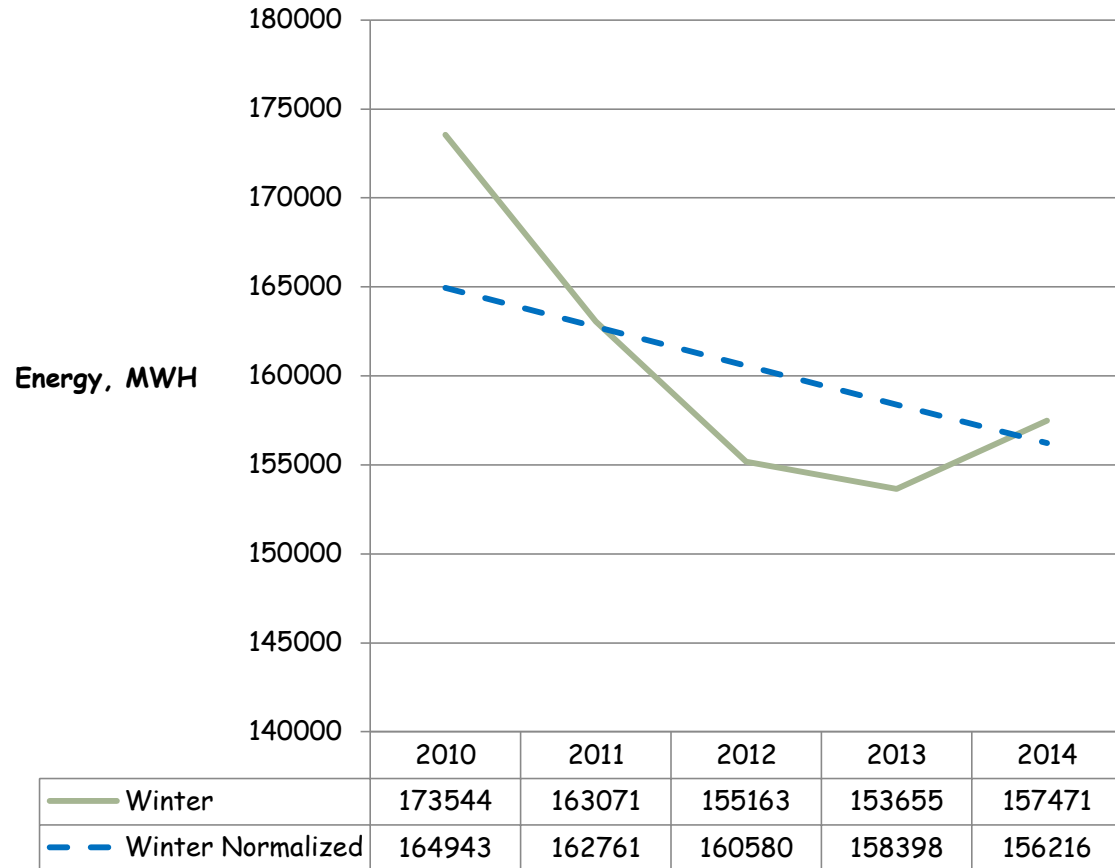
WIN–WIN–WIN

- ✓ Utility – Slow Demand Growth
- ✓ Taxpayer – Prudent use of Local Funds
- ✓ Students – More resources for Education

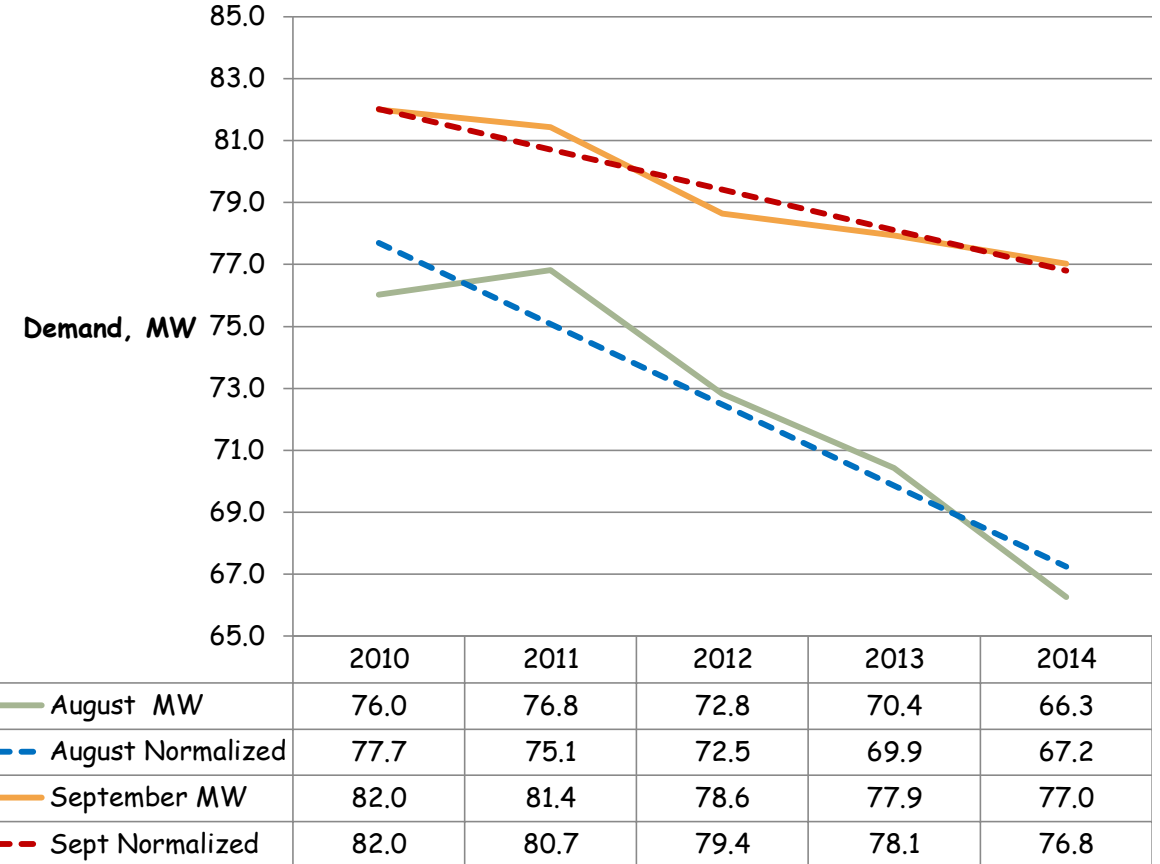
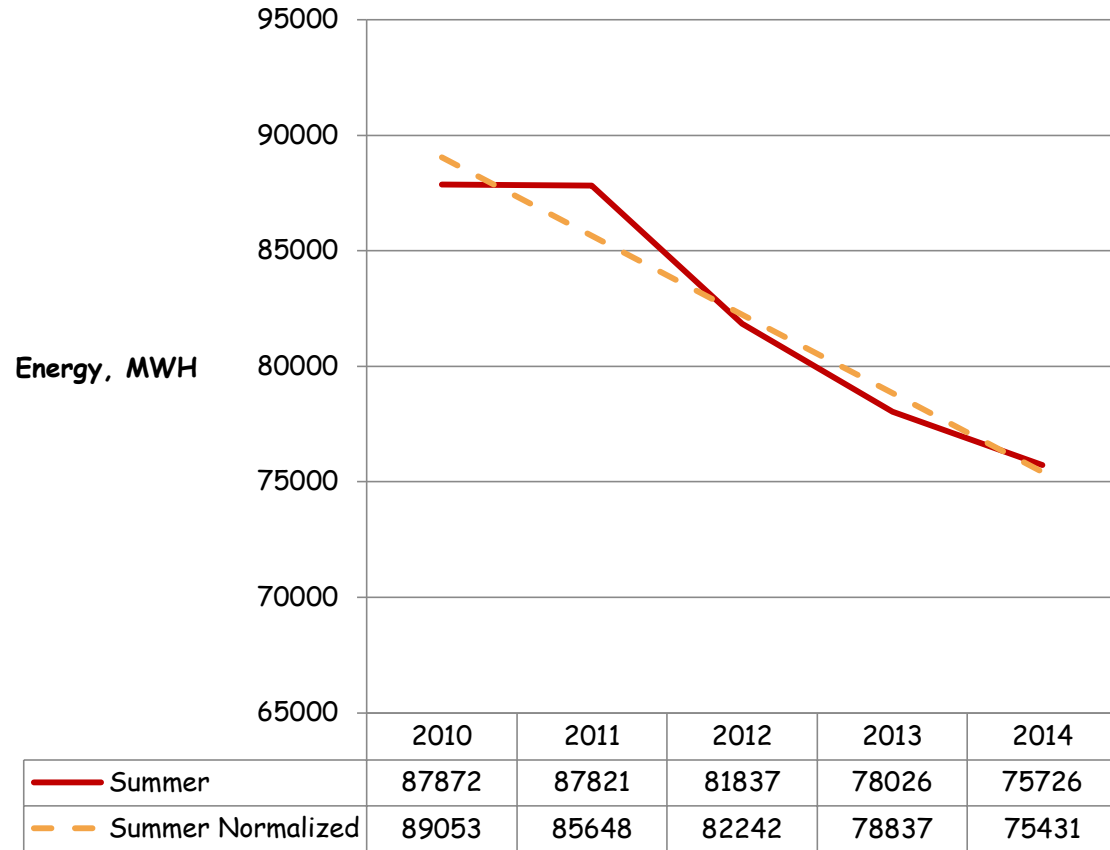
Program Basics

- 2.5% Demand and Energy Reduction Goal
- 50 % Energy Manager Salary Match
- 1.8 Million from utilities DSM program - (FY14 – FY16)
- 2.7 Million from utilities DSM program - (FY17 – FY18)
 - Special Energy Project Funding
 - Energy Manager Funding

Winter Energy & Demand



Summer Energy & Demand



LESSONS LEARNED

Fundamental Challenge

- 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.

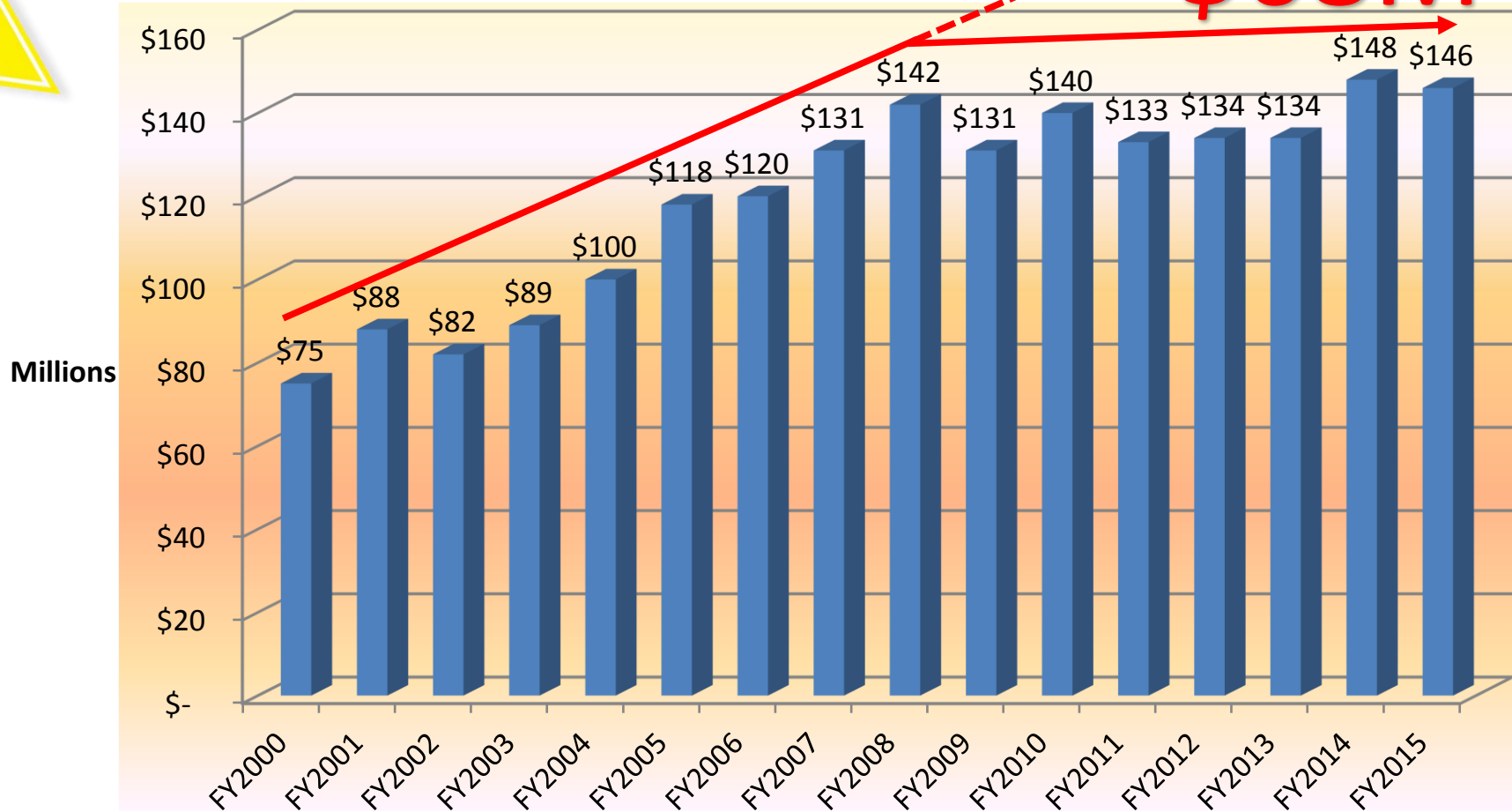
Key Factors for Successful Energy Management Program

- Support from School Board & Superintendent
- Buy in by all Principals - the building leaders
- Buy in from all faculty and staff
- Educate students on saving energy
- Provide weekly and monthly report for competition
- Identify Energy Conservation Measures (ECM's)
- Implement ECM's
- Recognize achievements



DOLLARS
FOR
STUDENTS
NOT
ENERGY

Figure 8. MUNIS K-12 Facility Energy Expenditures FY2000 - FY2015



ANNUAL SAVINGS POTENTIAL

Table 3. Annual Energy Savings Potential

Level	EUI	Incremental Savings	Annual Savings
Current	57.5		\$16.4M
ENERGY STAR	50	\$21.1M	\$37.5M
Best Performer	40	\$21.5M	\$59.0M

QUESTIONS ??????

