Consider

- A report produced by the Educational Facilities Laboratories
  The Economy of Energy Conservation in Educational Facilities

- Regarding life-cycle costing concepts:

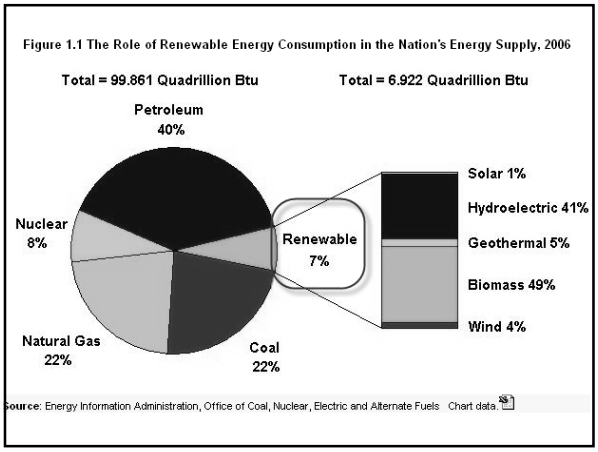
  "The current system of awarding contracts on the basis of first cost only is destined to become an ever bigger folly as the energy crisis intensifies and fuel costs rise."

O & M changes

"Energy waste springs from two basic sources – lethargy and ignorance. Much stems simply from the historic American proclivity for waste. In our schools even more is attributable to inability of O & M personnel to cope with ever more sophisticated mechanical and electrical equipment."

Educational Facilities Laboratories

- Established in 1958
- Merged with The Academy for Educational Development in 1979
- Published the referenced report in 1973



"We must get energy demand down to a sustainable range, or it's not going to make much difference whether we bring renewables into the supply chain," says Bill Prindle, deputy director for the American Council for an Energy-Efficient Economy. A proposal considered by Congress, which requires utilities to get 15 percent of their energy from renewable sources by 2020, would not satisfy the projected growth in energy demand. This means that more coal- or gas-fired power plants would have to be built and greenhouse gas emissions would continue to rise—unless energy efficiency is implemented in tandem with renewable energy requirements.

"Renewables won't succeed unless we do efficiency first and in parallel," says Prindle.

School's Energy Budgeting

- U.S. Department of Energy estimates K-12 schools spend $6 billion annually on energy costs—more than on books and computers combined (2004)
- $12 billion according to American School & University M&O study in 2008

Figure 1: American Association of School Administrators (AASA) Fuel and Energy Snapshot Survey

Top 10 Cost-Cutting Strategies

Percentage of respondents selecting the response

1. Implementing energy conservation measures: 59%
2. Cutting back on student field trips: 44%
3. Cutting back on heating and air conditioning use: 37%
4. Consolidating bus routes: 35%
5. Limiting staff business travel: 34%
6. Eliminating/modifying support personnel positions: 33%
7. Cutting back on purchasing supplies: 31%
8. Delaying nonessential facility upgrades and repairs: 29%
9. Eliminating/modifying instructional personnel positions: 29%
10. Eliminating/modifying administrative personnel positions: 21%

An AASA survey asked school superintendents about the effect of rising fuel and energy costs on their school districts. Ninety-nine percent of respondents reported these rising costs are having an impact on their school systems. AASA Fuel and Energy Snapshot Survey, July 29, 2008

Benefits of Energy Management

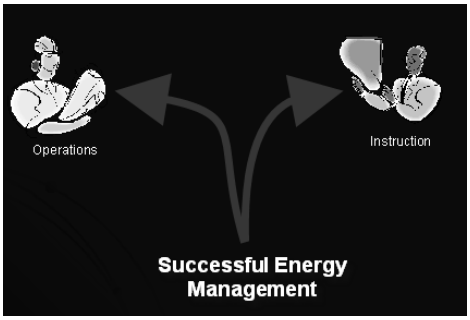
- Cost Savings – DOE estimates schools could save 25% of that by improving energy efficiency
- Positive public image of economy & good stewardship
- Contributes to reducing fossil fuel usage and emissions
- Models positive behaviors for students

So Many Benefits, Why Don't We Do It?

- According to Guidebook for K-12 Best Practices for Controlling Energy Costs
  - Unaware of energy savings opportunities
  - Unaware of consequences of inadequate O&M funding
  - Lack of clearly defined energy objectives

- Under-investment in building staff training
- Facility staff lacks crucial utility information
- Limited mission of facilities departments

Two Prongs



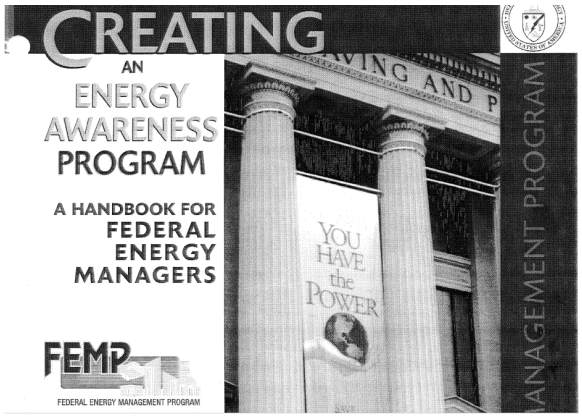
Developing the Plan with A Holistic Approach

- Discover the People, Process, and Technology
- Document the Opportunities
- Track usage
- Benchmark - Measure
- District Energy Policies
- Form an Energy Taskforce

- Address Behavioral and Technical Issues
- Energy Curriculum Development
- Implement an Energy Program Management plan
- Train for Successful Outcomes
- Publicity and Community Awareness Planning

Key Ideas

- Superintendent is Visionary Leader
- Board of Education - Leadership in Energy Conservation and Efficiency
- Get Cooperation at All Levels
- Set Goals and Monitor Progress
- Implementation by Administration, Faculty, Students, etc.
- Maintain Comfortable Environment



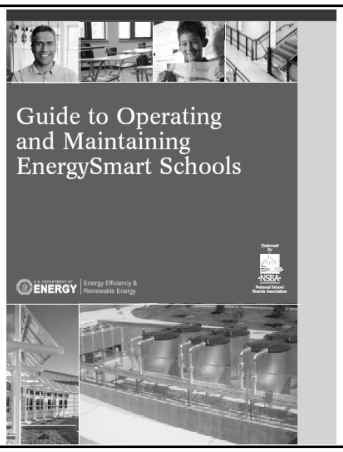


Figure 2: Operations and Maintenance Investigation and Implementation Process

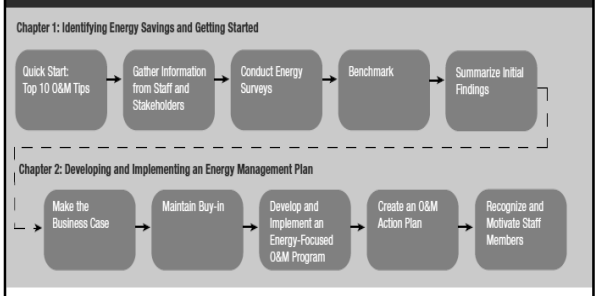
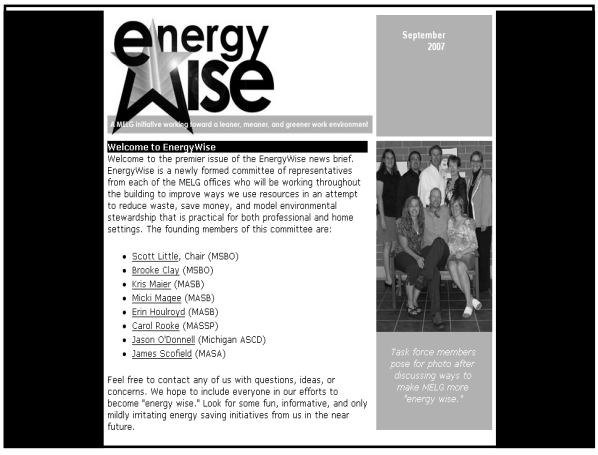


Table 2: Top 10 O&M Tips[1]

O&M Measure	Brief Description	Estimated Magnitude of Significance [2]
Install programmable thermostats (HVAC)	Temperature controls can be programmed to shut down heating and cooling during periods when spaces are unoccupied	
Perform energy surveys and audits (Information)	Walk-throughs and more intensive audits can quickly identify O&M problems and solutions	
Keep doors and windows closed (Building Envelope)	Open windows waste heating and cooling energy	
Review cleaning and maintenance activities (Preventative Maintenance)	Consistent and scheduled cleaning and maintenance are key to extending equipment life and avoiding costly breakdowns	
Provide training for key staff (Preventative Maintenance)	Knowledgeable personnel are imperative to sustained energy efficiency from O&M	
Conduct a plug load survey and develop a plan (Plug Loads)	Computers and vending machines can waste energy if their settings are not properly set to shut down after inactivity	
Control exhaust fans (HVAC)	Shut down exhaust fans when building ventilation is off to avoid unwanted outside air	
Inspect outside air systems (HVAC)	Clean roof units and economizers for proper operation	
Install outdoor lighting controls (Lighting)	Timers and photosensors decrease wasted lighting for outdoor use	
Replace exit sign lights with LEDs (Lighting)	LEDs require much less maintenance and have longer lives than conventional lights so they are great fits for exit signs	

Best · Above Average · Average · Moderate · Small



energy Wise

A MELG initiative working toward a leaner, meaner, and greener work environment

September 2007

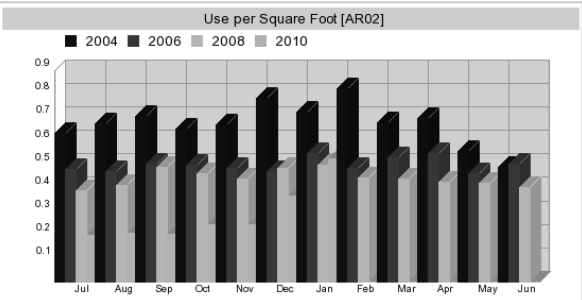
Welcome to EnergyWise

Welcome to the premier issue of the EnergyWise news brief. EnergyWise is a newly formed committee of representatives from each of the MELG offices who will be working throughout the building to improve ways we use resources in an attempt to reduce waste, save money, and model environmental stewardship that is practical for both professional and home settings. The founding members of this committee are:

- Scott Little, Chair (MSBO)
- Brooke Clay (MSBO)
- Kris Maier (MASB)
- Micki Magee (MASB)
- Erin Houlroyd (MASB)
- Carol Rooke (MASSP)
- Jason O'Donnell (Michigan ASCD)
- James Scofield (MASA)

Feel free to contact any of us with questions, ideas, or concerns. We hope to include everyone in our efforts to become "energy wise." Look for some fun, informative, and only mildly irritating energy saving initiatives from us in the near future.

Task force members pose for photo after discussing ways to make MELG more "energy wise."



MSBO

Average Unit Cost [OR05]

All Years
All Utility Type
Month: All Months
Buildings: MSBO-Suite 200
Accounts: 242700-000-1-200

Account Number	Year	Total Cost	Total Use	Avg Unit Cost
242700-000-1-200	2004	$2,613.51	31,601 KWH	$0.083
242700-000-1-200	2005	$2,363.60	28,814 KWH	$0.082
242700-000-1-200	2006	$2,099.23	23,396 KWH	$0.090
242700-000-1-200	2007	$2,224.22	24,352 KWH	$0.091
242700-000-1-200	2008	$1,181.21	12,381 KWH	$0.095

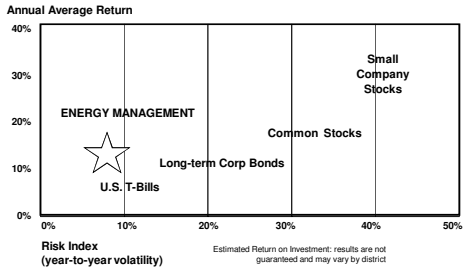
Summary- MSBO's electricity usage

- From FY04 to FY08-
  - 14.5% increase in Avg Unit Cost of Electricity
  - 22.4% decrease in cost per day of electricity
  - 33% decrease in usage per square foot

Focus on Consumption

- Calculating based on cost
  We saved $390 in 2007
- Calculating based on usage
  We avoided $661 in 2007 (energy not used multiplied by current cost)

Return on Investment!



A few resources

- www.msbo.org – go to energy management page
- www.eia.doe.gov
- www.need.org
- www.ase.org
- Energy Works Michigan
- www.greenschoolsalliance.org

Questions?

Thanks!

Scott Little
Michigan School Business Officials (MSBO)
517.327.2582
slittle@msbo.org