

Energy Conservation Program Update

Westerville City Schools
Board of Education Meeting
April 26, 2010





Energy Conservation Program REVIEW

- Board approval of contract with Energy Education, Inc. (EEI) August 2006
- Contract initiated: November 2006
- Baseline year: January-December 2006
- Comparison year: January-December 2009
- EEI cost avoidance projection for first three years of contract: \$2,400,000
 - (2007: \$725,000 2008: \$798,000 2009: \$877,000)



Energy Conservation Program Factors To Consider

- Cost of Utilities (Cost Per Unit)
- Weather – Degree Days
- Physical Buildings
 - Optimal Learning Environment
 - Scheduling HVAC: Occupied vs. Unoccupied
- Energy Education

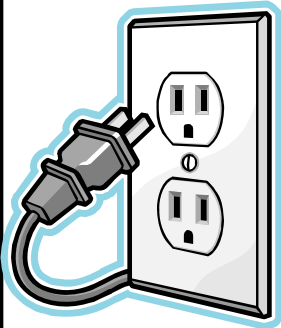
2009 Utility Costs

All Sites

Energy Type	Use	Units	Total Cost	Average	% of
				Unit Cost	Total Cost
Electricity	23,895,843	KWH	\$2,328,213	0.0974	67.75%
Natural Gas	82,439	MMBTU	\$916,669	11.1193	26.67%
Sewer	13,951	KGAL	\$119,777	8.5858	3.49%
Water	20,254	KGAL	\$71,991	3.5549	2.09%
		Total Cost:	\$3,436,650		

Average Cost Per Unit Comparison 2006 vs. 2009

Electricity-Average Cost Per Unit
2006 vs. 2009



42% ↑

Natural Gas-Average Cost Per Unit
2006 vs. 2009



6% ↓

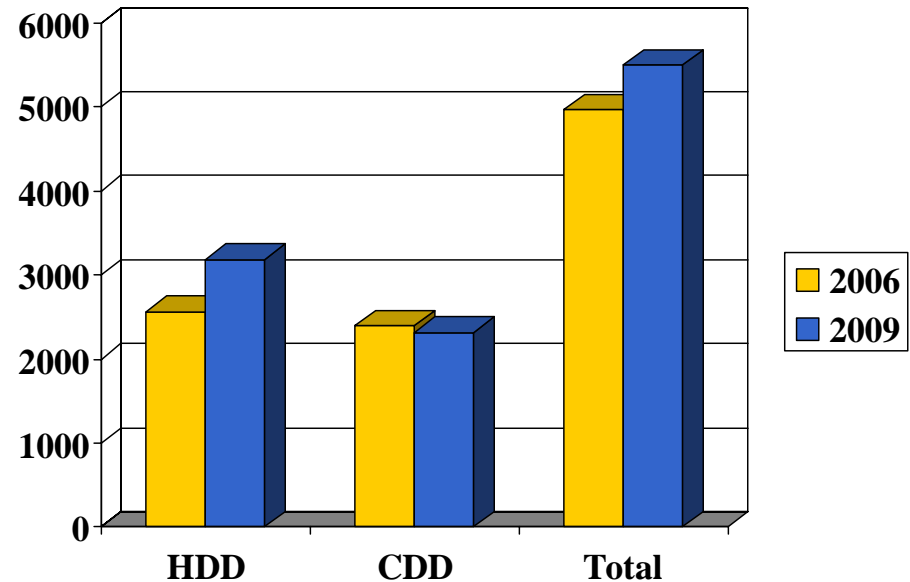
		% of Total Cost	2006	2007	2008	2009
Electricity	KWH	67.75%	\$0.0685	\$0.0816	\$0.0906	\$0.0974
Natural Gas	MMBTU	26.67%	\$11.1800	\$10.7974	\$12.0015	\$11.1193

Weather

Degree Days 2006 vs. 2009

- Degree Day
(55 degree base)
- 10.8 % more extreme
weather in 2009

<u>Degree Day Totals</u>	
2006: 4964	2009: 5501



2009 Actual Energy Usage vs. Expected Usage

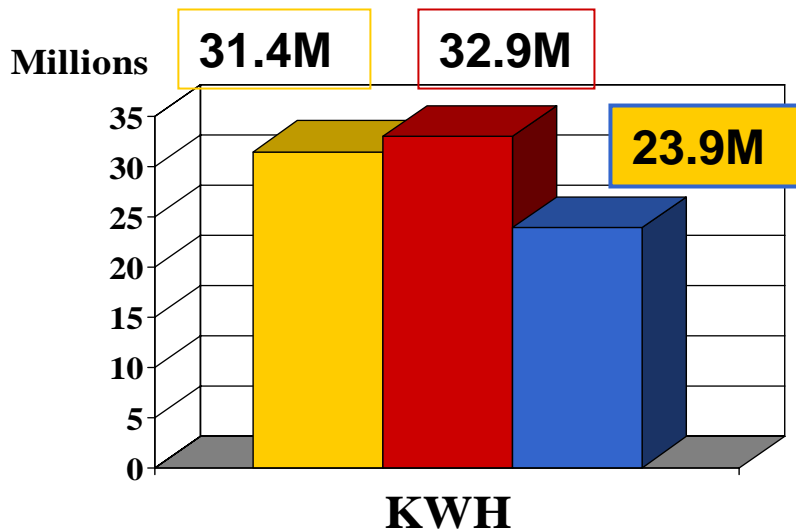
Actual 2006 

Expected 2009(w/o program) 

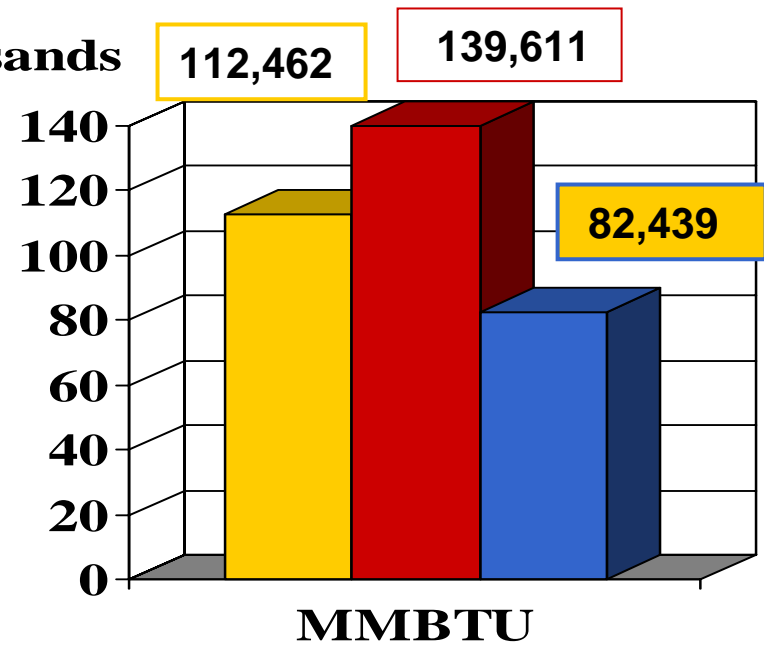
Actual 2009 

ELECTRICITY

NATURAL GAS



Thousands



2009 Energy Cost Avoidance

□ Expected Energy Costs	\$ 5,034,782
□ Actual Energy Costs	\$ <u>3,436,650</u>
□ <u>2009 Cost Avoidance</u>	\$ 1,598,132
□ <u>Special Savings</u>	\$ 15,411
Billing correction - natural gas account	
Projected Cost Avoidance	\$ 877,000
(Per EEI Proposal)	



Cost Avoidance

- **January-December 2009**
 - **\$ 1,598,132**
 - 31.7%

- **3-Year Program Cost Avoidance**
January 2007 – December 2009
 - **\$ 4,408,314**
 - 30.2%



Optimal Learning Environment

□ Customer Feedback

■ Building Temperature

- FY04 – Baseline 2.3
- FY09 3.8
- FY10 - Preliminary Results 3.9
(18 out of 23) 78%

■ Energy Program

- FY07 – Baseline 4.3
- FY09 4.9
- FY10 – Preliminary Results 4.9
(18 out of 23) 78%

(Scale: 1-5; 5 being best)



Scheduling HVAC

□ Occupied

- Classroom schedules
- Extracurricular activities/special school events
- WCS meetings
- Contracted events

□ Unoccupied

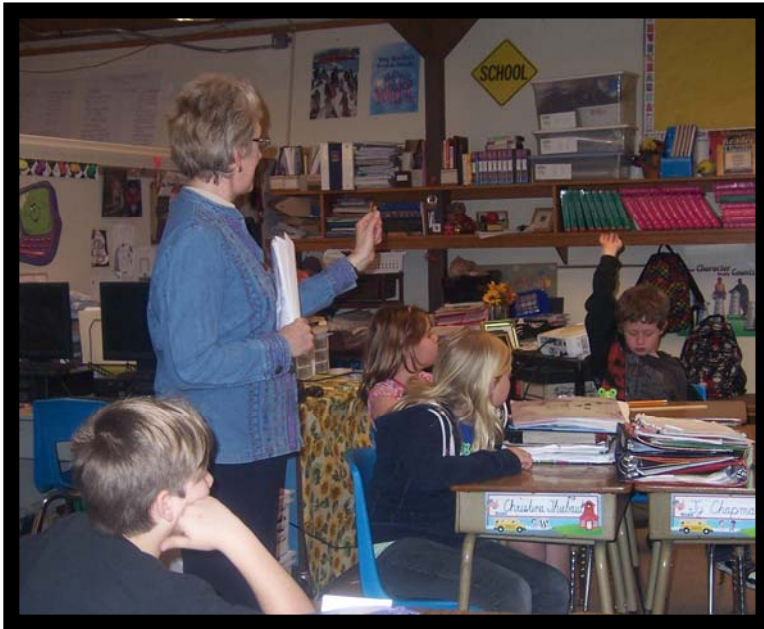
- Off shifts
(2nd and 3rd shift custodial & maintenance workers)
- Breaks and holidays
- Calamity days

Energy Education Solar Tour



Energy Education Classroom Presentations

- Reinforcing 5th grade science standards



Mrs. Siefker's Class – Annehurst



Mrs. Fusco's Class – Central College Magnet