

# Energy Performance Contracts

## The East Hartford Experience

### Who is East Hartford?

- A “distressed” community of 52,000 residents
- with a \$168M annual budget
- with a \$146M 5-Year Capital Plan (a wish list)
- including 150 miles of roads and other needs
- and our taxpayers have little ability to pay

# Energy Performance Contracts The East Hartford Experience

## What is East Hartford doing?

- Sacrificing capital investment for short-term tax relief
- Getting through one budget at a time
- Looking for new ideas to lower costs
  - Enter the EPC

# Energy Performance Contracts The East Hartford Experience

- EPC RFP issued/ opened 2005
- Six very competitive firms responded:
  - Noresco, Honeywell, Select Energy
  - Johnson Controls, Siemens, and Trane

# Energy Performance Contracts The East Hartford Experience

A joint Town/BOE committee selected uniform criteria and interviewed firms

- Performance Contracting History
- Ability & Experience/Project Team
- Financial Approach & Guarantee

# Energy Performance Contracts The East Hartford Experience

- 2007 - The Town signed a \$5M contract
  - Nine Town and nine Board buildings
  - \$750k of C L and P rebates
  - Tax exempt lease with Bank of America
  - 12 year P and I paid back with energy savings
    - Savings guaranteed; monitored independently\*
  - Success of Phase I paved the way for Phase II
- 2009 - Town signed a \$7.3M extension

## Project Goals

- Improve Comfort Conditions
- Reduce Energy and Operating Costs
- Repair, Modernize and Upgrade Facilities
- Reduce Need for Capital Funding
- Fund Improve. from Existing Operating Budget
- Achieve Guaranteed Financial Results
- Improve Reliability of Systems
- Utilize Technology for Systems Ops. & Performance



## Project Scope

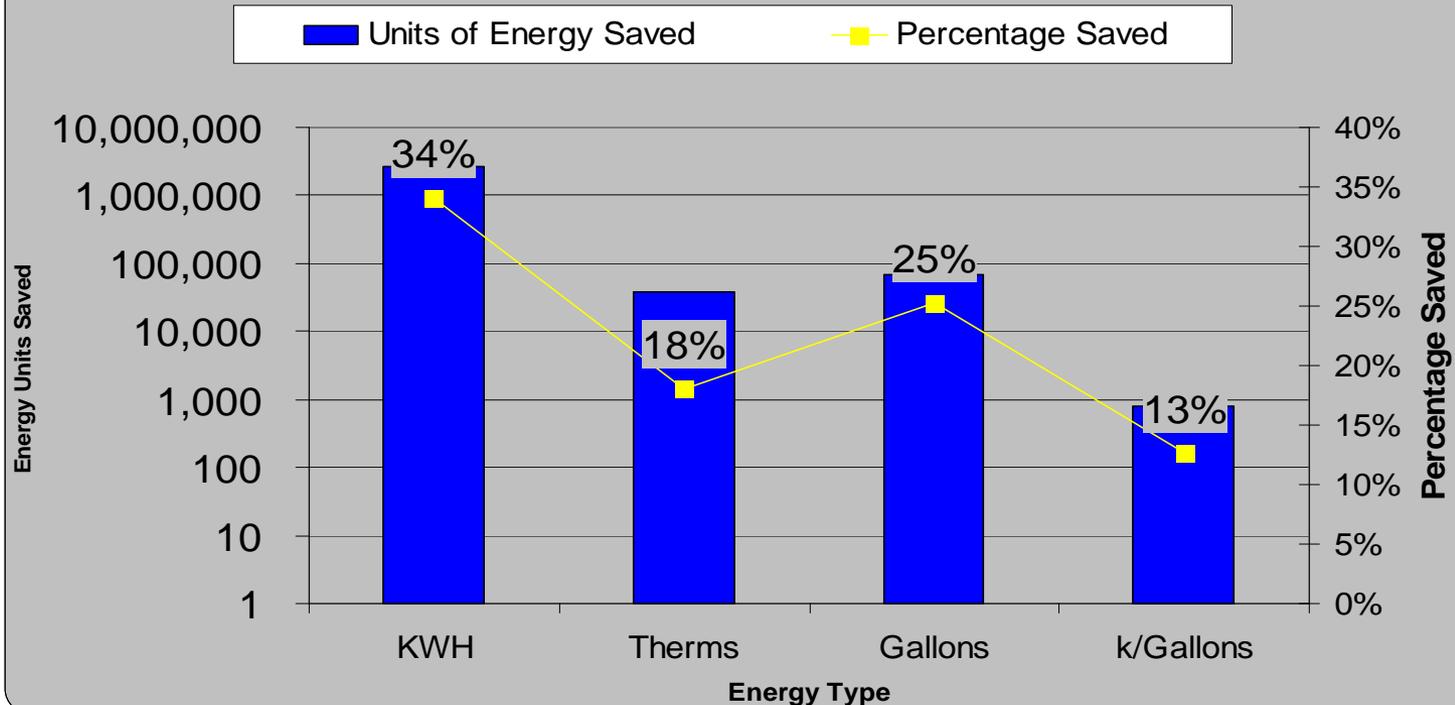
- Lighting Upgrades
- New Burners & Burner Controls
- Energy Management System (EMS)
- Motor Upgrades & Variable Speed Drives
- Window Film
- Weatherization
- Water Conservation
- Pool Cover
- Co-Generation Exhaust Heat Recovery
- Vending Machine Control
- Steam Trap Replacement
- Attic Insulation



## Utility Reduction – Pre & Post Contract

Utility	Units Type	Present or Before Energy Units	Future or After Energy Units	Saved Energy Units	Percentage % Saved
Electricity	KWH	7,663,847	5,051,809	2,612,038	34%
Natural Gas	Therms	211,079	173,120	37,959	18%
#2 Oil	Gallons	269,177	201,287	67,890	25%
Water / Sewer	k/Gallons	6,488	5,671	817	13%

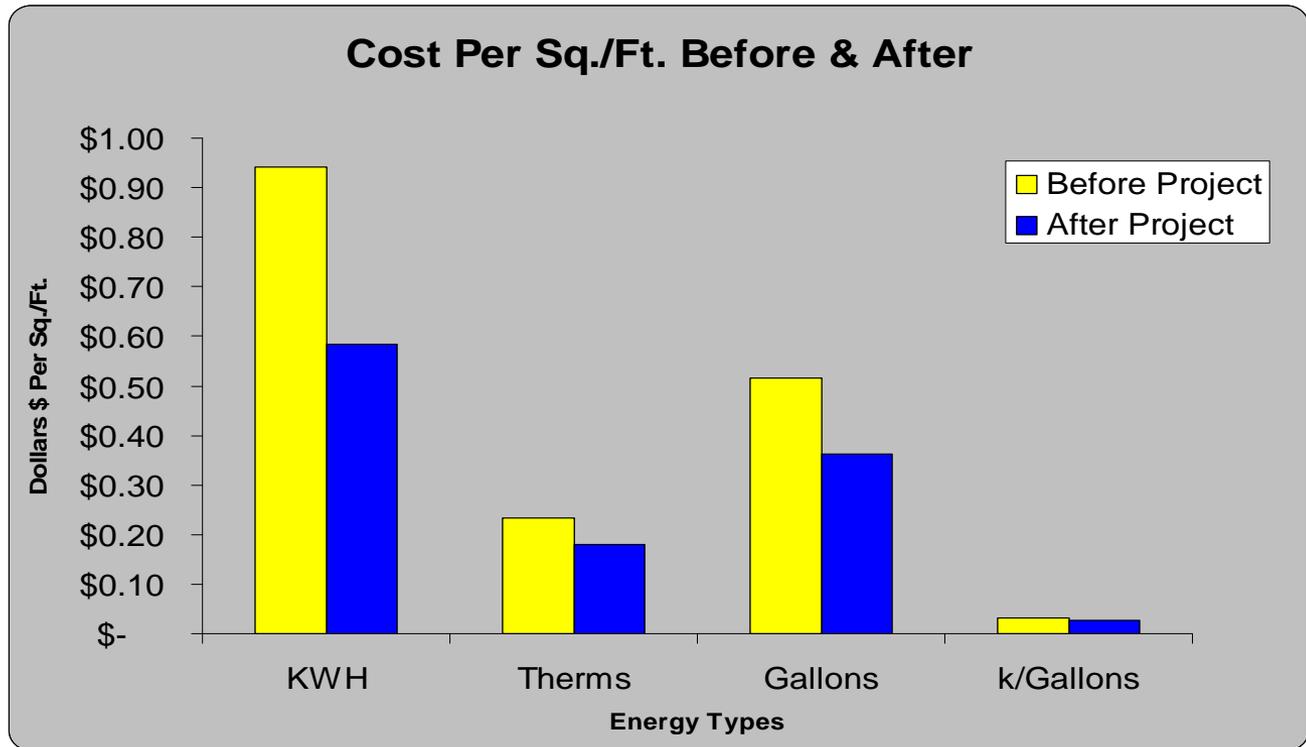
### Percentage & Units of Energy Saved



# East Hartford Public Schools

## Utility Cost Comparison – Pre & Post Contract

Utility	Units Saved	Before Project Dollars \$ '05-'06	\$/sqft	After Project Dollars \$	\$/sqft
Electricity	KWH	\$ 941,488	\$ 0.94	\$ 584,113	\$ 0.58
Natural Gas	Therms	\$ 234,230	\$ 0.23	\$ 180,811	\$ 0.18
#2 Oil	Gallons	\$ 515,877	\$ 0.52	\$ 363,083	\$ 0.36
Water / Sewer	k/Gallons	\$ 31,587	\$ 0.03	\$ 25,986	\$ 0.03
<b>Total</b>		<b>\$ 1,723,182</b>	<b>\$ 1.72</b>	<b>\$ 1,190,658</b>	<b>\$ 1.19</b>



# East Hartford Public Schools



## Finance Decision

Interim Period Finance Cost	\$217,374
Project Cost	\$4,999,576
Total Cost to Finance	\$5,216,950
Interest Rate	4.250%
Term of Financing (Years)	11.00
Payment	Monthly Advance
Capital Cost Avoidance?	No
State Aid Reimbursement Rate	0%

## Payment Schedule

	(Excludes buy-downs)			
	Monthly	Quarterly	Semi-annual	Annual
Payments	\$49,372	\$147,484	\$293,105	\$578,961
Annual Payments	\$592,461	\$589,937	\$586,210	\$578,961
No. of Payments	132	44	22	11
Total Payments	\$6,517,069	\$6,489,305	\$6,448,308	\$6,368,568
Total Interest	\$1,300,120	\$1,272,356	\$1,231,359	\$1,151,618

## Annual Cost & Savings Analysis

A	B	C	D	E	F	G	H	I	J	K	L	M
Year	Annual State Aid	Annual Energy Savings	Annual Operational Savings	Energy Rebate/ Incentives	Capital Cost Avoidance	G Total Annual Savings	Annual Project Costs	Annual Service Cost		H+I+K Total Costs	G-K=L Annual Cash Flow	Cumulative Cash Flow
							Project Cost	Service Cost		Total Cost	Cash Flow	Cash Flow
Installation	Rate 0%	\$151,219	\$0	\$34,824	\$0	\$186,043	\$0	\$0		\$0	\$186,043	\$186,043
1	\$ -	\$532,525	\$0	\$90,726	\$0	\$ 623,251	\$592,461	\$23,380		\$615,841	\$7,410	\$193,453
2	\$ -	\$548,501	\$0	\$25,660	\$0	\$ 574,161	\$592,461	\$27,811		\$620,271	(\$46,110)	\$147,343
3	\$ -	\$564,956	\$0	\$0	\$0	\$ 564,956	\$592,461	\$28,645		\$621,106	(\$56,150)	\$91,194
4	\$ -	\$581,905	\$0	\$0	\$0	\$ 581,905	\$592,461	\$29,504		\$621,965	(\$40,060)	\$51,133
5	\$ -	\$599,362	\$0	\$0	\$0	\$ 599,362	\$592,461	\$30,389		\$622,850	(\$23,488)	\$27,645
6	\$ -	\$617,343	\$0	\$0	\$0	\$ 617,343	\$592,461	\$31,301		\$623,762	(\$6,419)	\$21,226
7	\$ -	\$635,863	\$0	\$0	\$0	\$ 635,863	\$592,461	\$32,240		\$624,701	\$11,162	\$32,388
8	\$ -	\$654,939	\$0	\$0	\$0	\$ 654,939	\$592,461	\$33,207		\$625,668	\$29,271	\$61,659
9	\$ -	\$674,587	\$0	\$0	\$0	\$ 674,587	\$592,461	\$34,204		\$626,664	\$47,923	\$109,582
10	\$ -	\$694,825	\$0	\$0	\$0	\$ 694,825	\$592,461	\$35,230		\$627,690	\$67,134	\$176,716
11	\$ -	\$715,670	\$0	\$0	\$0	\$ 715,670	\$592,461	\$36,286		\$628,747	\$86,922	\$263,638
12	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
13	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
14	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
15	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
16	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
17	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
18	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
19	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
20	\$ -	\$0	\$0	\$0	\$0	\$ -	\$0	\$0		\$0	\$0	\$263,638
<b>Totals</b>	\$0	\$6,971,695	\$0	\$151,210	\$0	\$7,122,905	\$6,517,069	\$342,197		<b>\$6,859,267</b>	\$263,638	<b>\$263,638</b>



## Reduction as follows:

- 6.9 million tons of Carbon dioxide CO<sub>2</sub>
- 13,445 tons of Sulfur dioxide SO<sub>2</sub>
- 5,266 tons of Nitrous oxide NO<sub>x</sub>
- Emissions reduction is equivalent to removing 677 cars from the roads
- Number of homes powered 401
- Emissions benefit is equivalent to planting 943 acres of trees

# Energy Performance Contracts

## The East Hartford Experience

- This must be a bi-partisan project
- You will need an energy consultant
  - Do not create a taxpayer funded research project
- The ESCO should handle the engineering
- The cash flow should always be positive
- Bid the financing – the market is maturing
- Maximize the rebates - lean on the consultant
- Prepare the M and V for two years
- The contract will freak out your Corp. Counsel
- You'll be glad you did!