ESCO Update

SIEMENS

Town of Dedham

Energy Management Services Contract

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Agenda

- Introduction – Bill Keegan
- Project Phases Schedule – Roland
- Project Status by Measure – Roland
- Progress to Date – Bill and Roland
- Photovoltaic Systems – Roland Butzke
- Greenhouse Gas Offset - Roland Butzke

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Project Phases - Schedule

- ESCO Audit
  December 2009 – May 2010
- Construction
  July 2010 – June 2012
- Commissioning
  June 2011 – June 2012
- Measurement and Verification
  July 2012 – July 2032
- On-Going Operations and Maintenance
  July 2012 - .....

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Current Status by Measure

Measure	% Complete	
	Construction	Commissioning
Lighting Retrofits	95	90
Lighting Controls	95	80
Energy Management System (EMS) - Pneumatic/DDC Conversion	90	65
Energy Management System (EMS) - Local Control/DDC Conversion	90	65
Building Envelope Improvements	95	90
Vending Machine Controls	95	90
Pipe Insulation	95	90
Steam Traps and Steam System Improvements	95	85
Boiler Replacement or system improvements	95	75
Infrared Heat Installation	95	80
Network Controllers	95	90
Unit Ventilator Replacement (w/Demand Controlled Ventilation)	90	75
Domestic Water Upgrades (toilets, aerators, urinals)	95	85
Valve Jackets	95	90
Cooltrols for Walkin Freezers/Refrigerators	95	90
Domestic Hot Water Upgrades	95	80
Pool Cover	95	80
Traffic Signals	95	65
PV	95	90

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Progress

- Still in Construction Phase through June 2012
- Construction Period Savings to Date
  - 7% reduction on Elec
  - 10% reduction on Fuel
  - More Heating Degree Days 2011 – Extremely Cold Long Winter
  - Unit Ventilators at Schools – Introduced more outside air
  - Improved Ventilation to Current Standards
  - Controls brought on-line later in season
- Commissioning Systems
  - Get all systems running as planned and we willmake savings

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Photovoltaic Systems

- High School -128W PV System
  - 40,197 kWh produced YTD [on-line 8/1/11]
  - 50,247 Lbs of CO_2 offset
  - $7,669 saved YTD
- Town Hall - 23W PV System
  - 6,135 kWh produced YTD [on-line 8/1/11]
  - 7,669 Lbs of CO_2 offset
  - $1,170 saved YTD
- Exploring SRECs – Potential $50,000/yr

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On-line Data

- Solrenview – Realtime Data on PV Arrays
  - http://www.solren.com/SolrenView/livesites.html
  - Under "Site Name" type Dedham
- GreenScreens
  - Touchscreens with real-time data at the Town Hall and High School
  - Data will also be online and linked to Dedham's website
  - Sample – Similar site
    - http://esmchs.esmcsd.greentouchscreen.com/

Dedham's Project

Greenhouse Gas Offsets

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Project Emission Summary

Organization: *Town of Dedham*
Facility/Project: *Performance Contracting Project*
Baseline Year: *2010*
Project Term (years): *20*

eGRID Sub-region name: NPCC New England Custom Emissions Factor: *n/a*

Annual Reduction

CO2 Reductions	
Electricity	315,484.0
Natural Gas	1,329,448.0
#2 Fuel Oil	0.0
#6 Fuel Oil	0.0
Total	1,644,912.0
in pounds	

Other Pollutants	
NOx	1,950.4
SO2	709.8
in pounds	

CO2 Equivalencies

Project Term Reduction

CO2 Reductions	
Electricity	6,309,281.3
Natural Gas	26,588,960.2
#2 Fuel Oil	0.0
#6 Fuel Oil	0.0
Total	32,898,241.5
in pounds	

Other Pollutants	
NOx	39,008.2
SO2	14,197.2
in pounds	

CO2 Equivalencies

Thank You.

Town of Dedham
ESCO Update

	Volume						Cost							
	Electric		Gas		Oil		Electric		Gas		Oil		Total	
	Baseline 2009	June 10-May 11	Baseline 2009	June 10-May 11	Baseline 2009	June 10-May 11	Baseline 2009	June 10-May 11	Baseline 2009	June 10-May 11	Baseline 2009	June 10-May 11	Baseline 2009	June 10-May 11
	KWh	KWh	Therms	Therms	Gal	Gal	$KWh	$KWh	$Therm	$Therm	$Gal	$Gal	Total	Total
Town Hall	210,640	214,960	2,191	6,870	5,807		$39,468	$36,235	$2,605	$7,587	$11,324		$53,397	$43,822
Police Station	175,993	181,407	7,541	7,659			$28,775	$28,548	$14,205	$14,670			$42,980	$43,218
Fire Station	71,960	72,160	21,136	9,937			$12,777	$11,242	$38,840	$18,925			$51,617	$30,167
East Dedham FS	22,999	25,442	4,481	4,751			$3,892	$3,825	$8,485	$9,196			$12,377	$13,021
Main Library	64,480	67,280	7,435	8,303			$13,294	$12,622	$13,962	$15,365			$27,256	$27,987
Rec Center	51,510	56,089			2,992		$9,684	$8,633			$5,834		$15,518	$8,633
Endicott Estate	45,206	41,568	11,519	11,346			$8,173	$7,756	$21,608	$7,756			$29,781	$15,512
Endicott Library	28,137	27,894	3,355	3,849			$5,081	$4,474	$6,415	$7,482			$11,496	$11,956
Brookdale Cemetary	10,922	10,302	1,203	1,221			$2,243	$1,945	$2,416	$2,500			$4,659	$4,445
DPW Facility	154,814	119,660	22,817	24,205			$27,646	$18,915	$54,728	$42,187			$82,374	$61,102
Park and Recs Garage	Included in above	Included in above	Included in above	Included in above										
Mechanics Garage	Included in above	Included in above	Included in above	Included in above										
HS	1,266,180	1,234,040	111,330	132,005	19,206	416	$249,224	$240,352	$211,647	$254,283	$37,452	$811	$498,323	$495,446
Rec Pool	255,520	257,000	44,127	34,107			$45,071	$35,647	$77,805	$61,979			$122,876	$97,626
Oakdale ES	131,137	118,022	29	0	22,453	21,647	$23,783	$22,607	$236	$0	$43,783	$42,212	$67,802	$64,819
Riverdale ES	144,406	126,160	3	0	16,603	19,317	$25,330	$21,474	$183	$0	$32,376	$37,668	$57,889	$59,142
Greenlodge ES	227,400	168,769	16,398	25,002	10,348	4,807	$42,877	$31,581	$31,155	$48,750	$20,179	$9,374	$94,211	$89,705
Dexter ES	199,176	209,760	1,237	1,205	10,776	13,832	$37,094	$39,623	$2,460	$2,459	$21,013	$26,972	$60,567	$69,054
Early Childhood Center	94,785	94,124			13,018	11,477	$17,956	$27,094			$25,385	$22,380	$43,341	$49,474
	3,155,265	3,014,537	254,802	270,460	101,203	71,496	$ 592,368	$ 552,573	$ 486,750	$ 493,139	$ 197,346	$ 139,417	$ 1,276,464	$ 1,185,129

$ 91,335

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