



Q3 2013 LEADERSHIP STEERING COMMITTEE MEETING

NOVEMBER 8, 2013

www.mass.gov/dcamm/aep



**ACCELERATED
ENERGY
PROGRAM**



COMMONWEALTH COMMITMENT
TO A CLEAN ENERGY FUTURE

Secretary Shor
Commissioner Cornelison

Division of Capital Asset Management and Maintenance
D·C·A·M·M

Governor Patrick



Secretary Sullivan
Commissioner Sylvia



Agenda

Welcome & Recognitions

Carole Cornelison, DCAMM

Spotlight – Innovative Technology

Tom Mazzeo, HOC

Berkshire County Jail and House of Correction

Tony Ransom, DCAMM

AEP Quarterly Report Review

Jenna Ide, DCAMM

Spotlight – Access & Opportunity

Dick Goulet, NECC

Northern Essex Community College

Hank Corinha, Enterprise Equipment

DOER Update

Eric Friedman, DOER

Questions & Answers

Welcome

AEP Recognition

This quarter DCAMM and DOER recognize **Tom Mazzeo** from the Berkshire County Sheriff's Office as the AEP Spotlight Partner.



Tom has provided outstanding efforts on the AEP:

- Helped lead and implement a major energy efficiency and renewable energy project.
- Guided consultants through a complete energy assessment of the site.
- Assisted with developing an integrative design of three systems (condensing boilers, instantaneous hot water generation and solar thermal array) – 56% annual energy savings!

Thank you for your dedicated efforts!

Spotlight – Innovative Technology

Berkshire County Jail and House of Correction

Facility Overview:

- Direct supervision facility of 160,000 square feet, built on 25 acres.
- Total inmate capacity is about 500.
- 288 cells among 8 two-tiered housing units, or pods.

Energy Project Overview:

Investment: \$3.5 million

Annual Savings: \$365,000 in costs (**56% reduction**)

365,000 gallons of water

104,144 therms of gas

1,413,434 kwh of electricity

1,170 tonnes of CO₂

ECMs:

- Integrated redesign of 3 systems
 - High efficiency condensing boilers
 - Instantaneous hot water generation
 - Solar thermal arrays
- Energy Management System & photovoltaic array
- Retrofit of lighting and installation of wall sensors

Innovative Technology



The instantaneous water heater being installed with condensing boilers and solar thermal arrays.

AEP Quarterly Report Review

Program Goals & Partners



Major Q2 2013 Accomplishments

Defined Approach for Towards Zero Net Energy (TZNE) Retrofits

Held an AEP Press Event

Significant Progress with Small Sites

Drafted In-Reach AEP Kit



The AEP TZNE charrette on September 13, 2013 brought together an integrated team of 74 people from various disciplines including architects, energy engineers and facility managers.

Charrette held to identify how to implement Towards Zero Net Energy (TZNE) retrofits at Commonwealth (state-owned) facilities. TZNE retrofits aim to achieve deeper energy retrofits (40% or more reduction in energy use) while also installing renewable energy systems.

- Facilitated 4-hour workshop with two break-out sessions
- Defined specific changes needed by DCAMM, agencies and engineering consultants
- Brought together an integrated team of 74 people across disciplines
- 20+ “Just Do It” actions identified

Break-out session #1:

- 3-5 success elements from prior ZNE projects
- Potential challenges of implementing success elements on DCAMM projects

Break-out session #2:

- Strategies to address challenges
- Annotate as “Just Do It” or “Longer Term”



Deputy Director Jenna Ide provided immediate direction on changes that could be implemented.

TZNE Best Practices

1. Define ZNE Goals and Align with Existing Conditions
2. Incorporate Innovative Solutions
3. Establish Integrated Processes
4. Assign the Right Team (Right People and Team Size)
5. Get Buy In at ALL levels
6. Ensure “Right Timing” of Retrofits
7. Manage Post-project Operations

Some of the TZNE “Just Do Its”

Planning

- Conduct or review facility condition assessments and capital plans
- Target deep energy ECMs and plug load reduction (with occupant behavior modification)
- Develop Energy Master Plan, Owner’s Project Requirements and Basis of Design documents

Integrated Team

- Define integrated team structure and qualified members
- Develop stakeholder engagement plan

Innovative technology

- Use “AEP Current List of Innovative Technology”
- Include training of facility managers on innovative technology

Post Project Operations

- Hire energy performance management firm to keep site at high performance

Bradley Palmer and Halibut Point State Parks Press Event

On September 27, Bradley Palmer State Park in Topsfield and South Hamilton, MA and Halibut Point State Park in Rockport, MA were the focus of a press event.

- Commissioner Mark Sylvia, DOER
- Commissioner Jack Murray, DCR
- Deputy Director Jenna Ide, DCAMM



Jules Nohra (Left) and Bruce Terry (Center) of Source One discuss the audit and installation process of energy conservation measures at Bradley Palmer State Park.

Utility Approved Vendors

Two (2) new companies:

- **Guardian Energy Management Solutions:** Bundle of 13 public safety sites – 4 audits completed
- **Horizon Energy Services:** Bundle of 13 UMass sites.

Eight (8) existing companies:

- **Prism** - All audits complete; Notice to Proceed (NTP) pending for 4 sites
- **Nxegen** – NTPs issued for most of bundle
- **Source One** – NTPs issued for most of bundle
- **RISE** – NTPs issued for most of bundle; construction complete for Fitchburg
- **AECOM** – Audits underway
- **NES** – 8 Pre Approvals issued; 4 draft audits underway
- **Energy Conservation** – 2 pre approvals issued; 4 audits in process
- **Paquette** – NTPs pending for 4 audits

Utility Approved Vendors

10 Vendors

176 Sites Underway

80 Sites Audited

12 Sites in
Construction

Working Group Goals

Provide support to facilities before, during and after an AEP project

- Streamline communication between DCAMM and facilities
- Provide tools to assist facilities before, during and after projects (FM kit, training, support in future)
- Assist facilities measure ongoing improvements and identify opportunities through central metering, databases and other means.

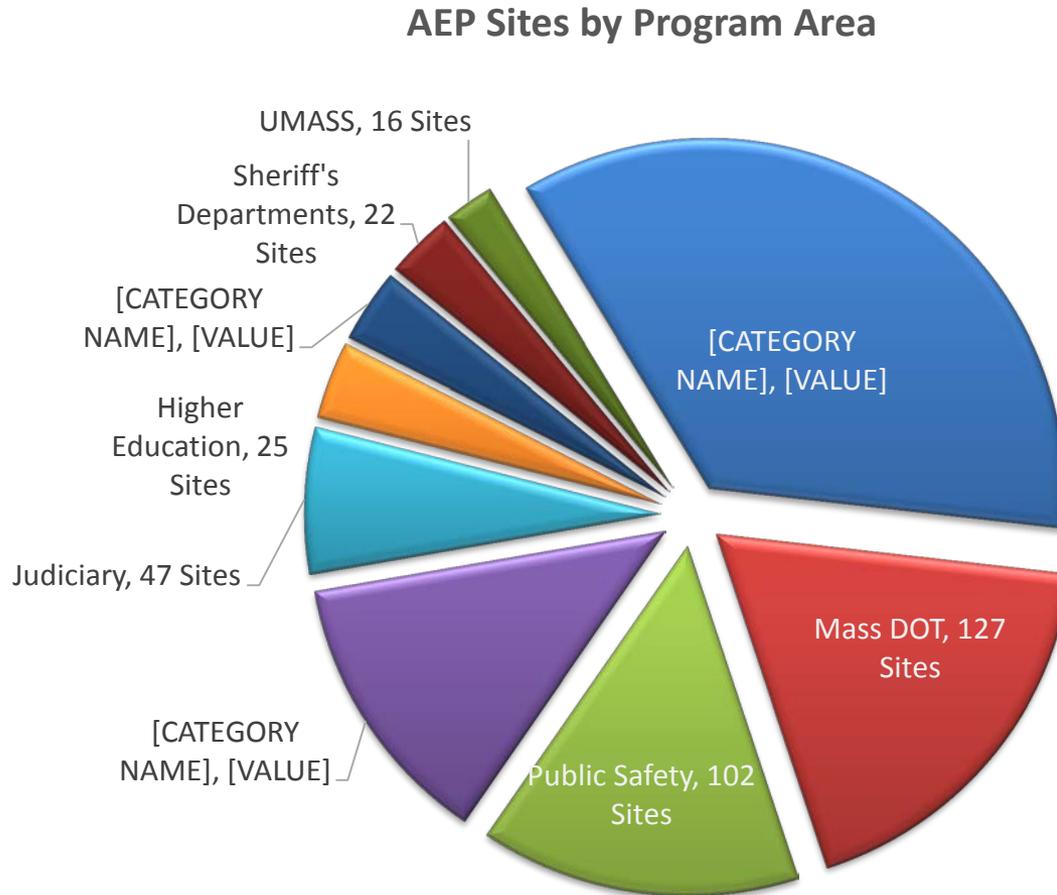
AEP Facility Kit

A set of materials provided to facilities to help communicate and promote AEP and project details to occupants.

- “Coming Soon” poster
- FAQ Sheet
- Electronic display template
- “Pardon our dust” notification posters
- Post-project thank you card

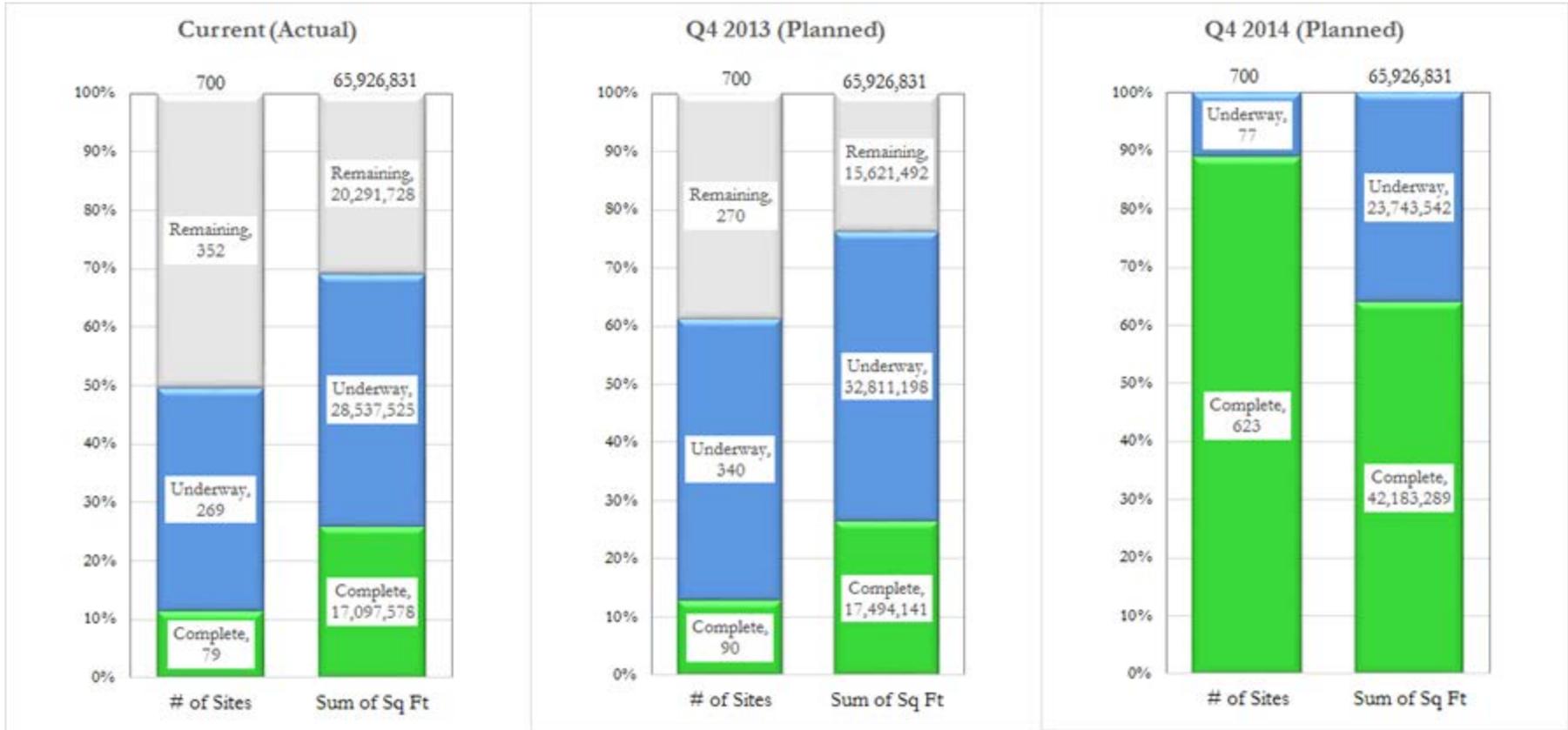
Program Areas

The graphic below provides an overview of the 700 sites by Program Area.



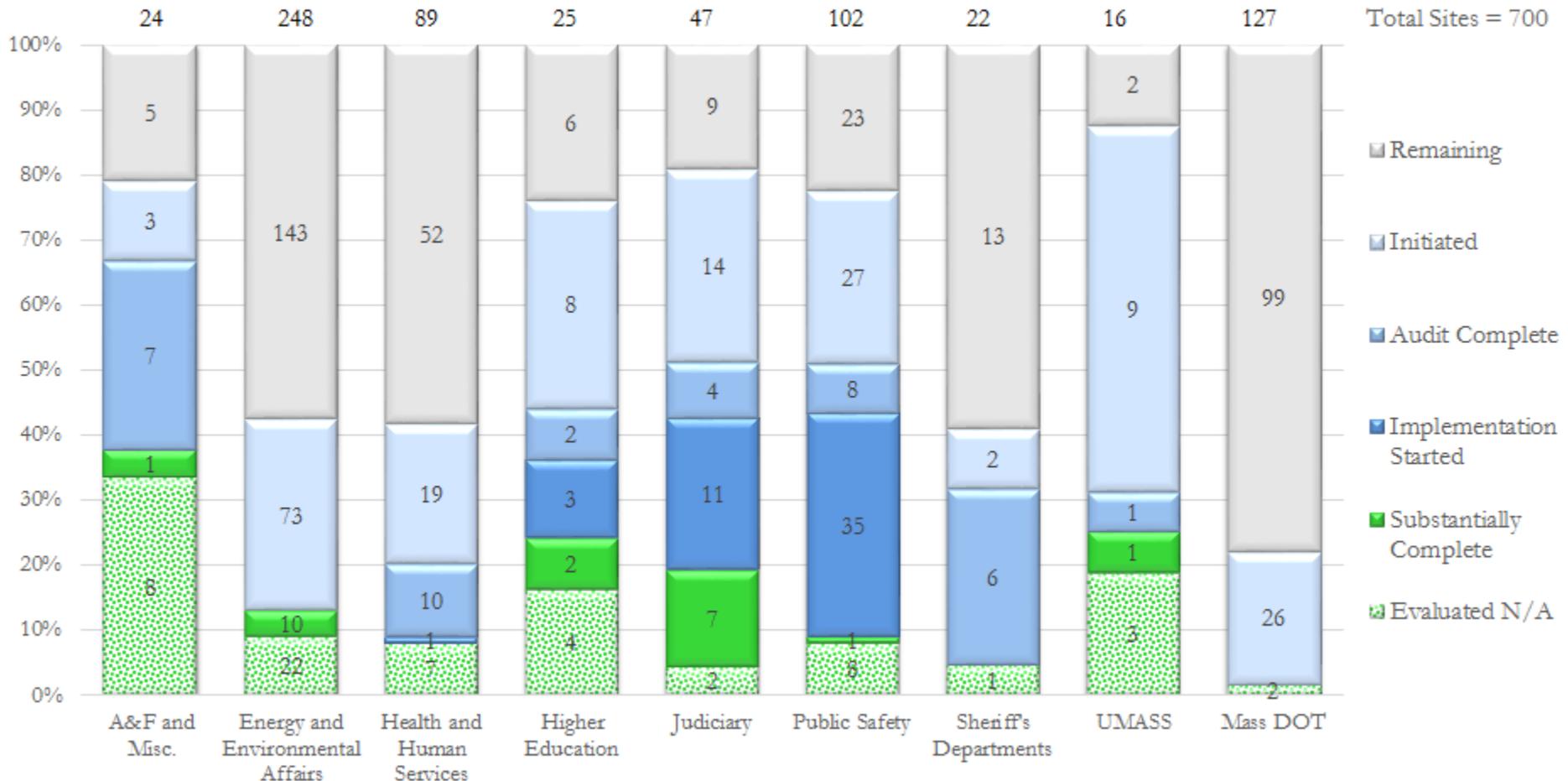
AEP Scope
700 Sites

Program Status – Q3 2013

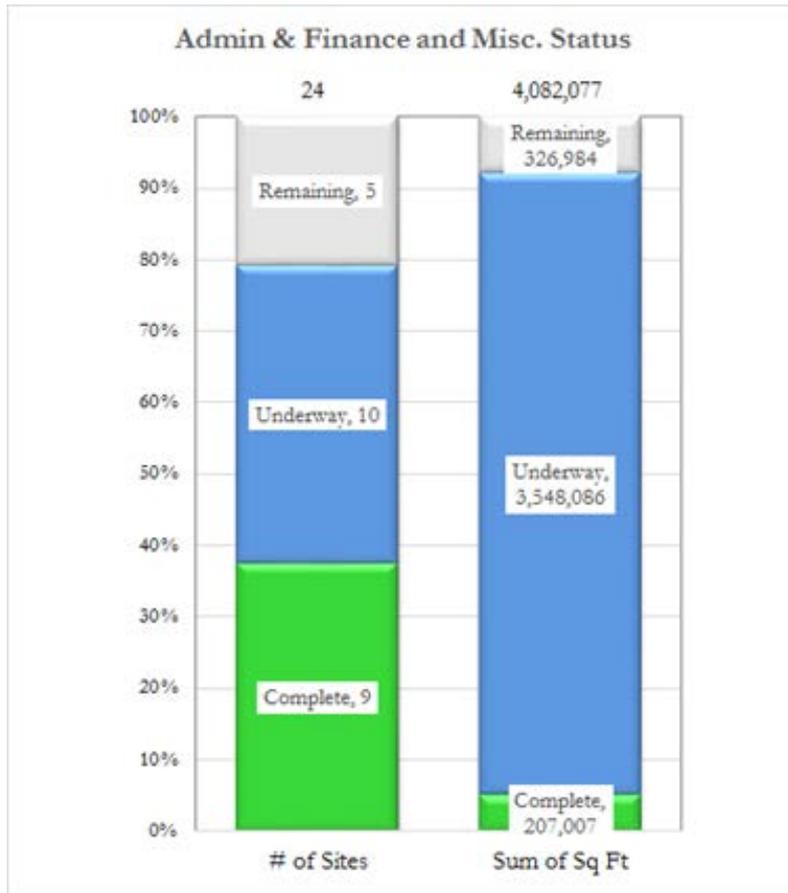


Program Status – Q3 2013

Site Status by Program Area



Admin & Finance and Misc.



Estimated Financials

Project Costs: \$59.1 million

Annual Energy Savings: \$3.8 million

Highlights

Remaining Sites:

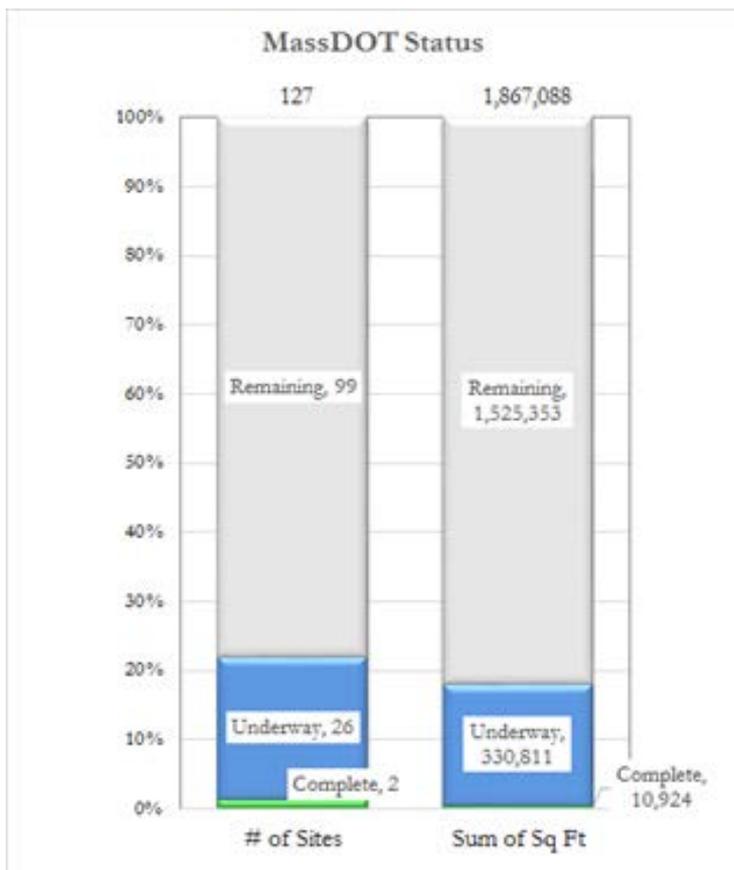
Two sites (Lancaster Complex OSP and Job Center New Bedford) were identified for TZNE pilot sites.

Underway Sites:

Veterans' Cemeteries initiated with UV Guardian.

D-B Contractor selected for McCormack and Lindemann Buildings.

State House has 2 retrofit projects: a lighting project which is complete, and a new comprehensive project to be advertised in Q2 2014.



Estimated Financials

Project Costs: \$4.0 million

Annual Energy Savings: \$0.5 million

Highlights

Underway Sites:

Two bundles with a total of 26 sites in Mass DOT District 4 were issued to AECOM and NES in Q1 2013 through the utility vendor contracts.

NES completed nine (9) draft audits.

AECOM is expected to finalize audit work in Q4 2013.

Remaining Sites:

In Q4 2013, the AEP team plans to issue a bundle of all 19 sites in Mass DOT District 2.

Appendix B: List of All AEP Sites

Appendix B: All AEP Sites



Site Information				AEP Program Status		
Program Area	Site Name	Municipality	Sq Ft	Status	Planned Start	Changed this Quarter
Agency Site Code						
A&F and Misc.				24 Sites	4,082,077 s.f.	
CAPITAL ASSET MANAGEMENT & MAINTENANCE				17 Sites	3,904,138 s.f.	
	BSB00	HURLEY BUILDING	BOSTON	347,022 s.f.	Audit Complete	
	BSB06	LINDEMANN BUILDING	BOSTON	225,875 s.f.	Audit Complete	
	BSB01	MCCORMACK BUILDING	BOSTON	800,000 s.f.	Audit Complete	
	BSB04	PITTSFIELD STATE OFFICE SITE	PITTSFIELD	54,062 s.f.	Audit Complete	
	DCP15	SPRINGFIELD STATE OFFICE DWIGHT ST	SPRINGFIELD	125,000 s.f.	Audit Complete	
	BSB03	STATE HOUSE	BOSTON	650,000 s.f.	Audit Complete	
	DCP02	STATE TRANSPORTATION BUILDING	BOSTON	901,000 s.f.	Audit Complete	
	DCP06	1010 COMM AVE	BROOKLINE	53,868 s.f.	Evaluated N/A	Bundle Name/Project #
	DCP23	NORTH AMERICAN INDIAN AFFAIRS	BOSTON	39,000 s.f.	Evaluated N/A	Evaluated N/A - Long Term Lease & Other Agency Considerations
	DCP18	OAKDALE COMPLEX OSP	WEST BOYLSTON	41,530 s.f.	Evaluated N/A	Bundle Name/Project #
	DCP24	OLD GRAFTON STATE HOSPITAL OSP	GRAFTON	2,660 s.f.	Evaluated N/A	Bundle Name/Project #
	DCP22	OUR LADY OF THE AFFLICTED RECTORY	WALTHAM	5,412 s.f.	Evaluated N/A	Bundle Name/Project #
	BSB05	SPRINGFIELD STATE OFFICE LIBERTY ST	SPRINGFIELD	21,000 s.f.	Evaluated N/A	Bundle Name/Project #
	DCP19	SURPLUS LYMAN SCHOOL FOR BOYS	WESTBOROUGH	16,907 s.f.	Evaluated N/A	Bundle Name/Project #
	DCP30	SURPLUS MEDFIELD STATE HOSPITAL	MEDFIELD	18,980 s.f.	Evaluated N/A	Bundle Name/Project #
	DCP27	MASS INFORMATION TECHNOLOGY CENTER	CHELSEA	425,000 s.f.	Initiated	
	DCP10	LANCASTER COMPLEX OSP	LANCASTER	176,822 s.f.	Remaining	2014 Q1 Procurement Strategy
DEPARTMENT OF VETERANS SERVICES				2 Sites	20,127 s.f.	
	VET00	VETERAN'S CEMETERY AGAWAM	AGAWAM	9,887 s.f.	Initiated	AEP Site Status
	VET01	VETERAN'S CEMETERY WINCHENDON	WINCHENDON	10,240 s.f.	Initiated	AEP Site Status
DIVISION OF EMPLOYMENT AND TRAINING				4 Sites	57,812 s.f.	
	DES04	JOB CENTER TAUNTON	TAUNTON	7,650 s.f.	Audit Complete	Bundle Name/Project #
	DES00	JOB CENTER BROCKTON	BROCKTON	29,562 s.f.	Remaining	2013 Q4

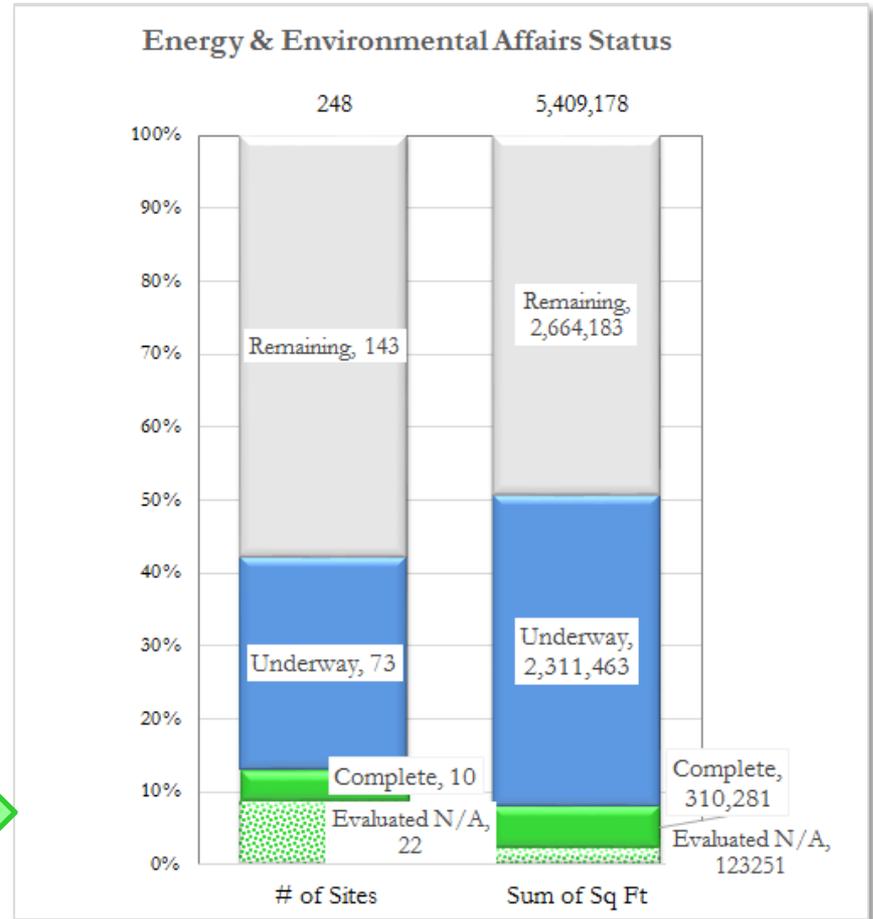
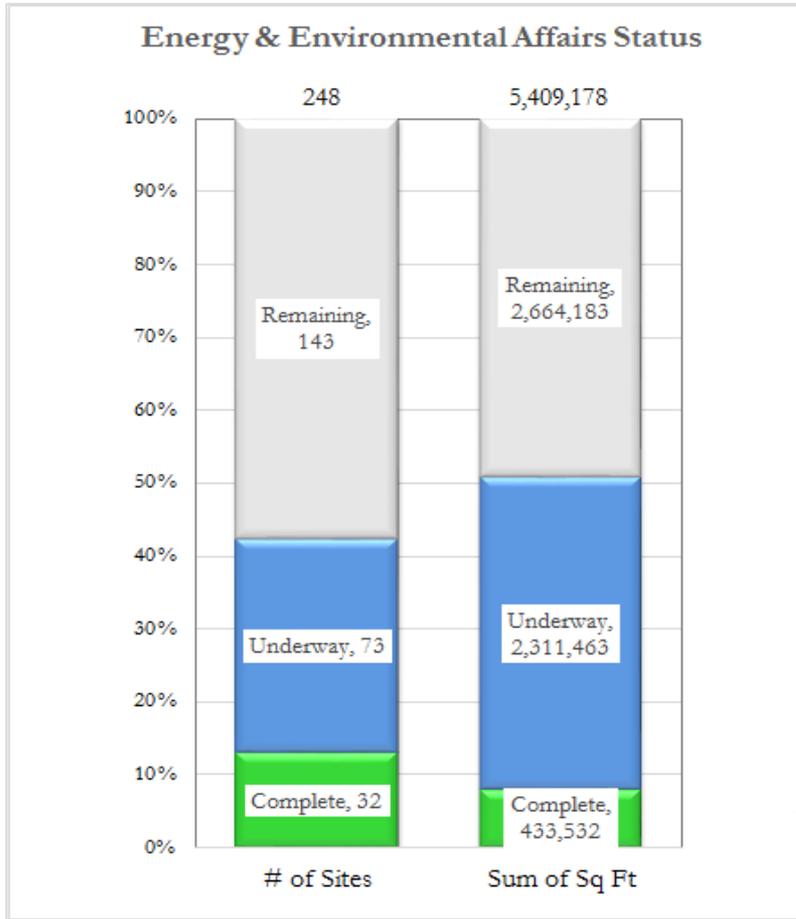
Appendix C: Schedule of AEP Initiated Sites

Appendix C: AEP Initiated Sites - as of 6/30/13

Site Selection	Project Initiated	Audit Started	Audit Approved	Procurement Start	Impl. Started	Subst. Complete	On Hold	Project Cancelled
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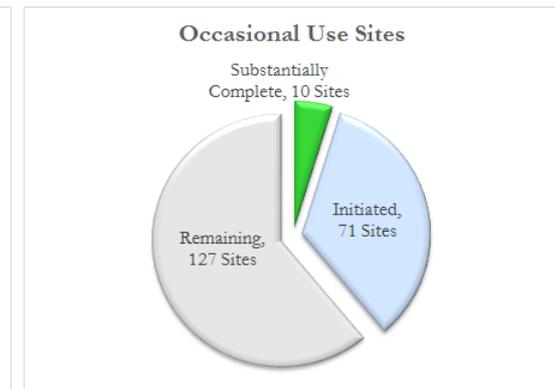
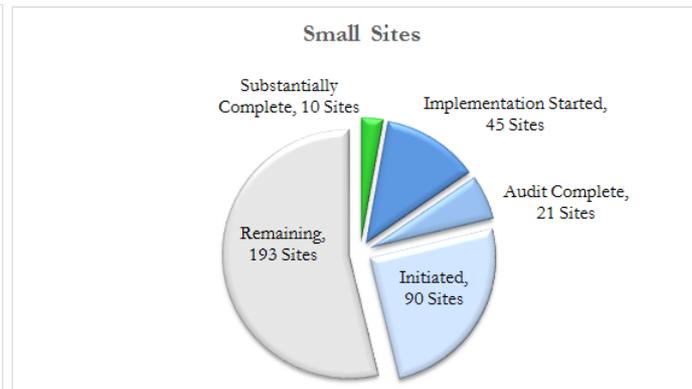
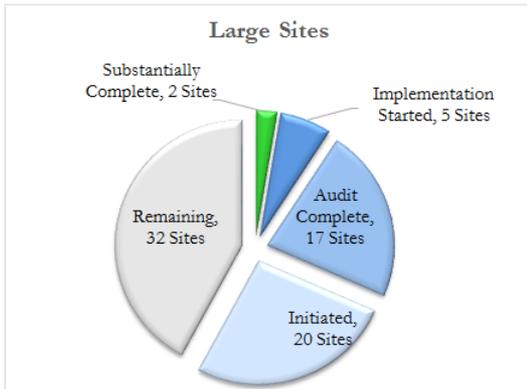
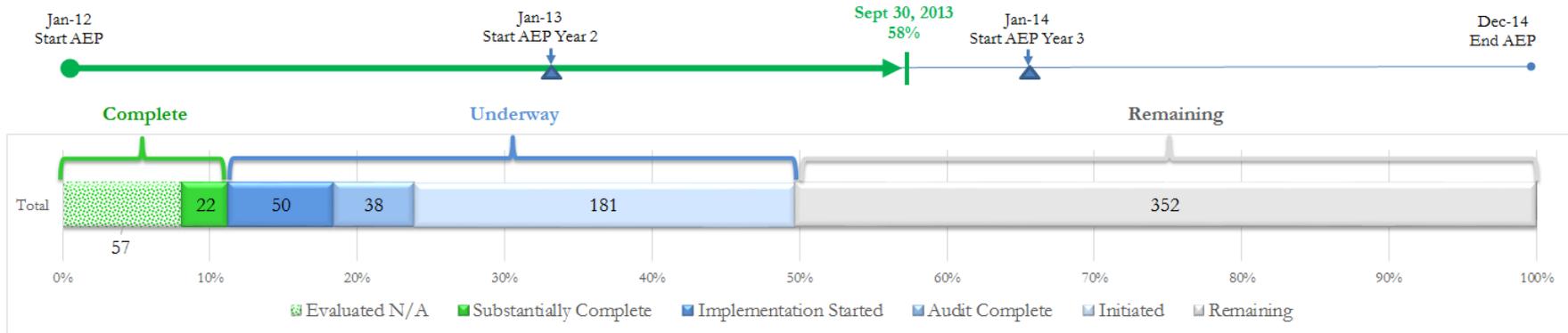
Site Information			AEP Program Status															
Program Area	Agency	Municipality	Sq Ft	Leading Organization	Project Description	Active Consultant/ Contractor	2012	2013 Q1	2013 Q2	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14
A&F and Misc.		11 Sites	3,555,736 s.f.															
CAPITAL ASSET MANAGEMENT & MAINTENANCE		8 Sites	3,527,959 s.f.															
	HURLEY BUILDING	BOSTON	347,022 s.f.	DCAMM OPDC	Study of fire protection combined with energy improvements- both previously studied- for Hurley Building; emphasis on upgrading implementation plan by expanding swing space options to reduce number of temporary moves. Tracked as part of AEP Program with OPDC.	Study - .												
	LINDEMANN BUILDING	BOSTON	225,875 s.f.	DCAMM	Design-Build project for McCormack & Lindemann buildings in Boston's Government Center. Project will greatly improve occupant comfort in both buildings and address many deferred maintenance items. ECMs include (but not limited to): New Air Handling Units, Interior Storm Windows, Lighting, HVAC Controls, Water Conservation Upgrades.	Study - Kling Stubbins.												
	MASS INFORMATION TECHNOLOGY CENTER	CHELSEA	425,000 s.f.	DCAMM	Comprehensive, Energy Design Build	Study - ARUP. Contractor -												
	MCCORMACK BUILDING	BOSTON	800,000 s.f.	DCAMM	Design-Build project for McCormack & Lindemann buildings in Boston's Government Center. Project will greatly improve occupant comfort in both buildings and address many deferred maintenance items. ECMs include (but not limited to): New Air Handling Units, Interior Storm Windows, Lighting, HVAC Controls, Water Conservation Upgrades.	Study - Kling Stubbins.												
	PITTSFIELD STATE OFFICE SITE	PITTSFIELD	54,062 s.f.	DCAMM OPDC														
	SPRINGFIELD STATE OFFICE DWIGHT ST	SPRINGFIELD	125,000 s.f.	DCAMM OPDC	Deferred Maintenance and some ECMs. Managed by OPDC and assisted by E-team. Tracked as part of AEP Program with OPDC.	Study - ARUP.												
	STATE HOUSE	BOSTON	650,000 s.f.	DCAMM	Lighting Upgrades at State House, including LEDs where applicable.	Study - Kling Stubbins. Contractor - Dagle Electrical Construction Corp.												
	STATE TRANSPORTATION BUILDING	BOSTON	901,000 s.f.	DCAMM	Comprehensive energy and water upgrades at the Mass. State Transportation Building in Boston. ECMs to include: HVAC upgrades, Control upgrades, Solar Thermal System Replacement. Potential investigations include garage heating improvements,	Study - ARUP.												

LSC Feedback on Reporting



Detailed Program Status

AEP Status September 30, 2013



Spotlight – Access & Opportunity

Northern Essex Community College

Project:

Site: Northern Essex Community College

Contractor: Enterprise Equipment Company

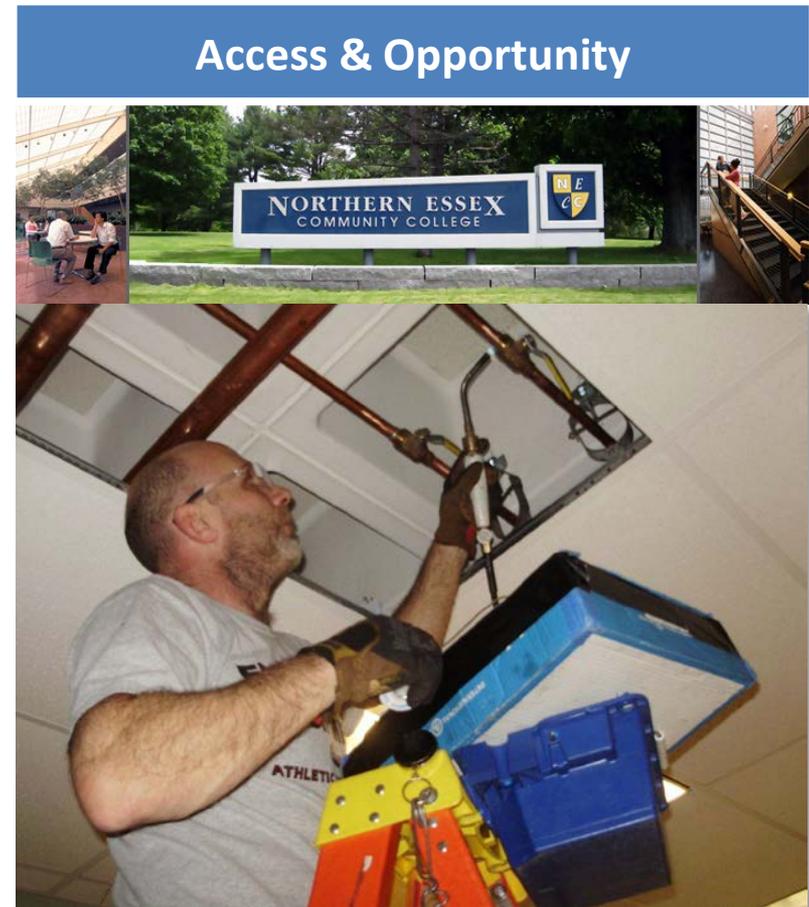
Constr. Cost: \$5.9 million

Annual savings: \$350,000

Access & Opportunity:

Objective of AEP is to reach out to new vendors and contractors to solicit participation on energy projects

- 12% participation by M/WBEs
- 4 M/WBE sub-contractors
- 3 firms worked with Enterprise on prior DCAMM projects (Spindle City Insulation, Carl Louis and Company, and W.S. Anderson, Inc.)
- Maria Fallon Electrical Services
 - New to both DCAMM and Enterprise.
 - Acquired SDO Certification in past year
 - 1st time as WBE on DCAMM project



The Northern Essex Community College project was the first large comprehensive energy project that Enterprise has done for DCAMM.



Hank Corinha

Vice President - Construction

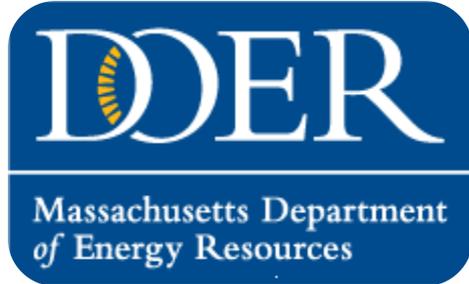
- Joined Enterprise in 1990
- Been in the mechanical business since 1971
- Initial experience was in the engineering and design field
- Responsible for of all construction and support to clients

Today's Discussion

- Company Overview
- NECC Energy Project
- M/WBE Best Practices
 - M/WBE's on projects
 - Maria Fallon Electrical Service
 - Performance on project

DOER Update

Creating A Cleaner Energy Future For the Commonwealth



Massachusetts

Dept. of Energy Resources

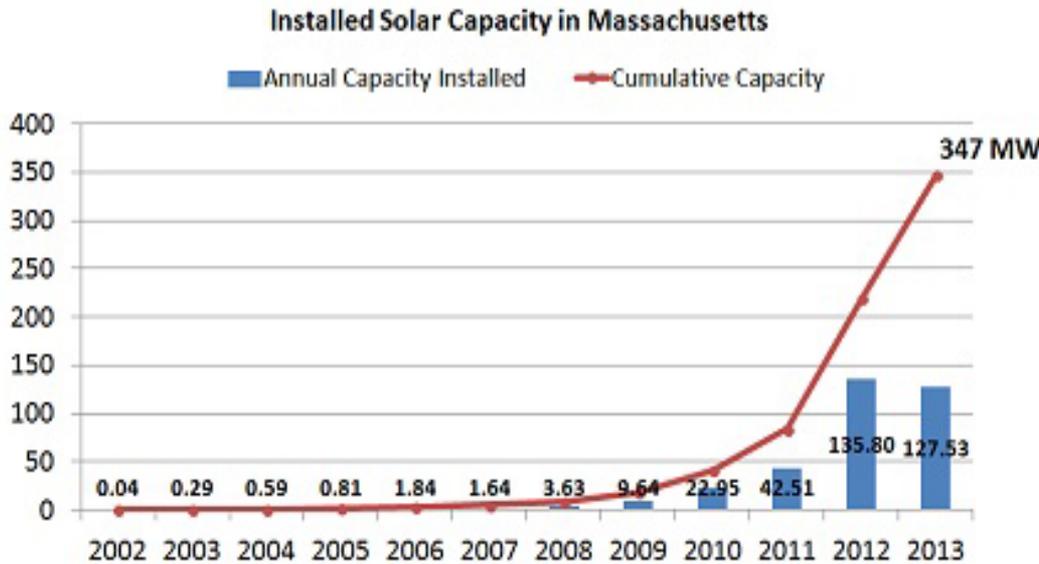
Update for
AEP LSC
November 8, 2013

Eric Friedman, Director
Leading by Example Program
Dept. of Energy Resources

Talking Points

- **Clean Energy Progress**
- **2013 LBE Award Winners**
- **LBE Grants**
- **What's Next**

Solar PV Progress

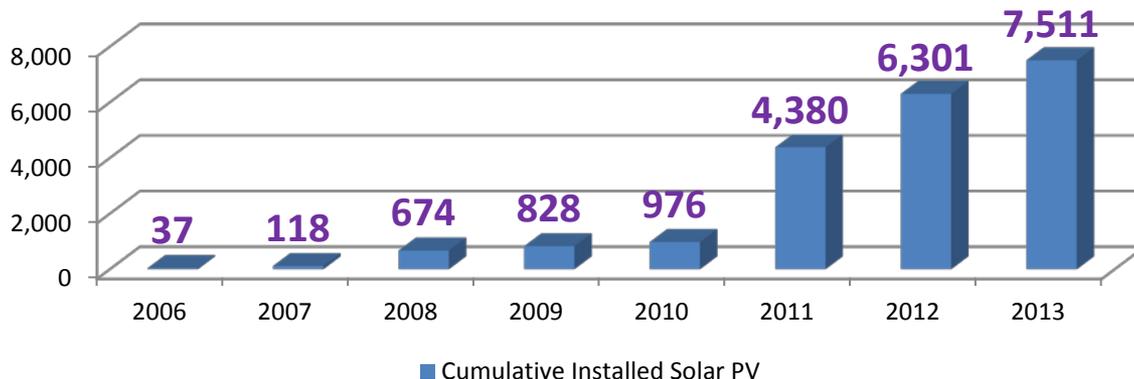


The figures above are as of November 1, 2013.

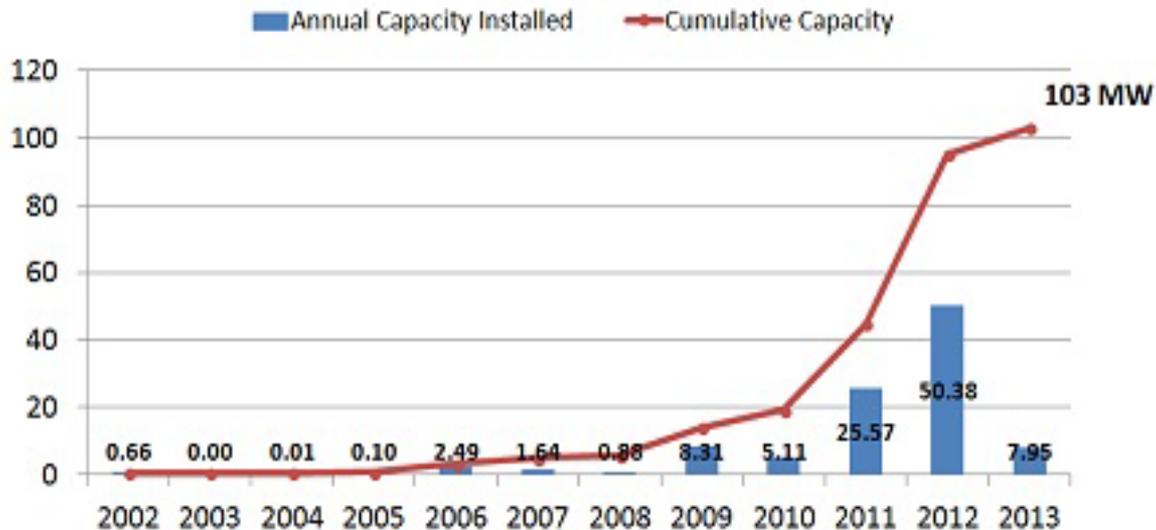
In May 2013, the Patrick Administration met its 2017 goal to install 250 MW of solar power

The Administration has set a new target of 1600 MW for 2020.

Cumulative Installed Solar PV at State Facilities

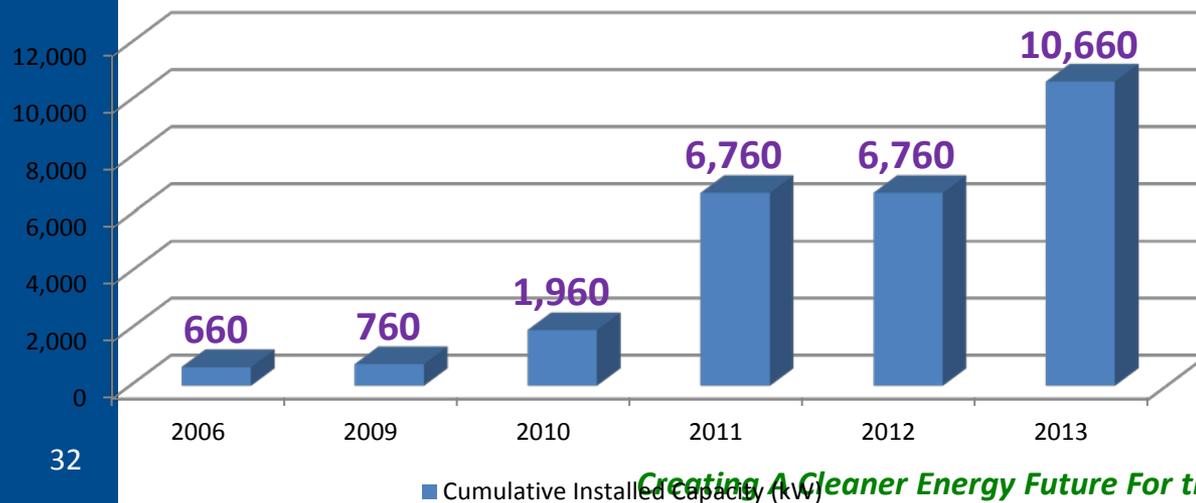


Installed Wind Capacity in Massachusetts

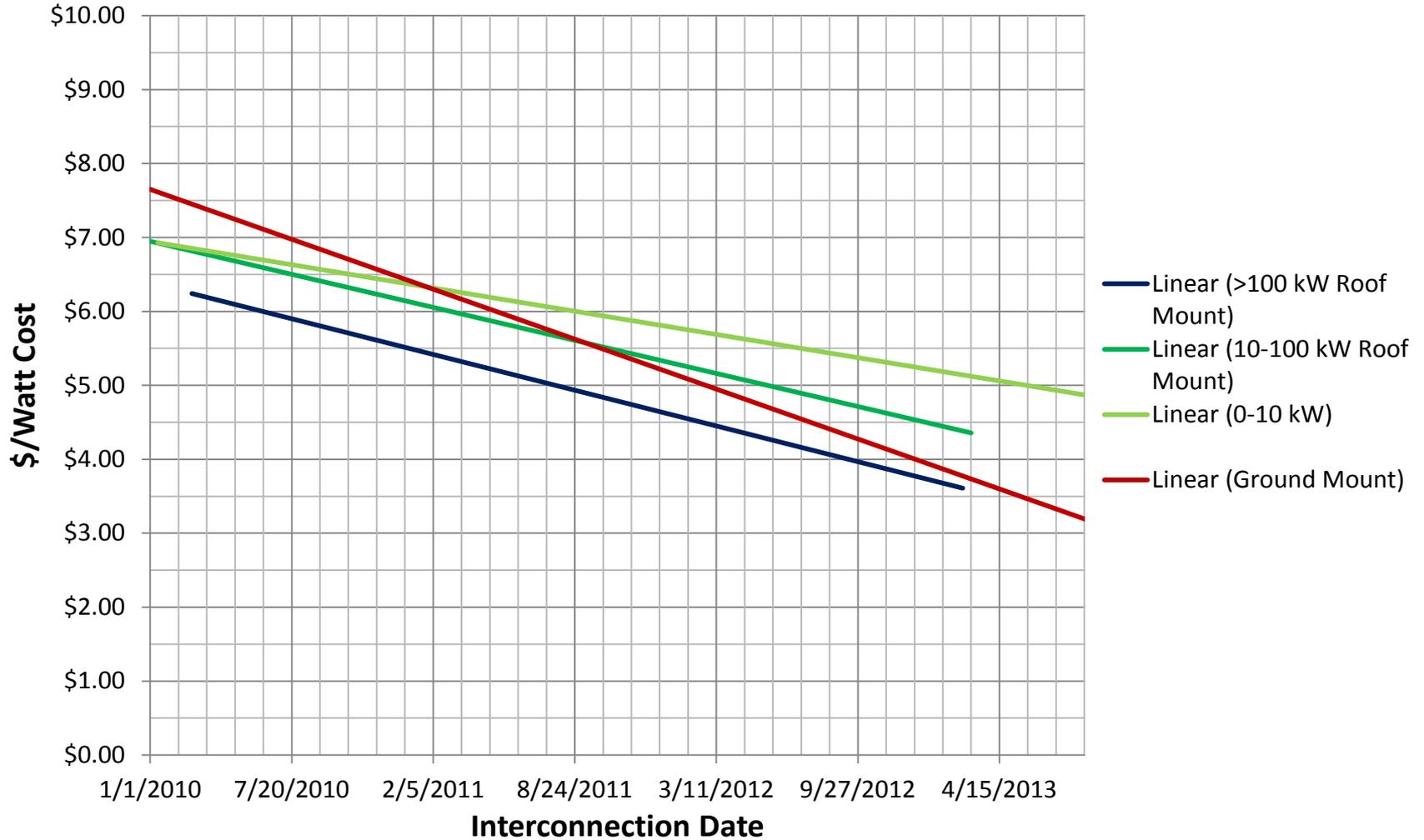


**Wind
Progress**

Cumulative Installed Wind at State Facilities

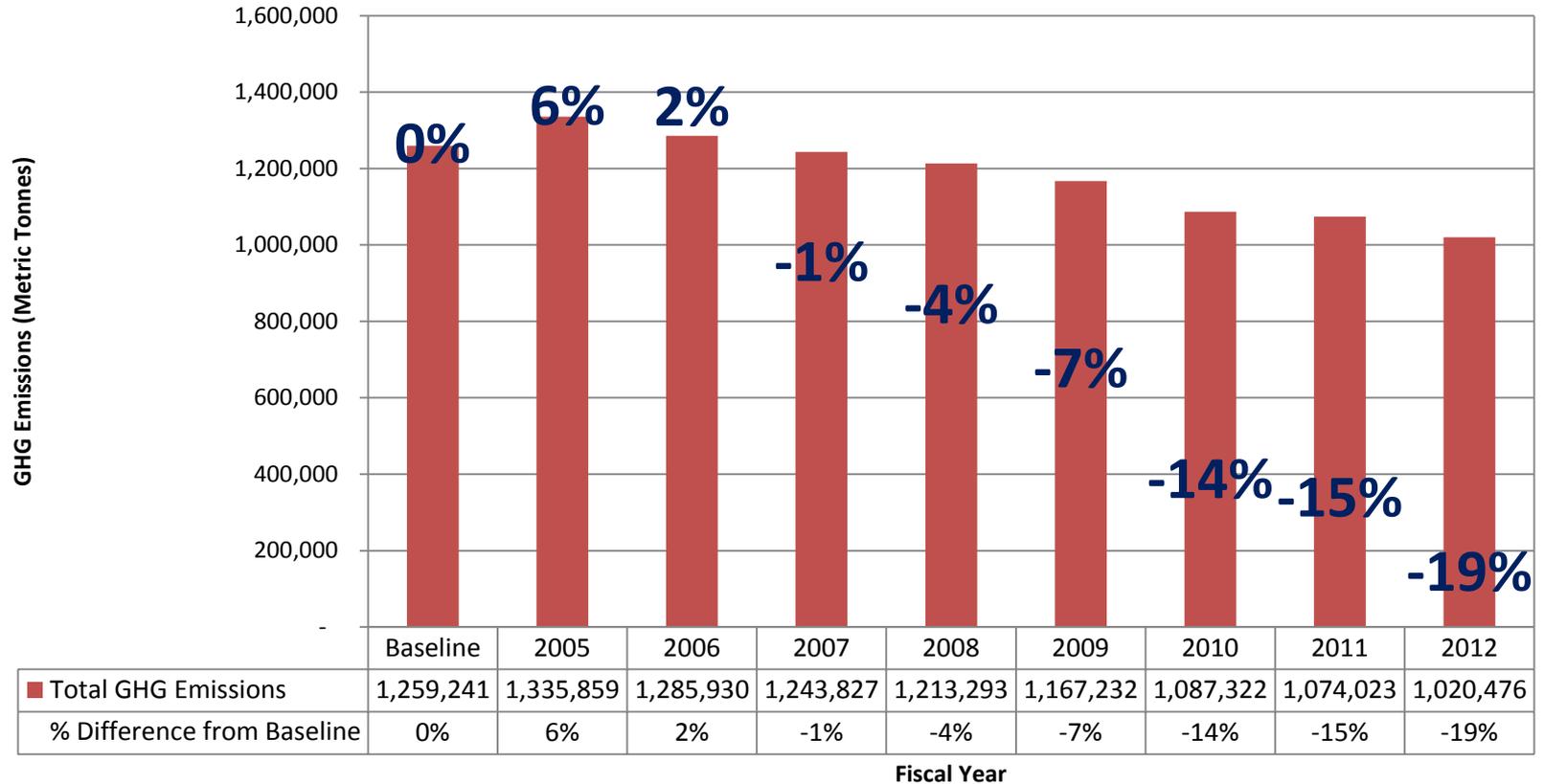


Program impact on Solar PV Costs (2010-2013)

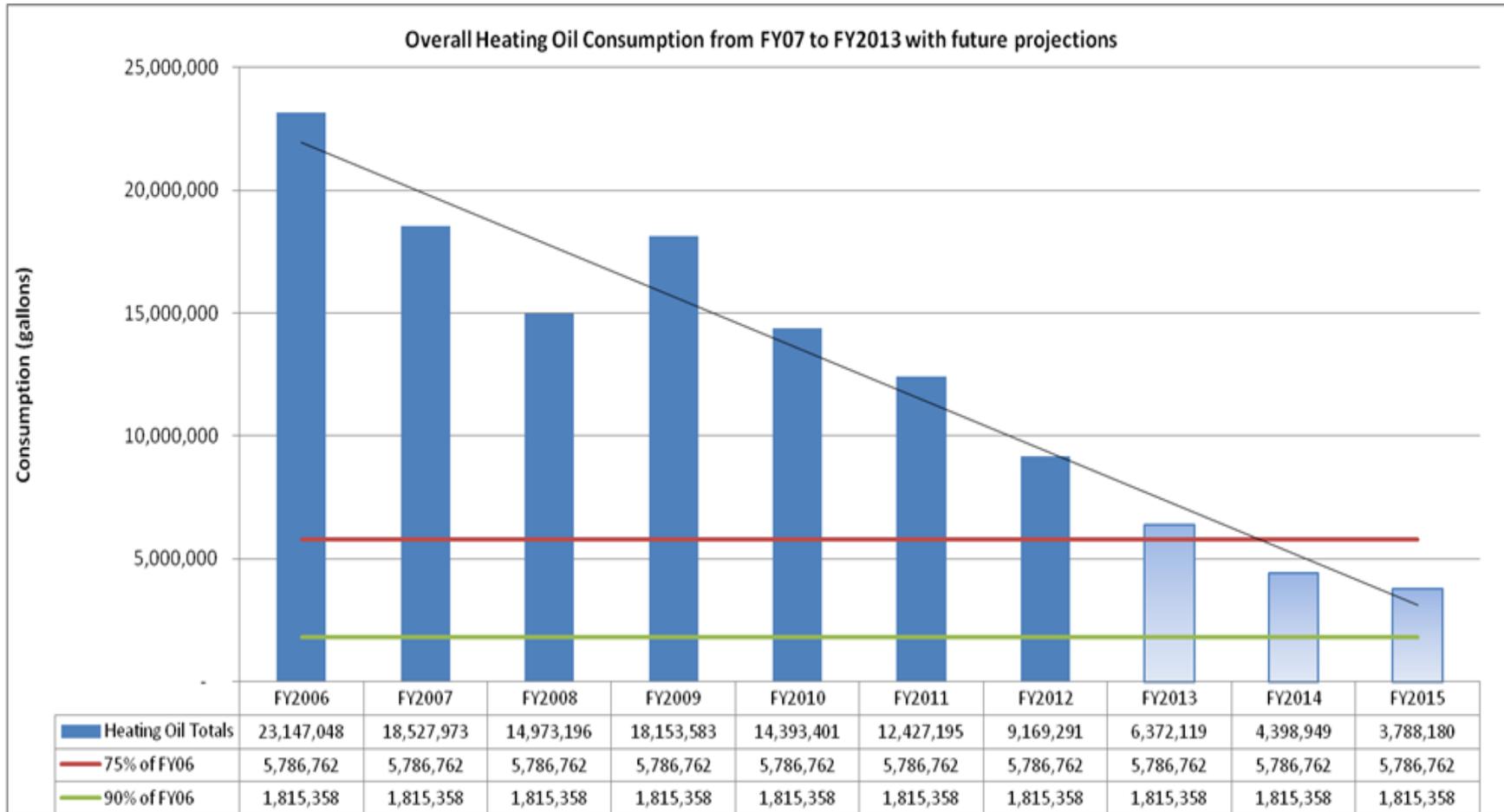


LBE Results – GHG Emissions

Overall Change in GHG Emissions from Baseline to FY2012



LBE Results – Oil Consumption



2013 Renewable Thermal Grants

- \$2.5 million for renewable thermal technologies
- Heat Pumps
Biomass/pellets, CHP, Solar Thermal
- New or existing buildings
- Studies and Implementation
- Apply by December for studies, March for projects



Upcoming Solar PV Carport Grants

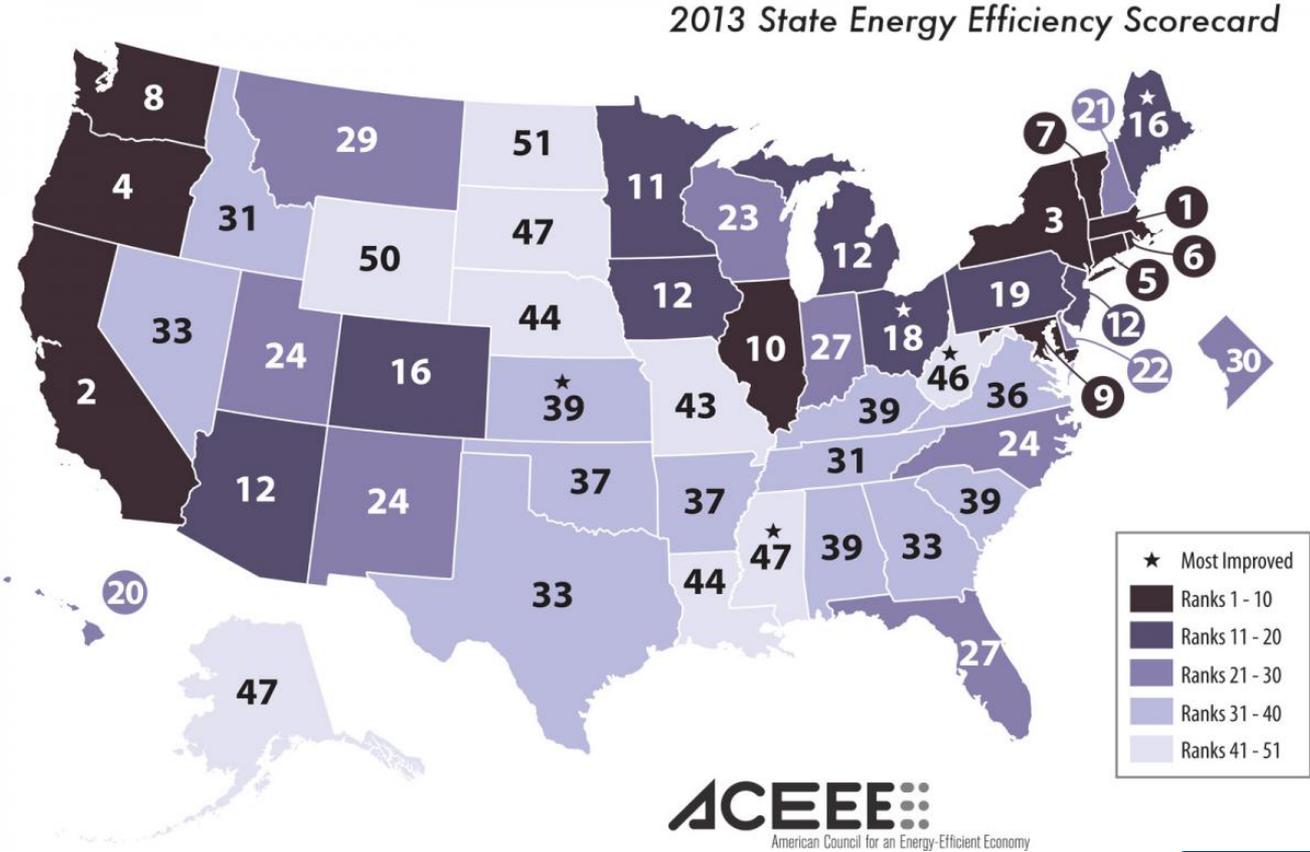


- \$1.5 million in funding to ensure cost-effectiveness and provide other benefits (e.g. charging stations)
- Support 3rd party ownership

What's Next For LBE?

- SREC II Program
- Renewable Thermal Technologies
- Organics Waste Ban starting July 1, 2014.
- Large Scale Solar PV Carports
- Electric Vehicles and Charging Stations
- Various Guidance documents
- Get good contacts at all agencies

For 3rd year in a row, Massachusetts was ranked # 1 in the country for Energy Efficiency!



Questions and Answers

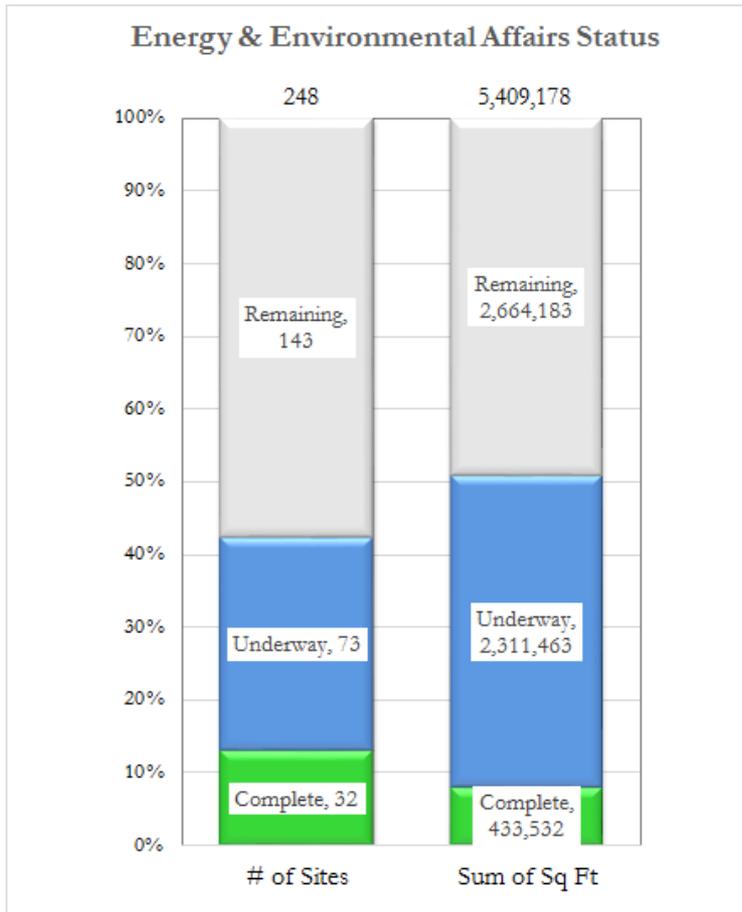
Thank you!

We greatly appreciate your time, guidance & feedback.

Next Meeting is **February 14**, 2014

Back-up

Energy and Environmental Affairs



Estimated Financials

Project Costs: \$10.1 million

Annual Energy Savings: \$1.1 million

Highlights

DCR manages 222 of the 248 sites.

Substantially Complete:

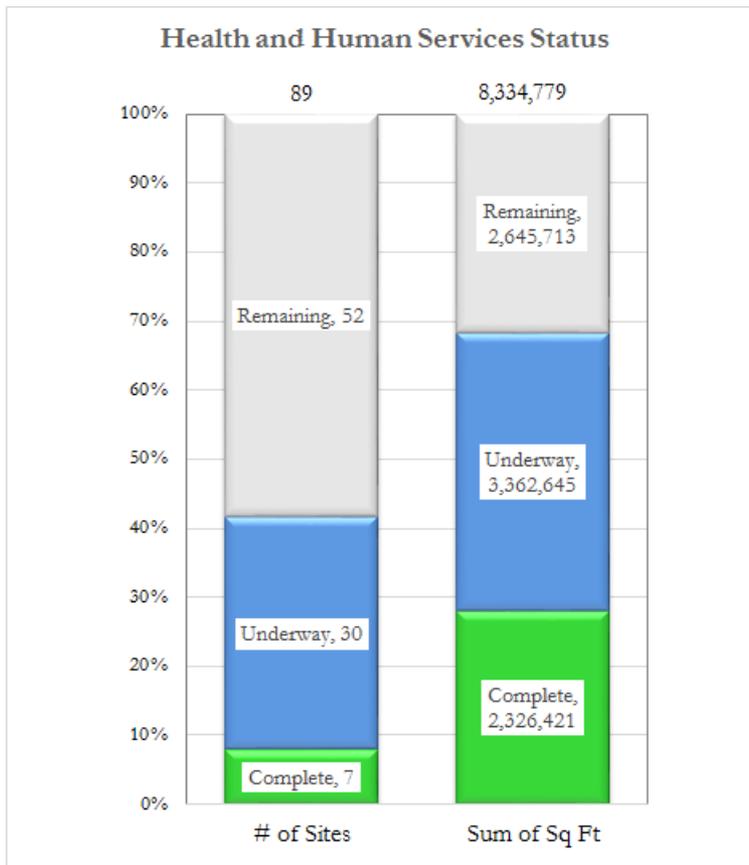
- DOER retrofitted 5 DCR rinks with ARRA funding.
- DCR managed retrofit of 5 sites based on AEP audits.

Underway Sites:

- UV bundle of 21 DCR sites issued to SourceOne.
- Georges Island DCR site is TZNE pilot.
- 51 sites underway audited by DCAMM facility advisors in Q3 2012.

Remaining Sites:

- 17 UV bundles comprising of 143 sites.



Estimated Financials

Project Costs: \$48.8 million

Annual Energy Savings: \$3.0 million

Highlights

Underway Sites:

3 UV bundles issued

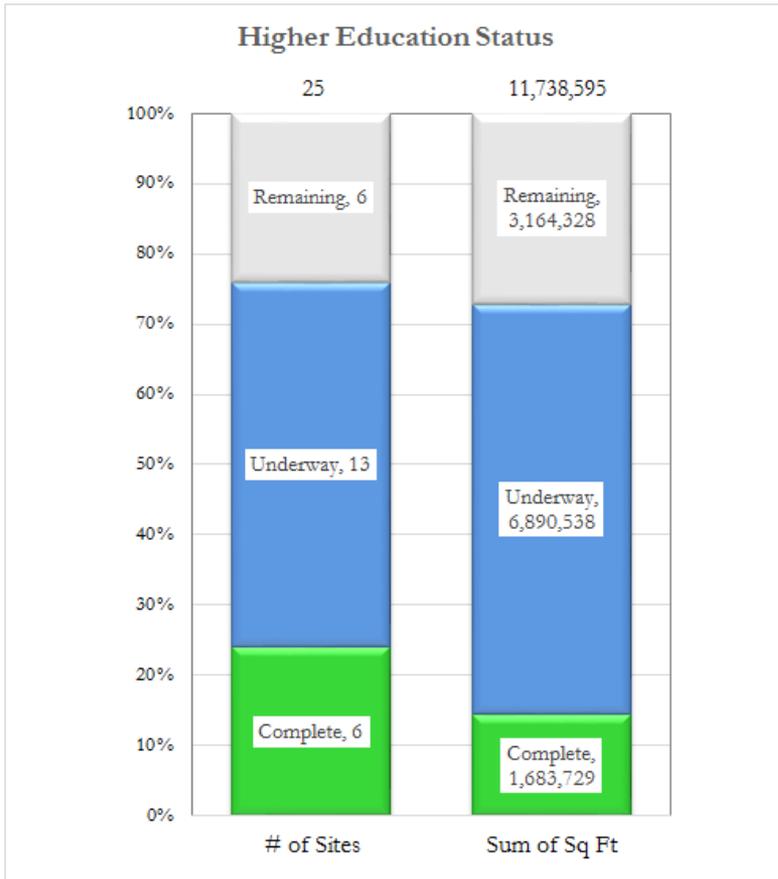
- Horizon has initiated 8 sites.
- Paquette completed a final audit of Gandara Mental Health Center.
- Energy Conservation has visited 4 sites.

In Q1 2013, the DCAMM consultant CLEARresults submitted a draft retro-commissioning audit for the two facilities at DYS Westborough.

Remaining Sites:

In Q3 2013, the Soldiers' Home in Chelsea was selected for a TZNE pilot.

Higher Education



Estimated Financials

Project Costs: \$100.4 million

Annual Energy Savings: \$6.6 million

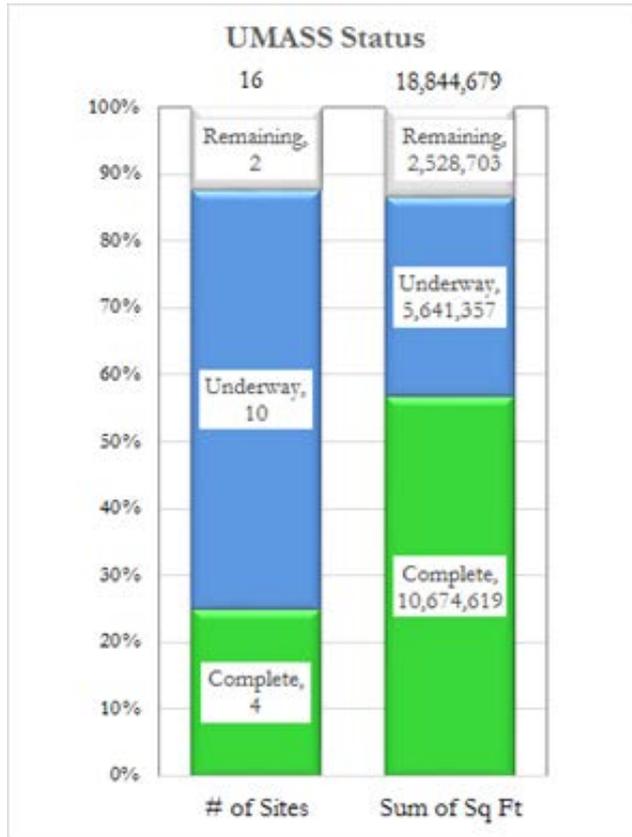
Highlights

Underway Sites:

- Funds transferred to Mount Wachusett Community College for a solar thermal project.
- DCAMM signed phase 1 of a comprehensive project contract for \$2 million with Constellation New Energy for Salem State University.
- DCAMM initiated comprehensive projects and TZNE pilots at 5 sites.

Remaining Sites:

- 4 sites are Cape Cod Community College, Berkshire Community College, Mass College of Art and Mass Bay Community College.



Highlights

Completed Sites

- AEP work at UMass Amherst characterized as complete but work will continue.

Underway Sites:

- Projects were initiated at 6 sites.

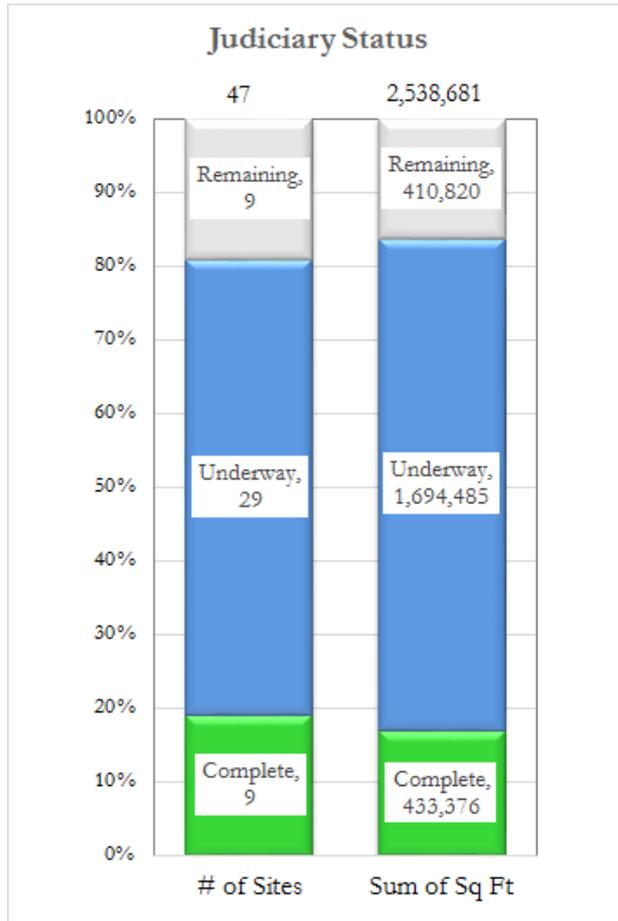
Remaining Sites:

- UMass Boston is the remaining campus to be initiated.

Estimated Financials

Project Costs: \$121.6 million

Annual Energy Savings: \$10.9 million



Estimated Financials

Project Costs: \$10.9 million

Annual Energy Savings: \$0.8 million

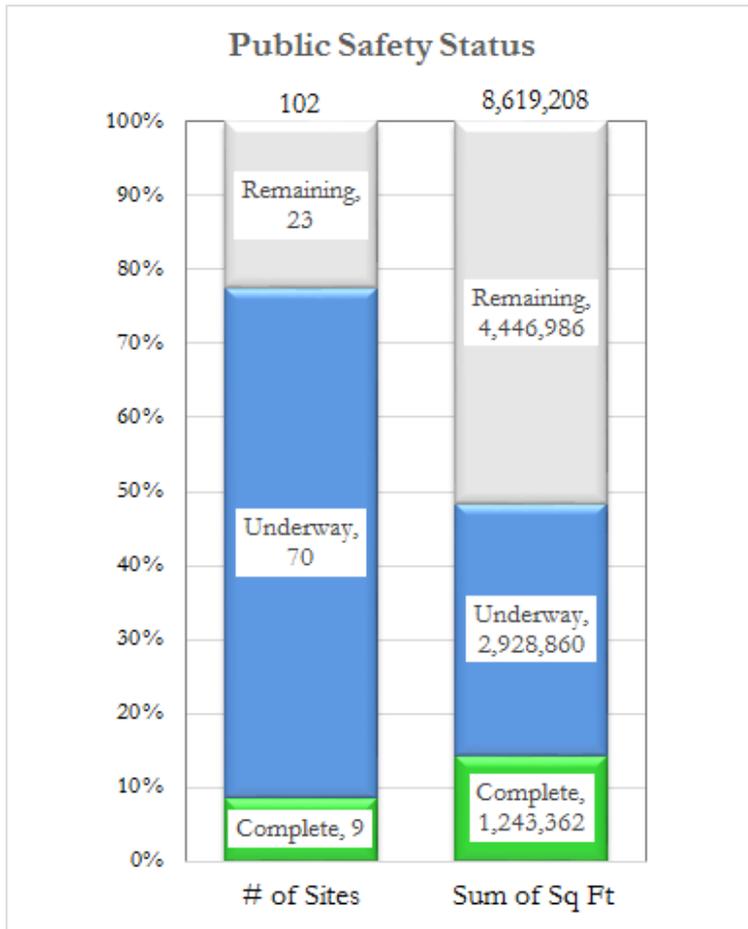
Highlights

Underway Sites:

- Construction in full swing at 9 courts in western MA through BG Mechanical Contractors.
- 3 comprehensive projects initiated
 - Lawrence Superior Court
 - Lowell District Court
 - Lowell Superior Probate and Family Court

Remaining Sites:

- UV bundle with 5 judiciary sites will be initiated in 2014.



Highlights

Remaining Sites:

- UV bundle with 5 judiciary sites will be initiated in 2014.

Underway Sites:

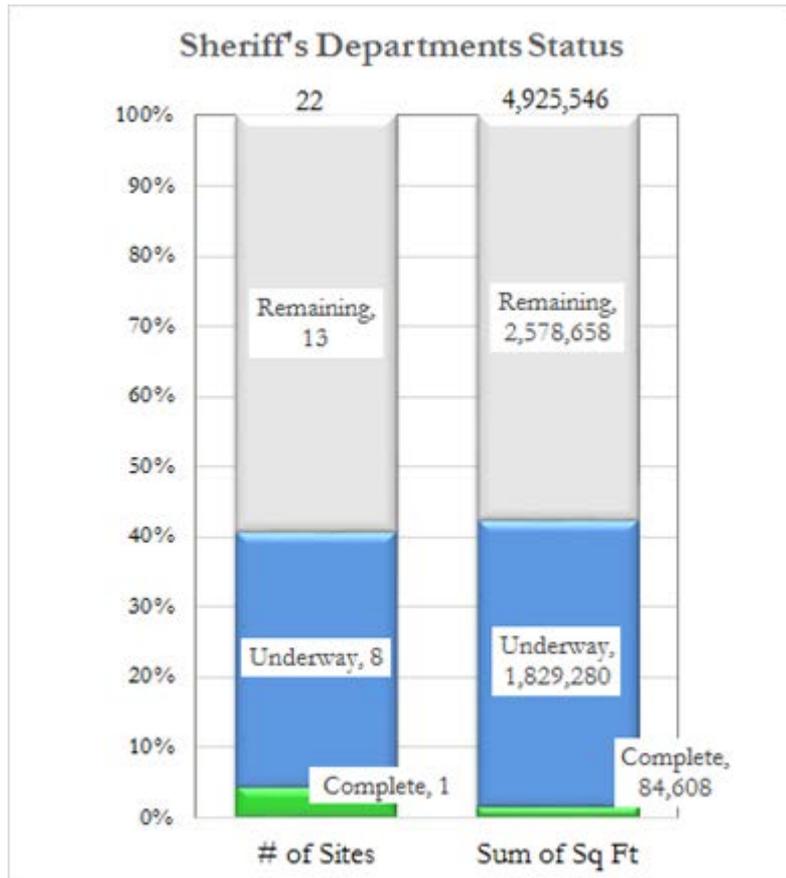
- DCAMM executed a contract for retrofits at 26 state police barracks with Constellation New Energy.
- 35 sites underway through UV contracts:
 - 4 bundles of Military sites
 - 1 bundle of Public Safety sites

Estimated Financials

Project Costs: \$55.1 million

Annual Energy Savings: \$4.7 million

Sheriff's Departments



Estimated Financials

Project Costs: \$53.5 million

Annual Energy Savings: \$4.7 million

Highlights

Remaining Sites:

- 5 sites will be initiated in Q4 2013.
- 1 UV bundle of 7 sites will be initiated with Groom in Q4 2013.

Underway Sites:

- Projects were initiated at two Bristol Sheriff's Department sites (Dartmouth and New Bedford).
- A wind turbine study was completed at Worcester site.
- TZNE pilots underway at Berkshire and both Essex sites (Lawrence and Middleton).