

Welcome

CEO Brian Devin, Mass Hospital School
Commissioner Cornelison, DCAMM
Acting Commissioner Lusardi, DOER

AEP Updates

Hope Davis, DCAMM

LBE Updates

Eric Friedman, DOER

Celebration of Accomplishments: *A panel of state facilities on sustainability accomplishments, challenges and lessons learned*

Facilitated by K. Bernier

Trivia Challenge

Stephen White, DCAMM and Trey Gowdy, DOER

Going Forward

Jenna Ide, DCAMM and Eric Friedman, DOER

Welcome

DCAMM

Commissioner

Carole Cornelison



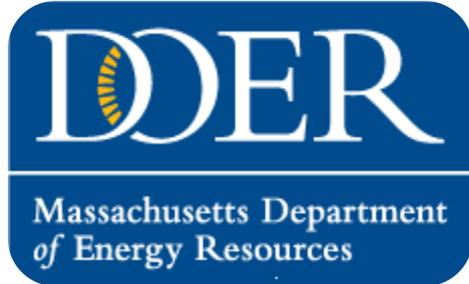
Director Joseph Hogan, Department of Youth Services

- Worked as instrumental leader on retrofits of 14 DYS sites in AEP.
- Supported the estimated investment of \$9.3 million in the DYS sites to save \$632,000 annually.
- Coordinated between deferred maintenance, design and construction of additions, and energy projects.
- Helped manage three different types of energy project procurement methods (utility vendor, comprehensive and retro commissioning)



The \$3.7 million retrofit at the DYS' Central Youth Service Center in Westborough includes replacement of the outdated single pane steel frame windows in the Sharp Building.

Thank you for your dedicated efforts!



Department of Energy Resources Updates

**Acting Commissioner,
Meg Lusardi**

November 14, 2014

Patrick Administration Key Initiatives

- Joined Regional Greenhouse Gas Initiative
- Created Leading by Example Program – EO484
- Signed Green Communities Act and Global Warming Solutions Act
- Mass Save[®] efficiency programs most robust in country
- Opened nation's first large wind blade test facility
- Launched Accelerated Energy Program



Clean Energy Industry

Figure 1: Massachusetts Clean Energy Employment Growth 2010-2015 (Projected)



- More than 88,000 people work in the clean energy sector
- 2.4% of Massachusetts workforce
- Double-digit growth in employment growth 3 years in a row
- 5,985 clean energy businesses

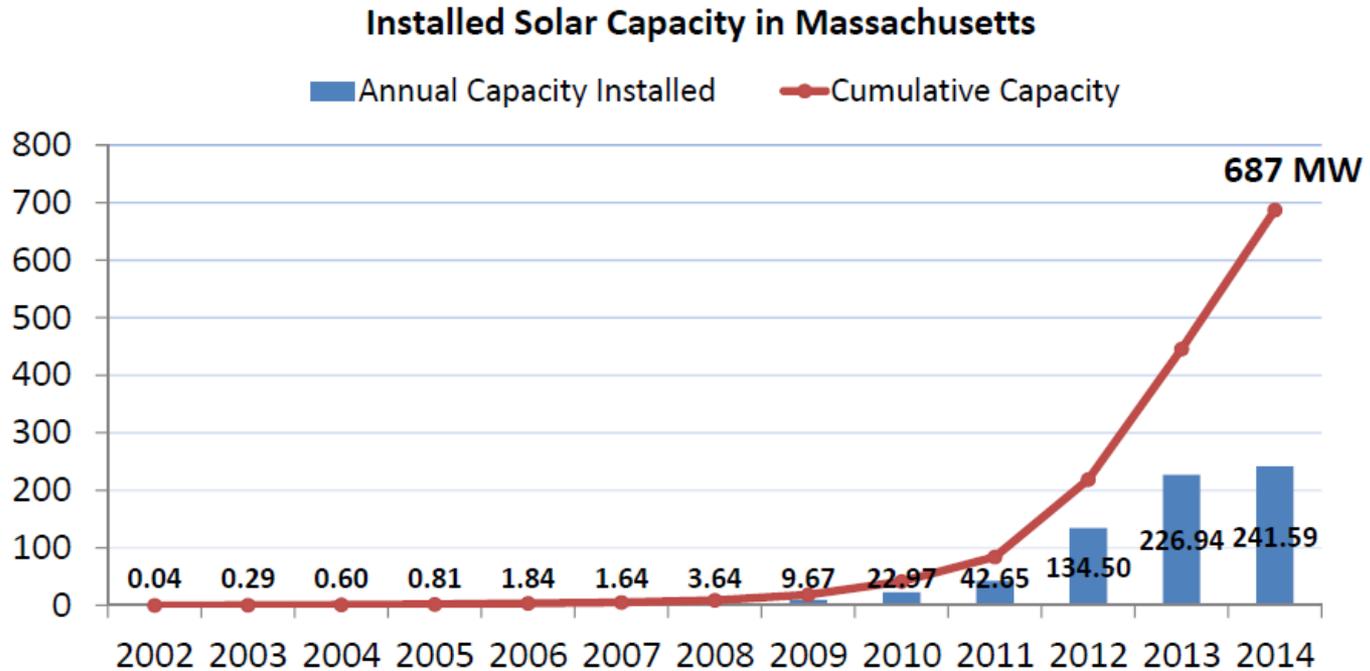
Graph:
(MassCEC, 2014)



Massachusetts Department
of Energy Resources

Creating A Cleaner Energy Future For the Commonwealth

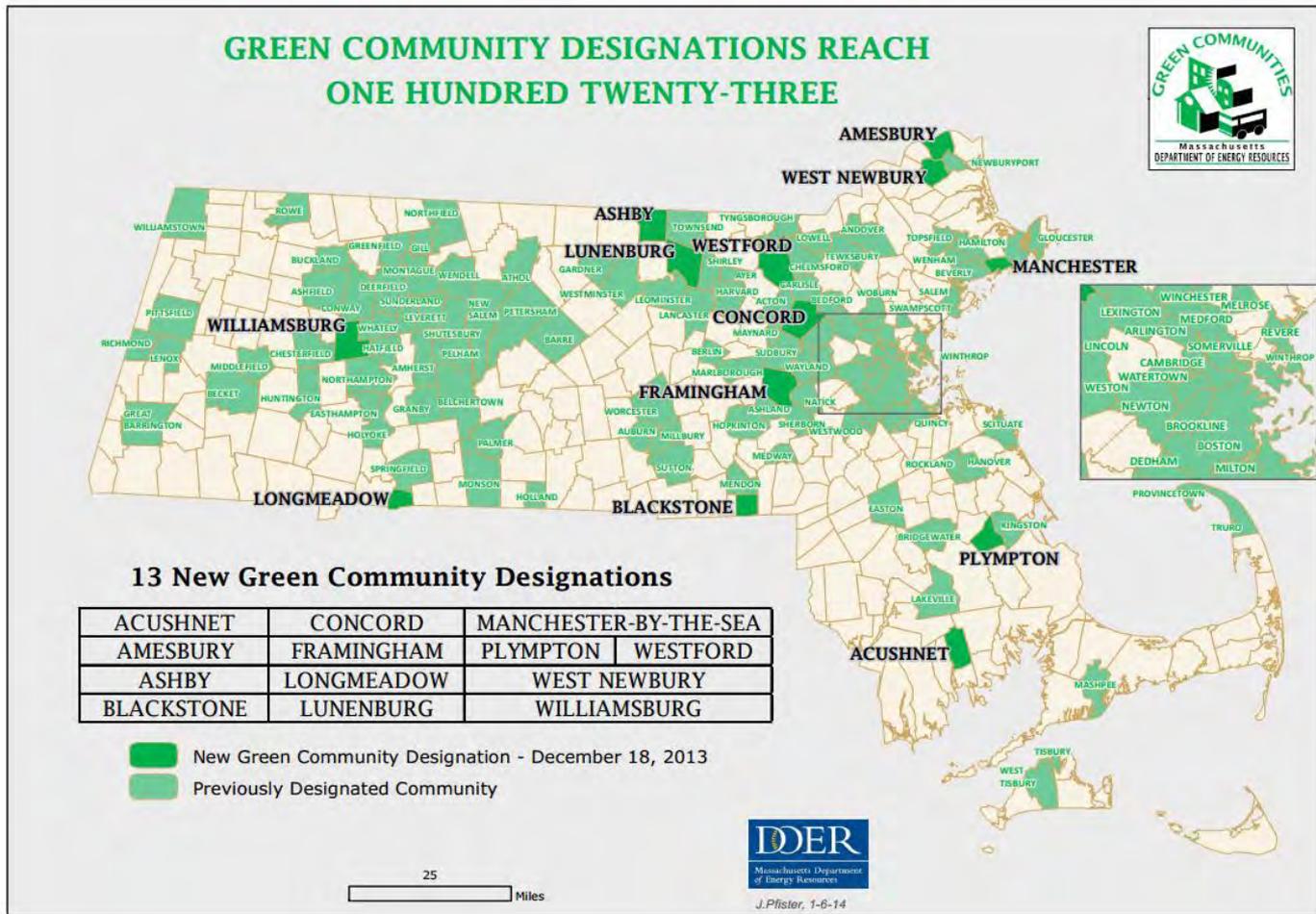
Solar Growth



- Ranked 5th in the nation for total solar power (MA is 14th in population size and 44th in land area)
- Enough electricity to power 94,100 homes



Green Communities



Massachusetts Department of Energy Resources

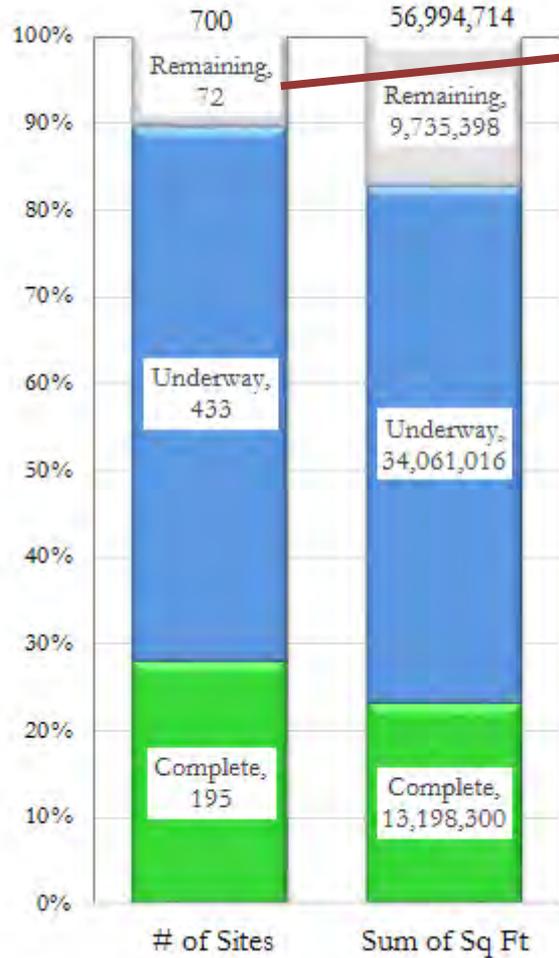
Creating A Cleaner Energy Future For the Commonwealth

Looking Ahead

- Three Year energy efficiency plans (2016-2018)
- Renewable thermal included in Alternative Portfolio Standard
- Managed solar growth
- Continued support to state agencies and municipalities

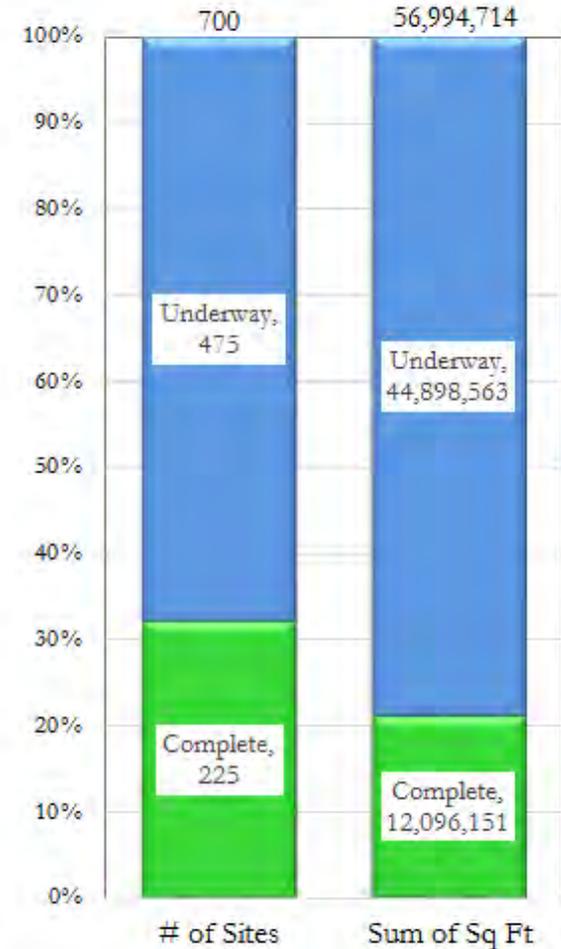
AEP Updates

Sep 30, 2014 (Actual)



**Oct 31, 2014
Only 24 sites
remaining!**

Dec 31, 2014 (Planned)



Received \$312 million AEP funding through Environmental Bond Bills

Implemented TZNE Retrofits at Pilot Sites, including the initiation of the project at Cape Cod Community College

Launched CoFFEE Green Revolving Fund

Held Gardner Press Event

Sent 11 AEP Certification posters to Courts

Started Planning for Work after AEP (Phase II)

As of Q3 2014

Invested \$74 million

Spent \$50 million

Saved \$6 million

*Trial Court's Director
of Facility
Management John
Bello during his
presentation at the
press event at the
Gardner District
Court.*



AEP Accomplishments and Successes

Planned and Structured the Work

Identified Procurement Priorities



Expanded Pool of Consulting Firms

Impl Group	Service Provider	Number of Sites	DELIVERY OF SERVICES										Legend	
			Audits	Water Survey	RCx	30% Design Services	65% Design Services	100% Design Services	Const. Mgmt	Const. Utilm Prog				
SF ¹	Utilities	364	Utility Prog	HD/FA/Unl							Utility Prog	Utility Prog	Utility Prog	Adequate
	Municipal	74	HD/FA	HD/FA							HD			Sufficient
WEA ²	Utilities	140	HD/FA/Unl	HD/FA/Unl		HD/Unl	HD/Unl	HD/Unl						Missing
	Municipal	23	HD/FA	HD/FA		HD	HD	HD/Unl						Not Applicable
RCx		14		HD/FA	HD/FA	HD	HD	HD	HD					
Comp ³		48	HD	HD		HD	HD	HD	HD					
New Retiree ⁴		16	HD	HD/FA										

¹Total SF Sites = 438. 8 SF Sites are served by both a municipal and utility electric company. Each of these sites has been assigned to a single provider.

²Total WEA Sites = 163. 2 WEA Sites are served by both a municipal and utility electric company. Each of these sites has been assigned to a single provider.

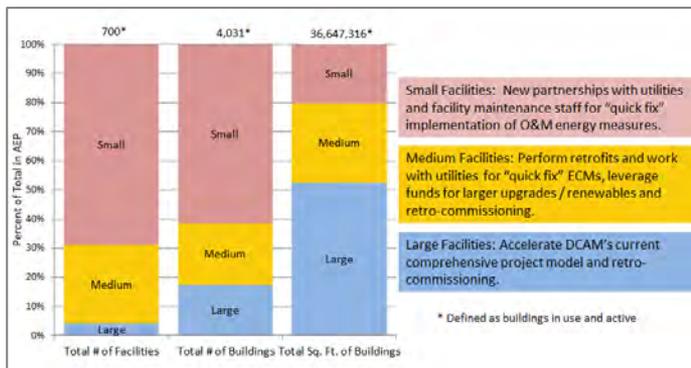
³Of the 48 Comprehensive Sites, 33 are in progress.

⁴Of the 16 New Retiree Sites, 2 are in progress and 1 is complete.

Established AEP Leadership Steering Committee, Working Groups and Implementation Committee



Structured Program to Retrofit 700 Sites



Established Program Controls

Energy Audit Data Collection Templates

Site - Audit Template

Audit Date: 6/19/2012
 CAMS Site Code: WLDN2
 Site: WALDEN FOND STATE RESERVATION
 Sector: Energy & Environmental Affairs
 Agency: DEPARTMENT OF CONSERVATION AND RECREATION
 Site Address: Concord, MA
 Site ZIP: 03301
 Prin Exec. UD: Municipal
 Project Number: EOP2012 ADJ
 Date Source Audit: 4/3/2012

Site Contact - Name: John Fair
 Site Contact - Title: NE Regional Supervisor
 Site Contact - #: 978-369-2354
 Site Contact - Email: jfair@dcra.state.ma.us

Auditor Prime: E&D
 Auditor Sub: E&D
 Auditor - Name: David Ward
 Auditor - Title: Principal Auditor
 Auditor - #: 508-450-2144
 HD Contact - Email: davidward@gmail.com

Building Codes	Building Name	Sq Ft	Audited	In Use	Exct	Loss	Water
Totals	14	9,404	13	13	7	2	2
4300DM001	GALLERY SHED	150	Y	Y	N	N	N
4300DM002	GARAGE	300	Y	Y	N	N	N
4300DM003	NATURE CENTER SHED	150	Y	Y	N	N	N
4300DM030	BARN	630	Y	Y	Y	N	N

Site - Audit Results

Audit Date: 6/19/2012
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Energy Conservation Measure	Estimated Install Cost (\$)	Utility Incentive (\$)	Annual Savings		Simple Payback (yr)
			Energy (MMBtu)	Water (Gallons)	
Totals	\$ 22,911	\$ -	139	372	\$ 7,345 8.1

Building codes checklist

DCM#	Potential Existing Conditions	Potential ECMs
Lighting	Incandescent, older fluorescent lights with manual controls	CFLs, new fluorescent technologies, LEDs, sensors, CFLs, new fluorescent technologies, LEDs
1.0	Bulbs, Fixtures, Ballasts, Exit Signs	Incandescent, older fluorescent lights, CFLs, VSDs, ECMs, Sensors, Timers, etc.
2.0	Controls	Older Controls, manual switches, inoperable controls
3.0	Motors	Standard efficiency motors
12.0	Windows	Single pane, old, cracked, inoperable
12.0	Doors	Hollow or cracked, poor alignment, broken, does not fully close, inoperable
12.0	Overhead door	Uninsulated, no seals, poor alignment
10.0	Air Sealing	Drafts around windows, doors, through walls, joints, corners
4.0	Energy Management System	Inoperable or no EMS
5.0	Toilets & Urinals	Standard, large volume flush toilets and urinals
5.0	Faucets	Older, standard faucets with no flow restrictors
5.0	Showers	Standard, older showerheads
5.0	Commercial Kitchen Pre-rinse Spray Valves	Standard, >2 gpm pre-rinse spray valves
4.0	Thermostats	Manual or older mechanical thermostats
4.0	Boiler Reset Control	Manual or older mechanical thermostats
5.0	Water Heater	Stand alone tank type or "everhot" tank
17.0	Heating Systems	Standard efficiency
14.0	Boilers	Standard efficiency forced hot water or steam
17.0	Furnaces	Standard efficiency
17.0	Unit Heaters	Standard efficiency or steam
17.0	Other	Standard efficiency
17.0	Cooling Systems	Standard efficiency rooftop unit
17.0	Rooftop	High SEER rooftop unit
17.0	Window	Standard efficiency or older unit
10.0	Pipe Insulation	Water heater
10.0	Heating distribution	Broken or no insulation on hot water or steam distribution pipes

Common Reportable Milestones and Durations for All Types of Procurements

Procurement Category	Energy Storage Bank				Water Conservation				Energy Efficiency				Energy Storage			
	Start	End	Duration	Reporting	Start	End	Duration	Reporting	Start	End	Duration	Reporting	Start	End	Duration	Reporting
Photovoltaic	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly
Energy Storage	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly
Water Conservation	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly
Energy Efficiency	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly
Energy Storage	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly	12/1/12	12/31/12	12 Months	Quarterly

Monthly Project Controls Report (Cost and Schedule)

Program Risk Register & Mitigation Plans

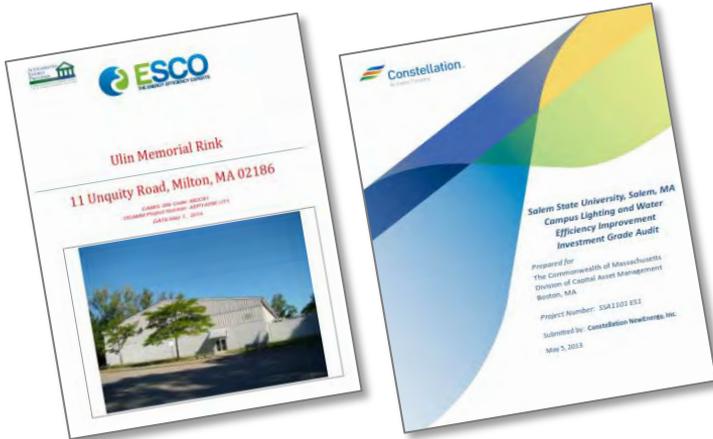
Risk Identifier	Risk	Impact Description	Risk Score (1=Low 6=High)	Timeline	Risk Response	Risk Owner (Working Group)	Changes from Last Quarter
IP-R3	Additional sites requested to be included in AEP by Agencies may not receive funding.	Schedule and funding impacts to program.	2	Near term	Continue to coordinate with Facility Managers and Agencies to finalize AEP scope. Prioritize AEP sites for implementation.	Procurement & Performance Mgmt	No Change
IP-R4	Ability to achieve an average of 25% savings in energy costs across AEP sites		6		Develop new procurement approach for "deep energy retrofit" or "forward net zero energy".		New risk added
PM-R1	All requested funding not in place for future projects (bond bills, utility rebates, etc.)	Not enough funds to complete program; program delay.	4	Q3 2013	Prioritize projects with funding in place; Governor signed bond bills.	Procurement & Performance Mgmt	Changed Risk Score from 3 to 4

Reporting Milestone	Site Selection	Reporting Months												Total Milestones				
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec					
Performance	0	40	67	241	251	556	836	275										
Energy S&B	0	40	67	241	251	398	513	785	26.1									
Reco Ca	0	40	67	241	251	288	340	74										
Utility vendor	0	40	67	177	127	134	75	6.5										
Net Rev	0	40	67	276			7.0											

For multiple milestones in the same period, latest milestone is shown.

Established Quality Management Plan

Standardized Scopes of Work and Model Energy Audit Reports



Quality Checks and Vendor Evaluations

	Total Sites	Technical Report Review		Site Evaluation		Construction Evaluation	
		QC Goal (10%)	Tech Reviews Completed	QC Goal (5%)	Site Visits Completed	QC Goal (5%)	Construction Inspections Completed
Utility Vendor	469	47	14	23	8	23	1
RCx	31	3	1	2	1	2	0
Comprehensive	99	10	0	5	0	5	0
New Review	20	2	0	1	0	1	0
Other / Evaluated	81	N/A					
Total	700						

Utility Vendor QA/QC Evaluation Status							
Vendor	Project Number	Site Code	Site Name	Technical Review	Site Inspection	Construction	Completion
Rise	AEP1301E UT1	TRC21	Fitchburg District Court	21-Feb-13	23-Apr-13		
Nxegen	AEP1302E UT1	MIL05	Braintree Armory	10-Apr-13	18-Apr-13		
Prism	AEP1303E UT1	MIL39	Northbridge Armory	19-Jun-13			
N.E.S.	AEP1304E UT1	DPW42	Chelmsford Depot	25-Jul-13			
Horizon	AEP1305E UT1	DMH33	Wrentham Housing				
AECOM	AEP1306E UT1	DPW96	MHD Medford Facility				
Source1	AEP1307E UT1	BRAD2	Bradley Palmer State Park	19-Aug-13			
Guardian	AEP1308E UT1	FWE23	Lobster Hatchery				
ECI	AEP1309E UT1	MIL56	Taunton Armory	26-Aug-13			
Groom	AEP1310E UT1	TRC27	Haverhill District Court				
Paquette	AEP1311E UT1	DMR01	LGR Region 1 Amherst	18-Jul-13			

Construction Inspections by Quality Manager and Resident Engineer



Reached Out to Vendors and Utility Companies

Vendor Outreach Meetings

4 meetings with 243 participants



1st MOU between DCAMM and investor-owned utilities



Northeast
Utilities

nationalgrid

THE POWER OF ACTION



Unitil

Columbia Gas
of Massachusetts

A NISource Company



Six LEAN Workshops

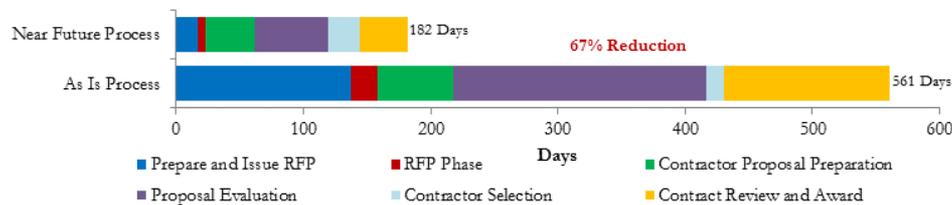
Shorten procurement duration of energy design-build and comprehensive performance contracts



LEAN Rapid Improvement Workshop (RIW)
New data management solution & procedures



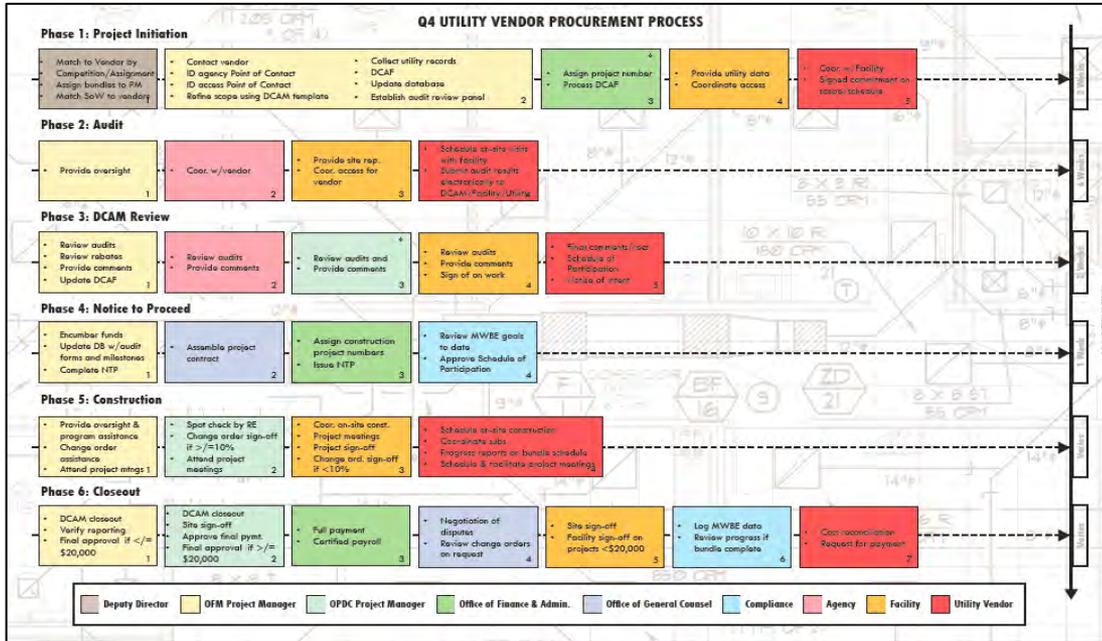
AEP Energy Design-Build Procurement Process



Three Fast Pitch
Innovation Plans
submitted

Developed Program to Retrofit Small & Occasional Use Sites

Created entirely NEW procurement process (utility vendor contracting)



NEW Utility Approved Vendors

13 Vendors

30 Contracts

448 Sites

Expanded relationships with DCR & MassDOT
To address 303 of the 448 sites



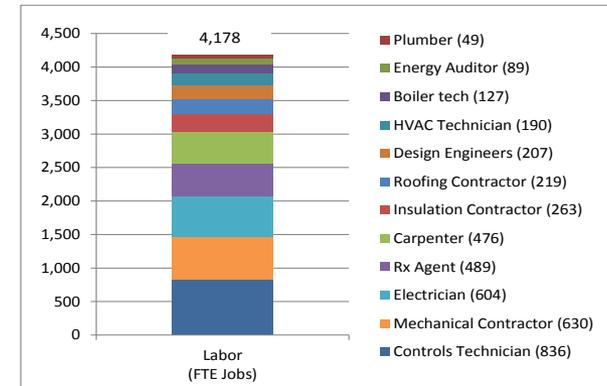
MA Highway Department (MHD) - Depots

Created (and sustained) Jobs, Access & Opportunity

Established Workforce Advisors Held 3 meetings with stakeholders



Estimated 4,000+ jobs through completion of implementation



Workforce and W/MBE Participation

Online Survey of Contractors HR practices relating to employment of women

DCAMM Study on Women in Non-Traditional Occupations

1. Does your company have any full-time or part-time employees in Massachusetts (male or female) for which the answer is "yes"?

<input type="checkbox"/> Asbestos worker	<input type="checkbox"/> Glazier
<input type="checkbox"/> Asphalt worker	<input type="checkbox"/> HVAC technician
<input type="checkbox"/> Bricklayer	<input type="checkbox"/> Insulation worker
<input type="checkbox"/> Carpenter	<input type="checkbox"/> Marble tile worker
<input type="checkbox"/> Cement finisher	<input type="checkbox"/> Mason
<input type="checkbox"/> Curbside/paver	<input type="checkbox"/> Millwright
<input type="checkbox"/> Driller	<input type="checkbox"/> Oiler
<input type="checkbox"/> Elevator constructor	<input type="checkbox"/> Piledriver
<input type="checkbox"/> Electrician	<input type="checkbox"/> Pipelayer
<input type="checkbox"/> Equipment operator	<input type="checkbox"/> Pitchworker
<input type="checkbox"/> Floor layer	<input type="checkbox"/> Plasterer

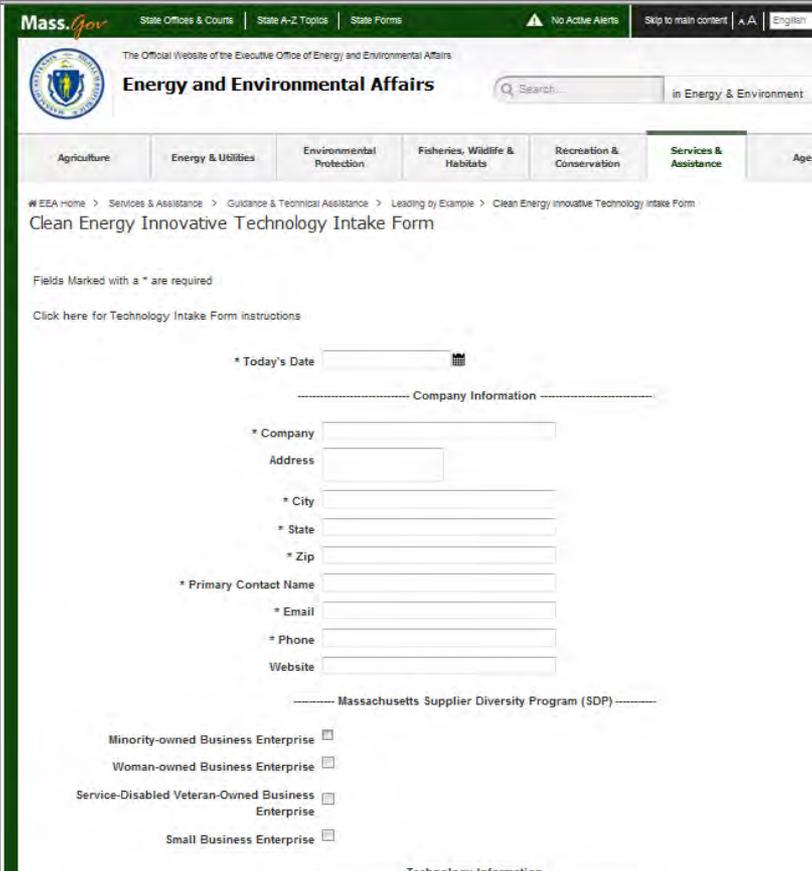


Metric	AEP Target	As of Q3 2014
Workforce (construction)		
- Minorities	15.2%	6.2%
- Women	6.9%	0.3%
W/MBE		
- Design	17.9%	12.7%
- Construction	10.4%	24.6%

Massachusetts as a First Customer Cleantech Expo



Innovative Technology Web Intake Form 37 registered companies and technologies



Mass.gov State Offices & Courts | State A-Z Topics | State Forms No Active Alerts Skip to main content | A A English

The Official Website of the Executive Office of Energy and Environmental Affairs
Energy and Environmental Affairs Search... in Energy & Environment

Agriculture Energy & Utilities Environmental Protection Fisheries, Wildlife & Habitats Recreation & Conservation Services & Assistance

EEA Home > Services & Assistance > Guidance & Technical Assistance > Leading by Example > Clean Energy Innovative Technology Intake Form

Clean Energy Innovative Technology Intake Form

Fields Marked with a * are required

Click here for Technology Intake Form instructions

* Today's Date

----- Company Information -----

* Company
Address
* City
* State
* Zip

* Primary Contact Name
* Email
* Phone
Website

----- Massachusetts Supplier Diversity Program (SDP) -----

Minority-owned Business Enterprise
Woman-owned Business Enterprise
Service-Disabled Veteran-Owned Business Enterprise
Small Business Enterprise

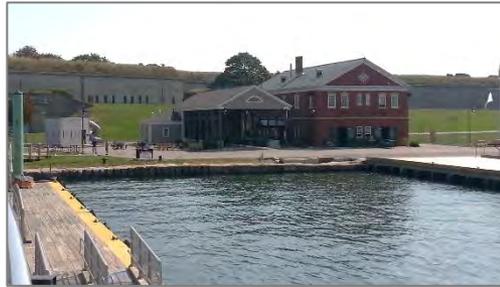
----- Technology Information -----

Implemented Innovative Technologies

**Essex Sheriff's Department
Demand Response and Custom
Metal-enclosed Switchgear**



**Georges Island, DCR
Off grid electricity with PV arrays with
battery storage and diesel generator.**



**Concord Armory
Burner Booster**



**Sheriff's Dpts. in Middlesex,
Plymouth and Essex
Automated water management
system for laboratories**



**Berkshire House of Correction
Instantaneous water heater in pair with
condensing boilers**



Bristol Community College

**ZNE lab
with
ground-
source
and air-
source
heat
pumps**



TZNE Retrofit Charrette

74 participants across multiple disciplines



Holyoke Com. College TZNE Owners Program Req. Charrette

Pilot TZNE programs:

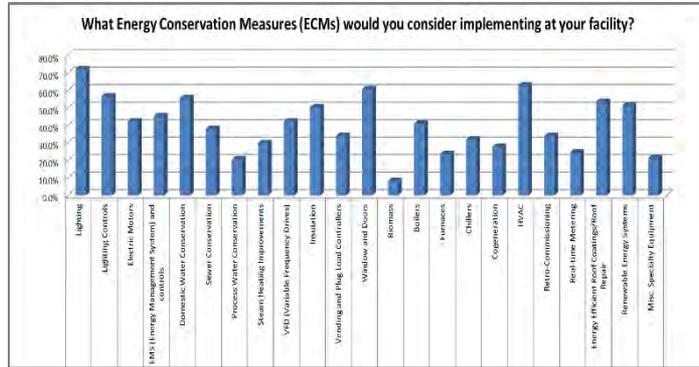
1. Cape Cod Community College
2. Holyoke Community College
3. Greenfield Community College
4. Plymouth Country Correctional
5. Essex Sheriff's Department
(Lawrence and Middleton)
6. Georges Island
7. Lancaster Complex
8. North Central Correctional
Institute *50% energy usage reduction*
9. Soldiers' Home Chelsea

**TZNE Retrofit
Report
Includes Just Do
Its ("JDIs")**

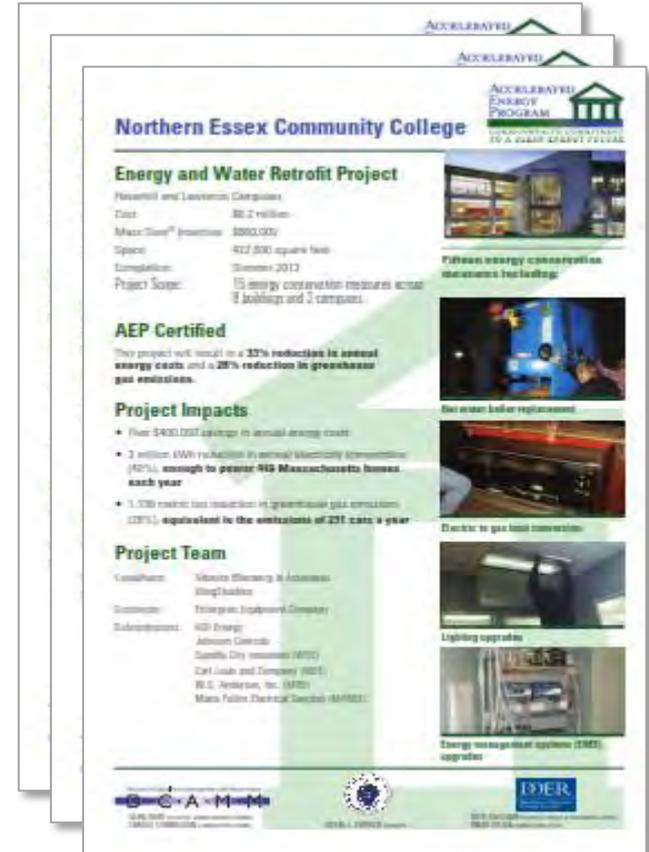


Provided Outreach to Facility Managers

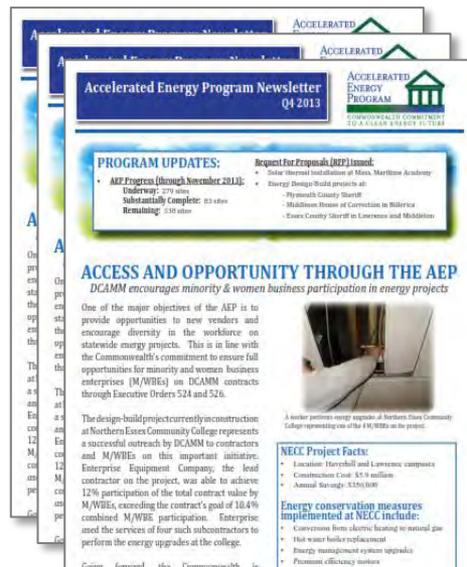
AEP Survey of Needs to all Facility Managers



AEP Certification Plaques & Posters



AEP Bi-Monthly Newsletters

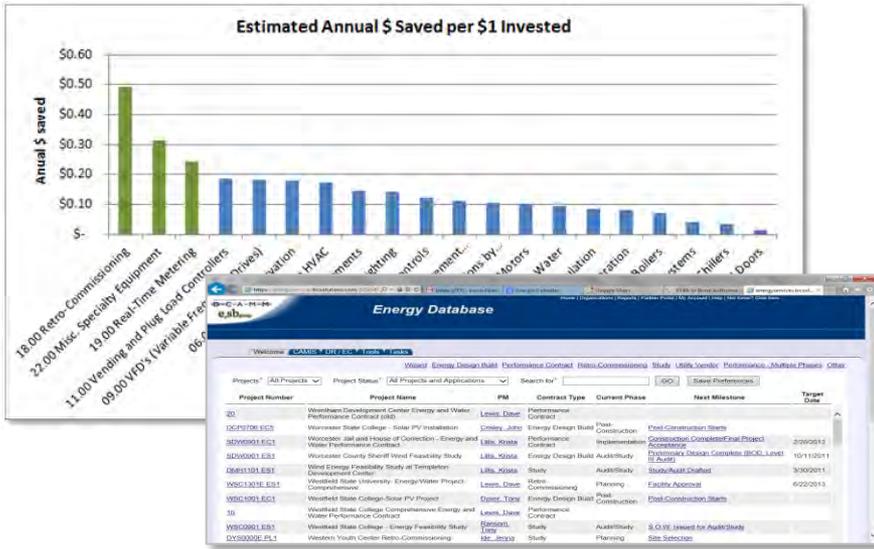


AEP Welcome Kits



Connected Energy Management with IFM

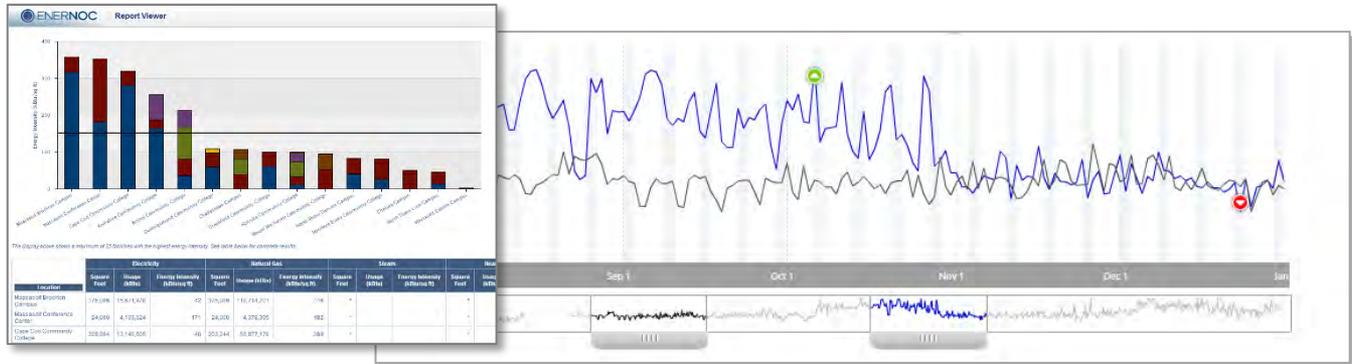
Better integration of facility energy data between CAMIS, EPDB and other sources



Energy and Utility Account Information (MEI) Increased from 30% in 2011 to 87% of sites SQFT



Use of Real-time Facility Energy Usage Data (EEMS) Installed at 470 state buildings (25 million SQFT)



Raised Awareness through Press Events

Patrick-Murray Administration Announces Accelerated Energy Program

Innovative Program Sets Ambitious New Energy Goals to Reduce Energy Consumption at 700 State Sites; Will Save Massachusetts \$43 Million Annually; Create Up to 4,000 Jobs

O'Neil Memorial Rink in Charlestown - 2012



Gardner Event - Sept 2014



NECC Event - Jan 2014



Pittsfield Event - May 2014



MASSBuys EXPO - May 2012



Bradley Palmer State Park - Sept 2013



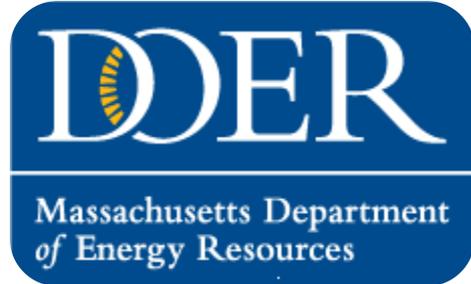
MAFMA's semi-annual meeting - Nov 2013



STCC - Jan 2013



Creating A Cleaner Energy Future For the Commonwealth



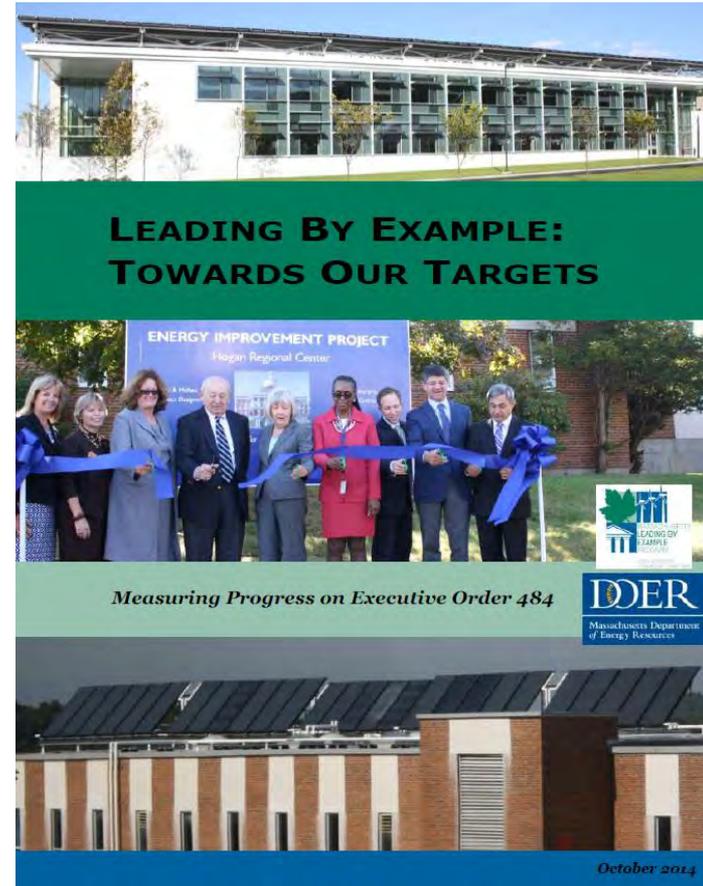
Leading by Example Updates

**Director,
Eric Friedman**

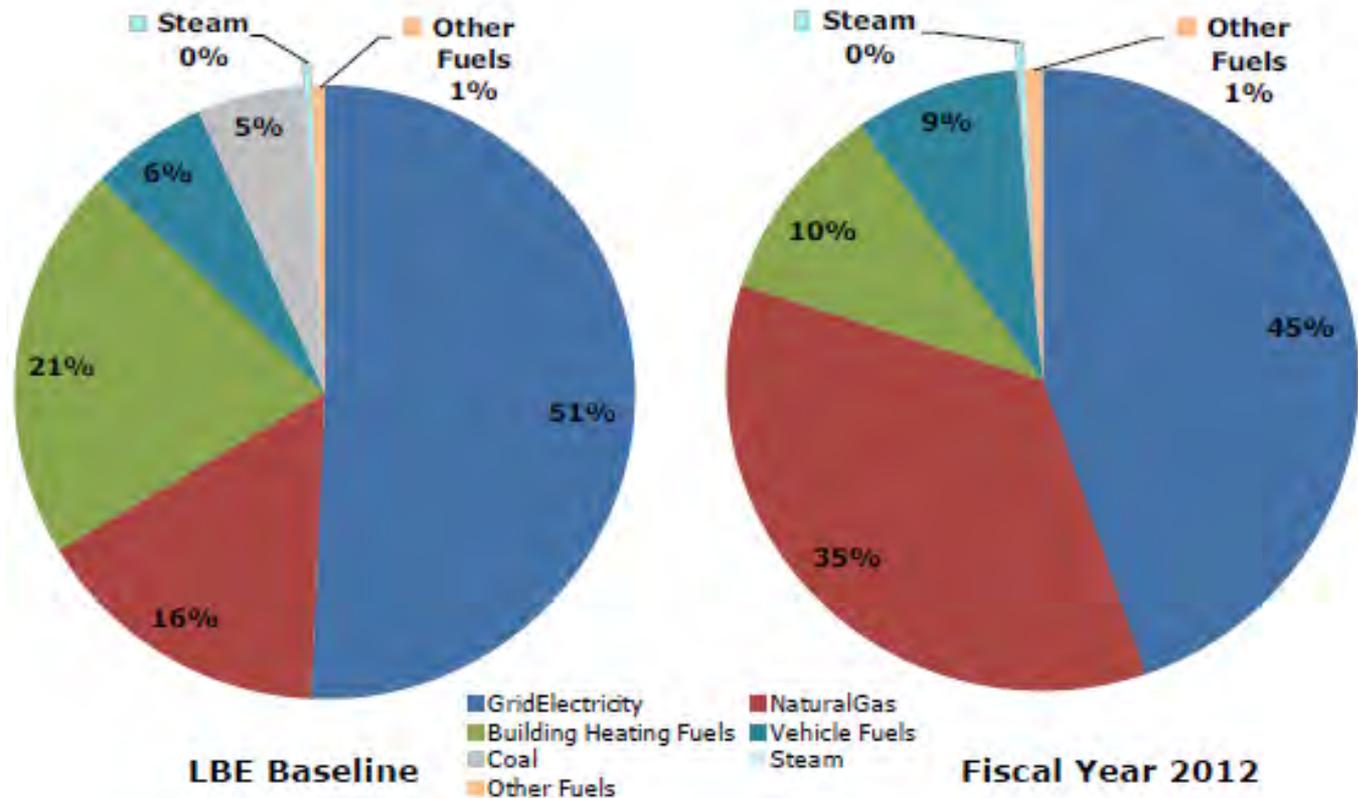
LBE Progress Report

- First comprehensive LBE Progress Report
- Highlights progress toward E. O. 484 2012 goals
 - 25% GHG emission reduction
 - 20% improvement energy intensity
 - 15% of electricity as renewable
- 80 million of square feet of buildings and over 3,000 vehicles
- Includes hospitals, college and university campuses, prisons, visitor centers, state parks, roads and tunnels, airports, dams, waste water treatment facilities

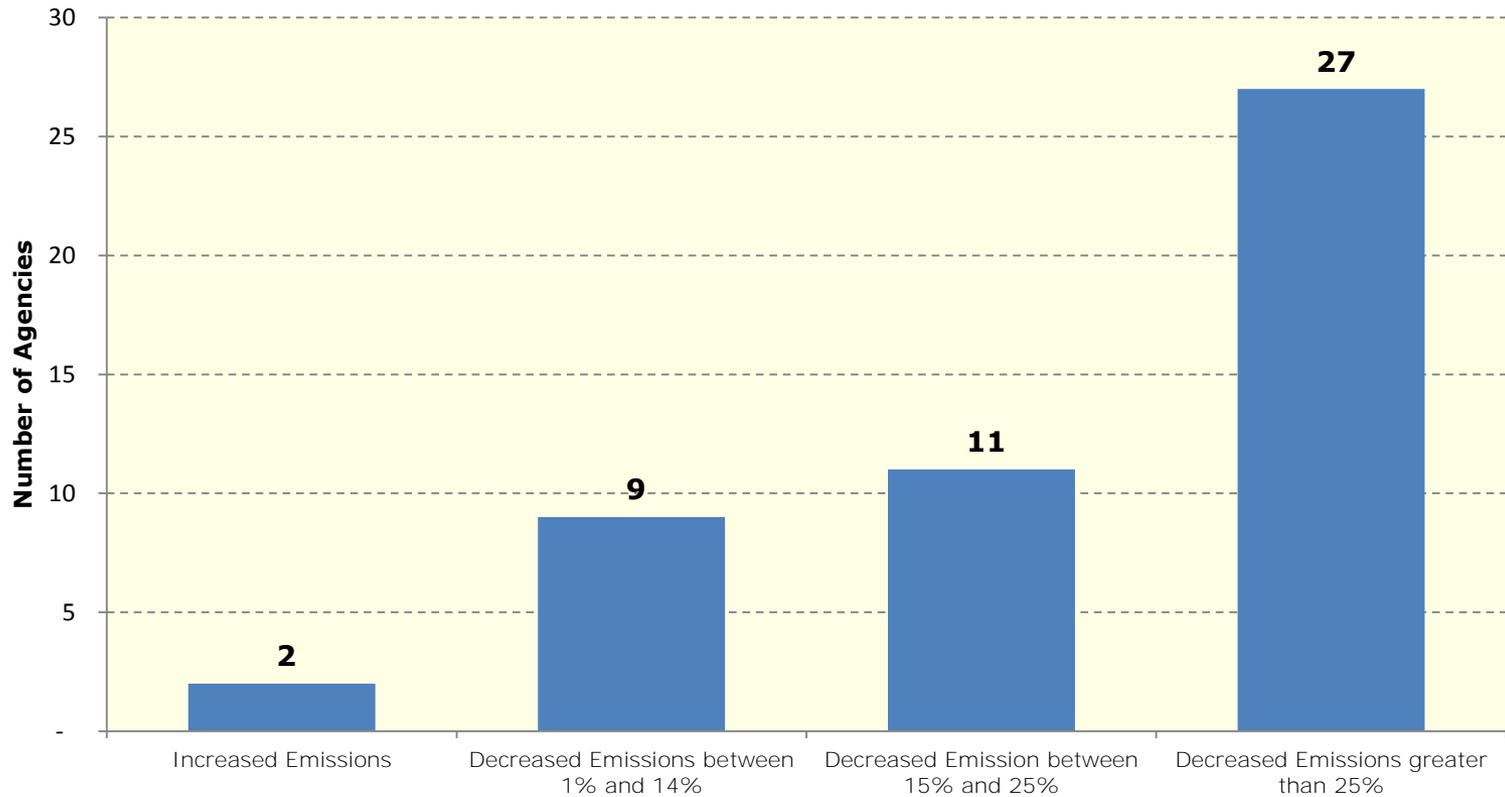
www.mass.gov/energy/lbepprogressreport



Greenhouse Gas Emission Sources



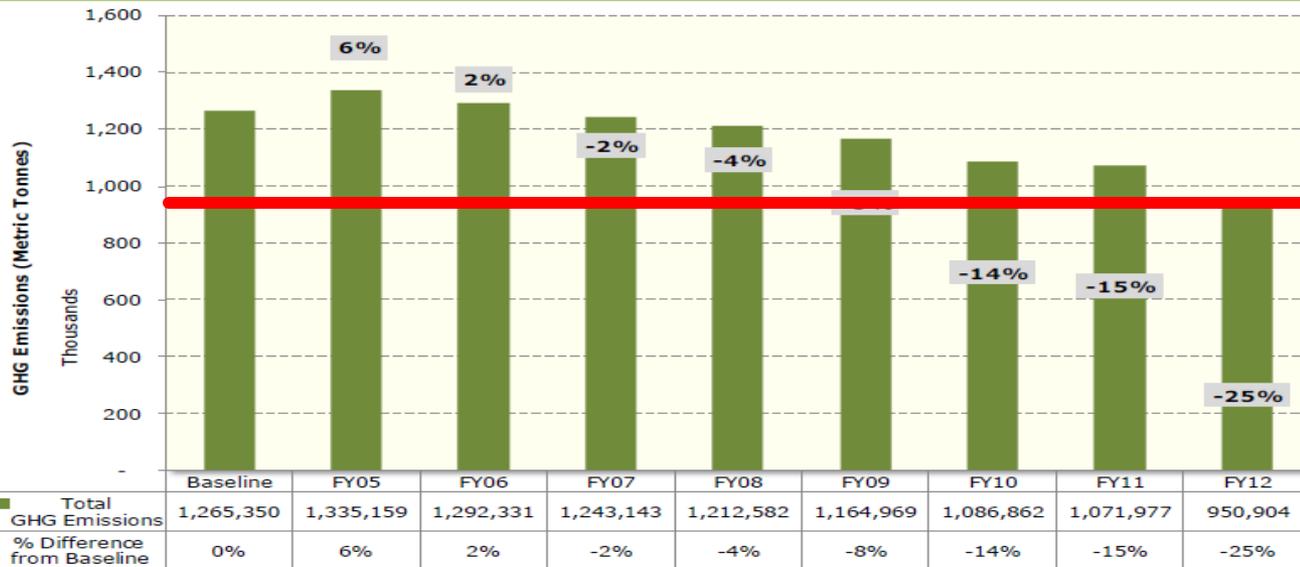
Agency GHG Emissions



Massachusetts Department
of Energy Resources

Creating A Cleaner Energy Future For the Commonwealth

Greenhouse Gas Reductions

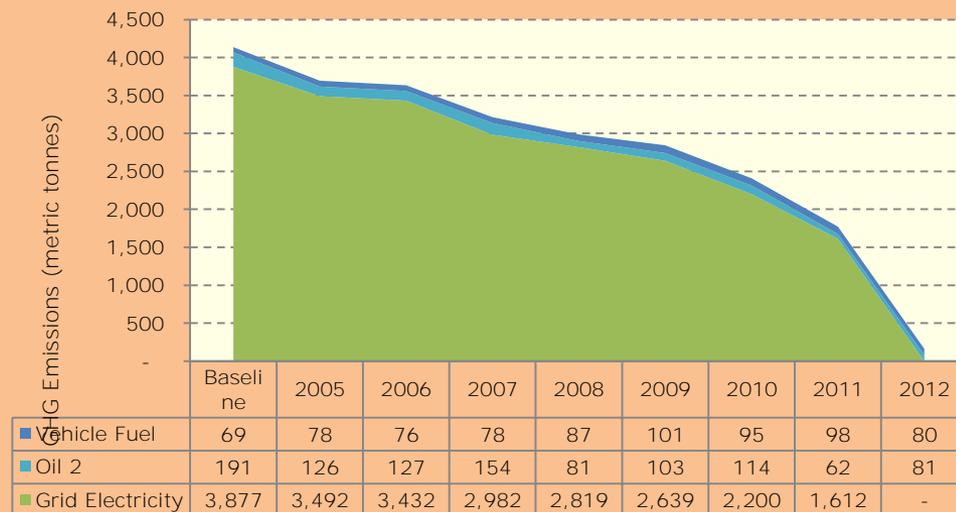


**25%
reduction
in GHG
emissions
in 2012!**

Figure 4: Annual Change in GHG Emissions, Baseline Year to FY12

Overall GHG emissions have decreased 25 percent from the LBE Baseline through FY12, reducing overall emissions by some 314,000 metric tons.

**Mt. Wachusett
Community College
Reduced GHG emissions
from 4,000 tons in 2004
to 0 tons in 2012**



Moving away from heating oil

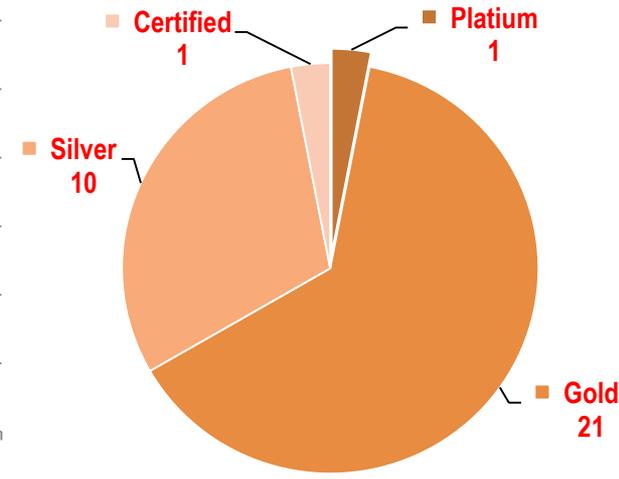
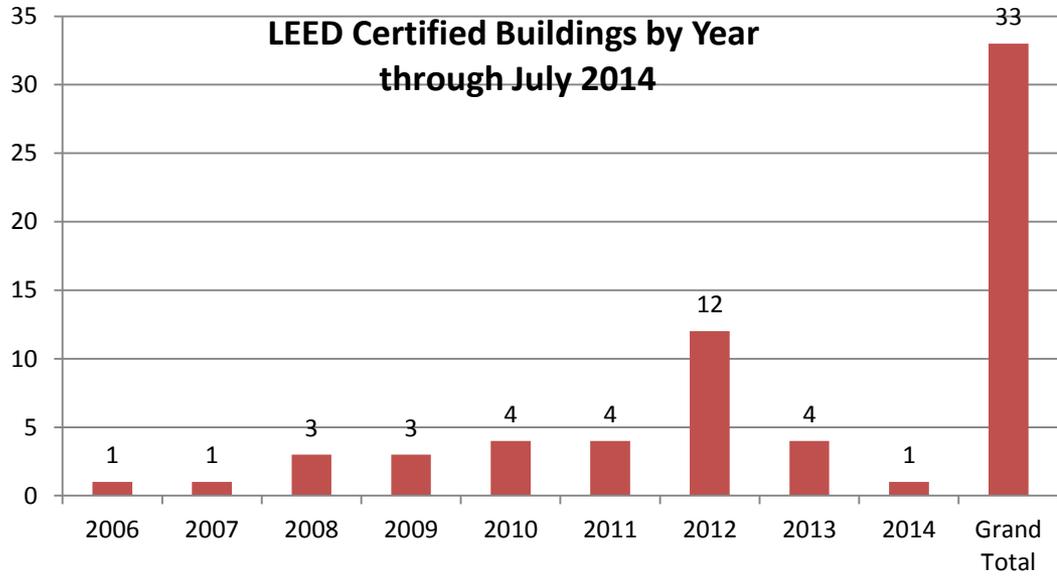


Heating oil consumption has decreased over 72% since FY06

A comprehensive energy project At *DDS Hogan and Wrentham Facilities* eliminated use of 1.7 million gallons of fuel oil, reducing annual energy and maintenance costs by \$3 million



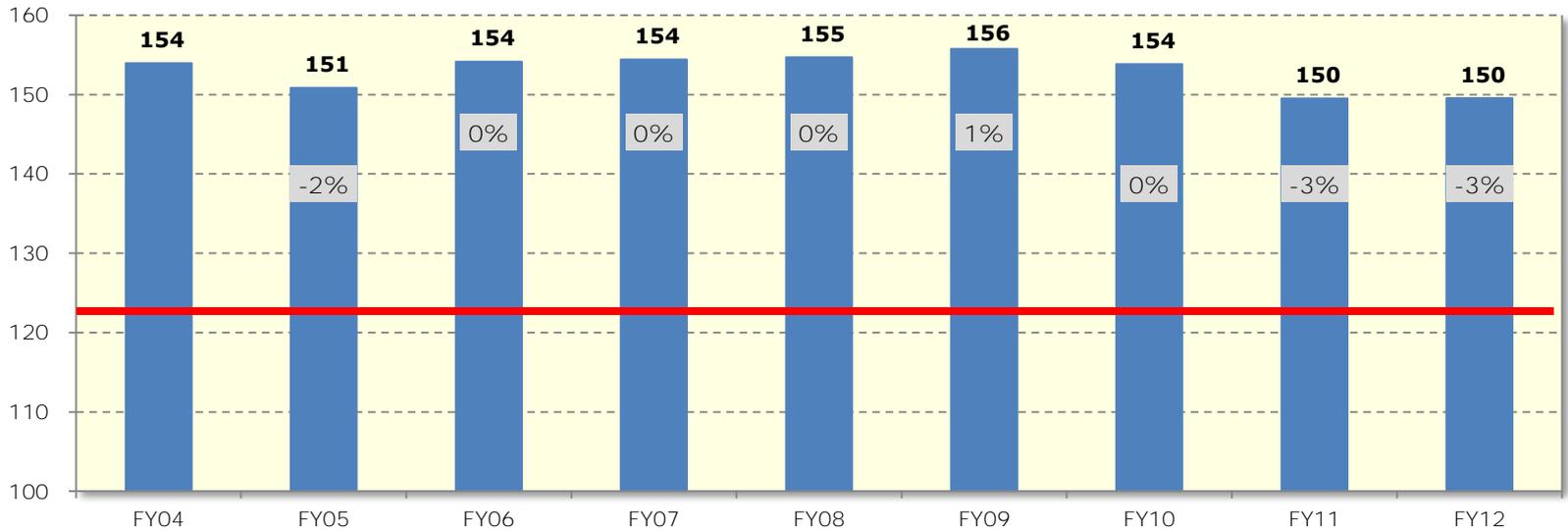
New Construction



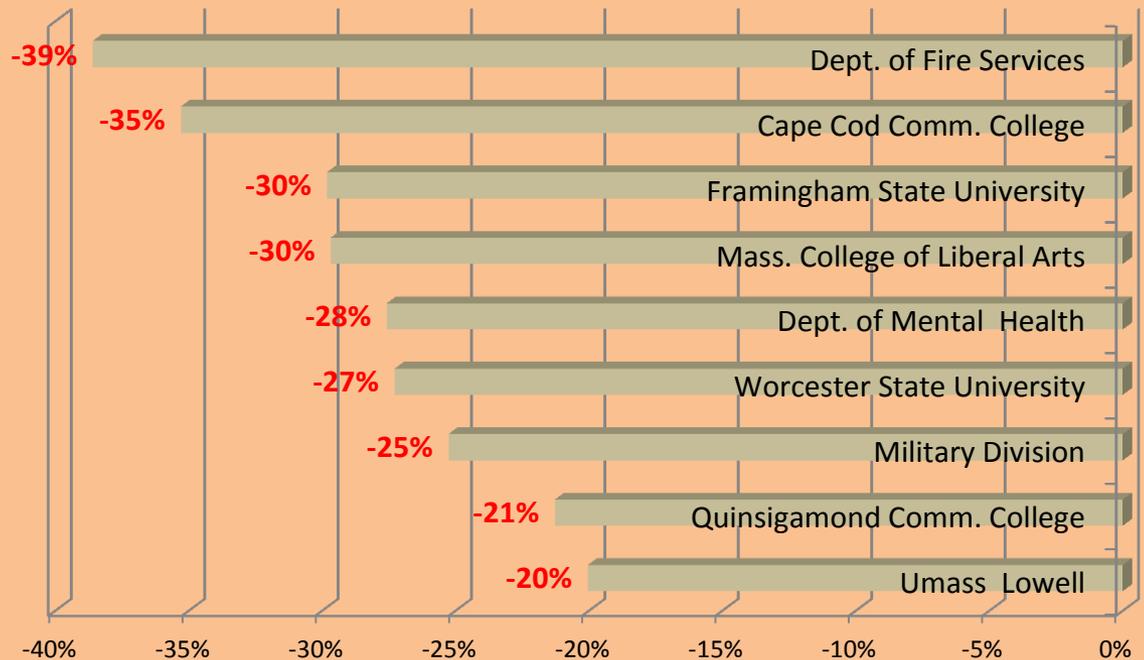
DFW headquarters is one of three buildings designed by DCAMM to meet the zero net energy building standard



Energy Use Intensity

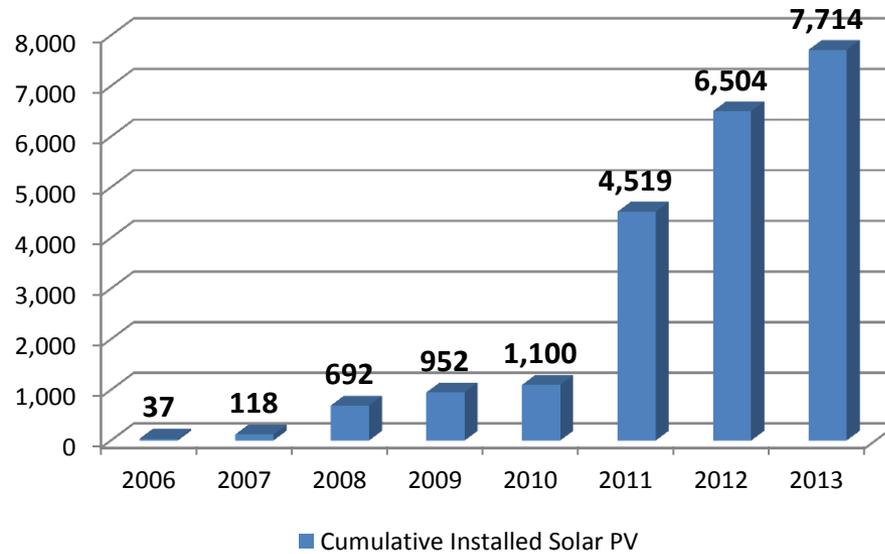


**Nine agencies/
campuses reduced
EUI by 20% or more**



Installed solar PV at state facilities increased from 100kW in 2007 to over 7.5 MW in 2013

Installed Solar PV at State Facilities

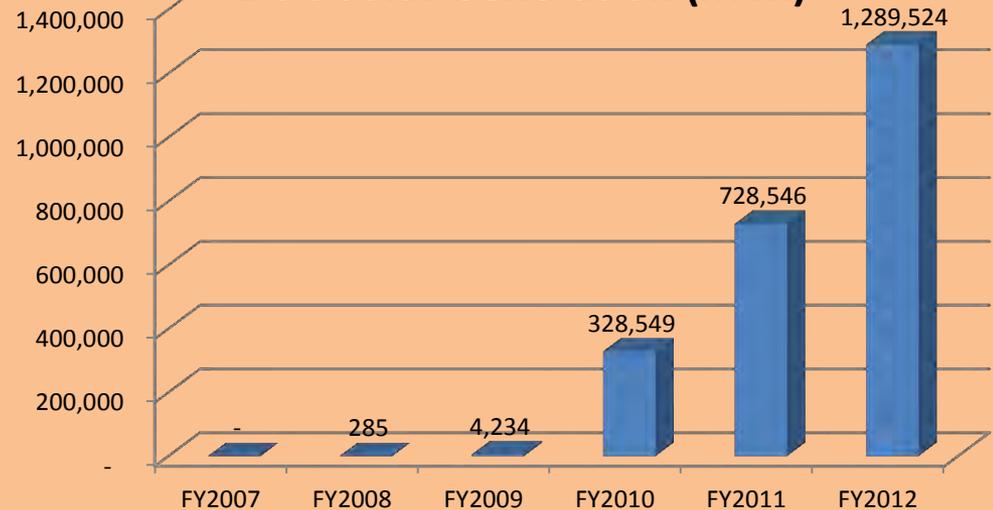


Solar Growth

DOC has installed 1 MW of solar PV,

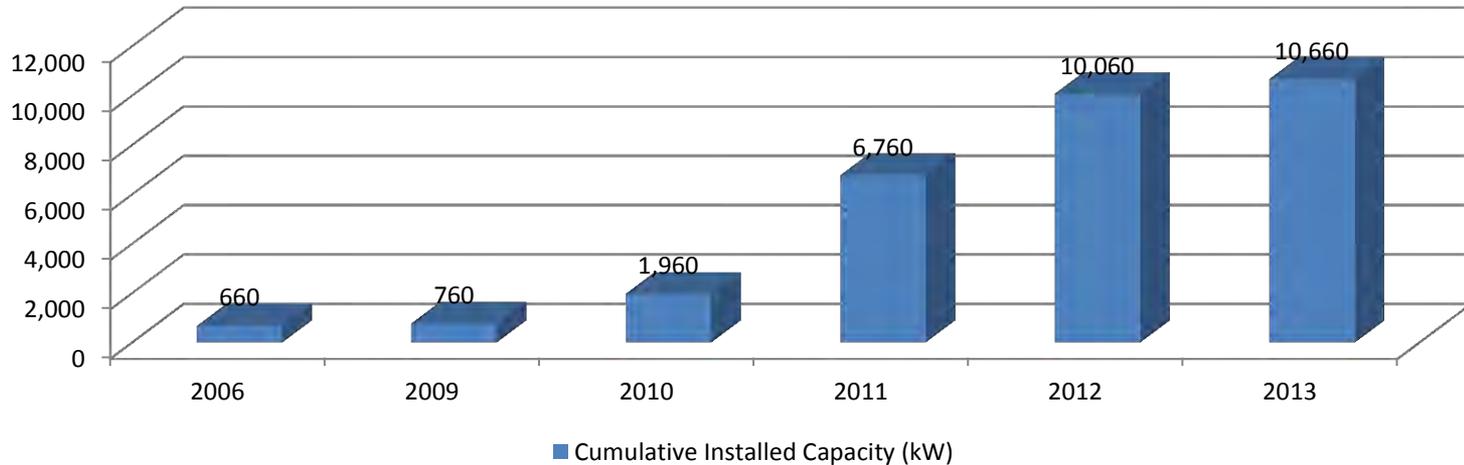


DOC Solar Generation (kWh)



Wind Generation

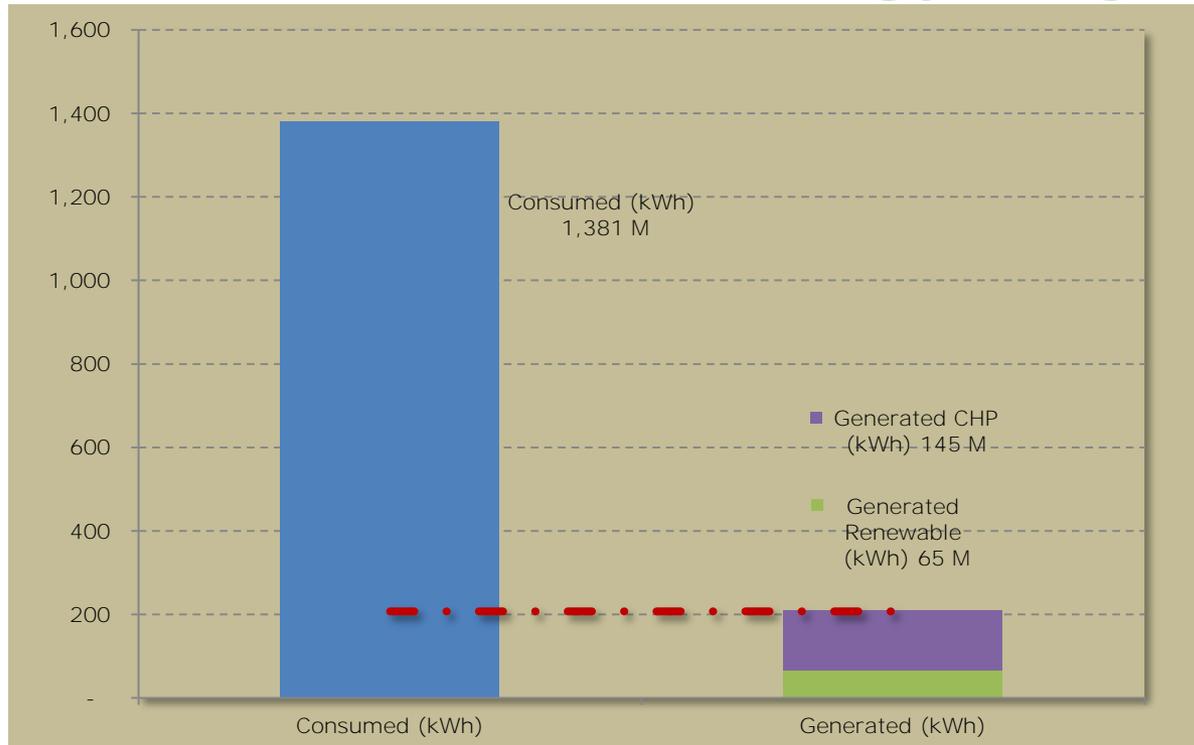
Cumulative Installed Wind at State Facilities



Two 600kW wind turbines installed at Deer Island contribute to the 25% on-site renewable generation at MWRA's Deer Island



On-site Energy Progress



15.21% of state government electricity consumption is generated on-site from clean and renewable sources

UMass Medical 17.5 MW natural gas CHP power plant generates 65% of campus electricity demand





THANKS!



DDER

Massachusetts Department
of Energy Resources

wealth

Celebration of Accomplishments:

A panel of state facilities on sustainability accomplishments, challenges and lessons learned

John Bello, Trial Courts

Joe Hogan, Dept. of Youth Services

Howie Larosee, Mass College of Art and Design

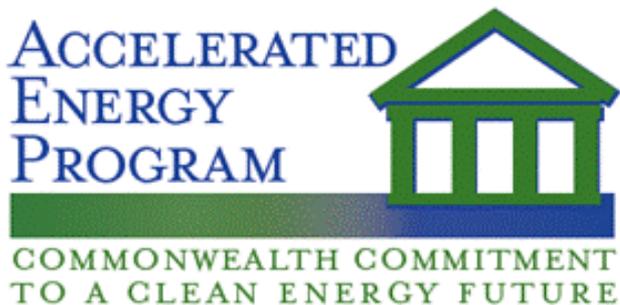
Colonel Tim Mullen, National Guard

Raul Silva, Dept. of Conservation & Recreation

Maureen Socha, Springfield Tech. Community College

Accelerated Energy Program and Leading By Example Program

Trivia Challenge



What's Next?

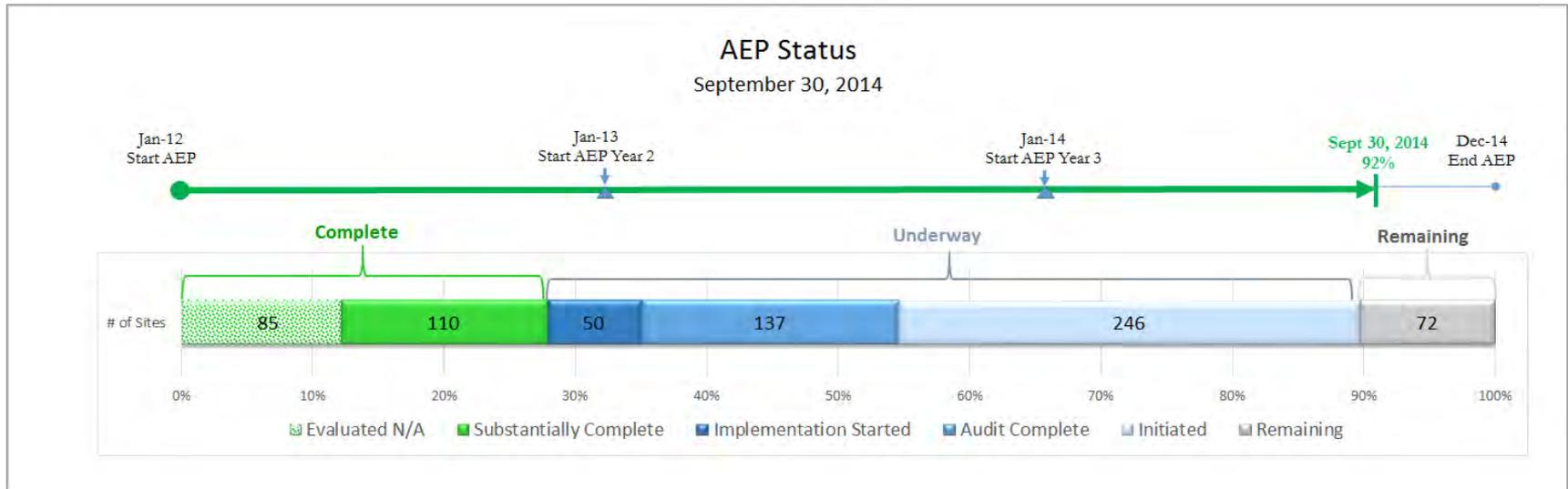
DCAMM E-Team 5 year Planning through 2020

Resiliency

Towards Zero
Net Energy

Continuous
Facility
Improvement

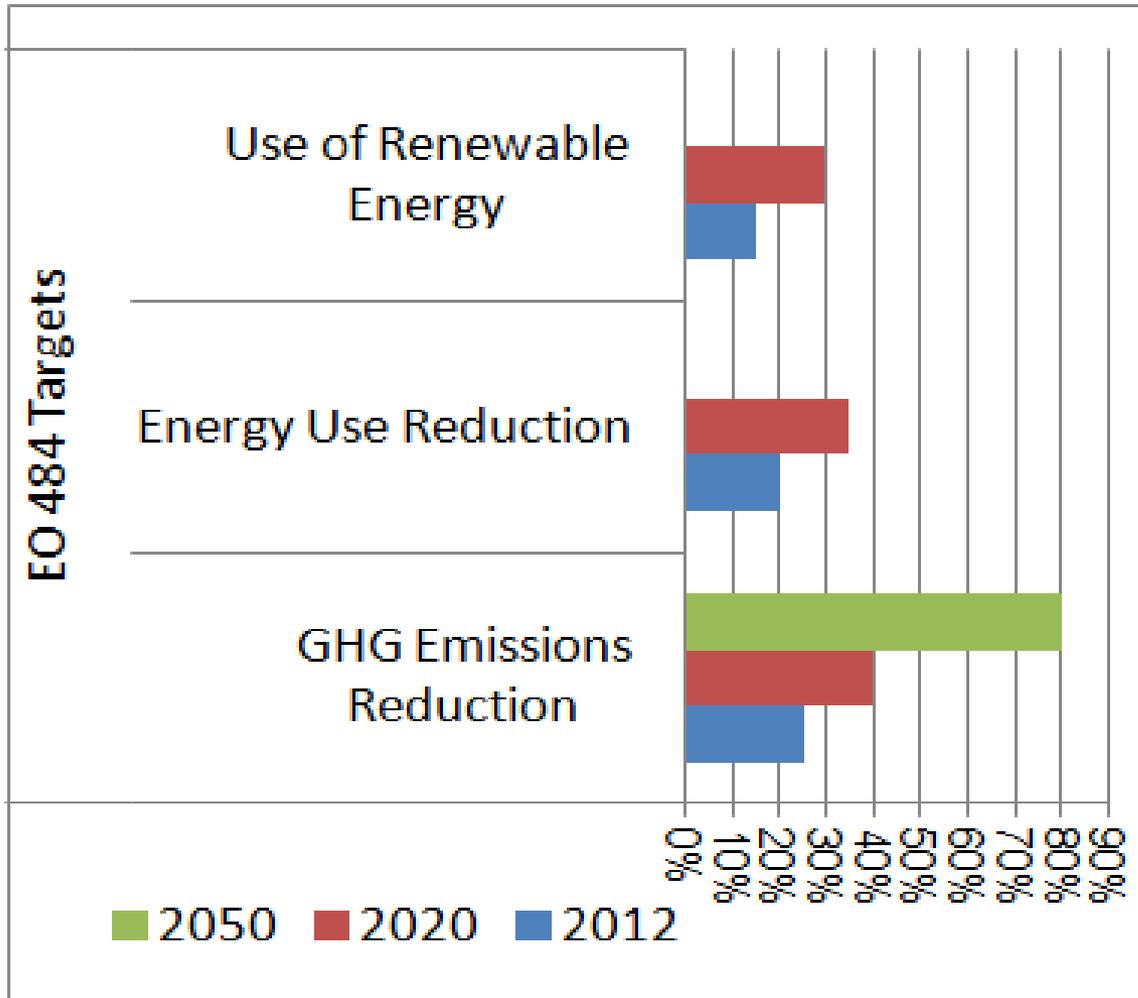
Complete initiated energy projects



Manage retrofit projects through delivery process:

- Initiate
- Complete draft and final audit
- Start implementation and construction
- Substantially complete

LBE Long-Term Targets



- 30% renewable by 2020
- 35% energy reduction by 2020
- 40% GHG emission reduction by 2020
- 80% GHG emission reduction by 2050

Resiliency

Towards Zero Net
Energy

Continuous Facility
Improvement

- Provide ongoing FM training and support
- Sustain performance through facility energy usage reports and analytics
- Conduct continuous commissioning
- Maintain systems

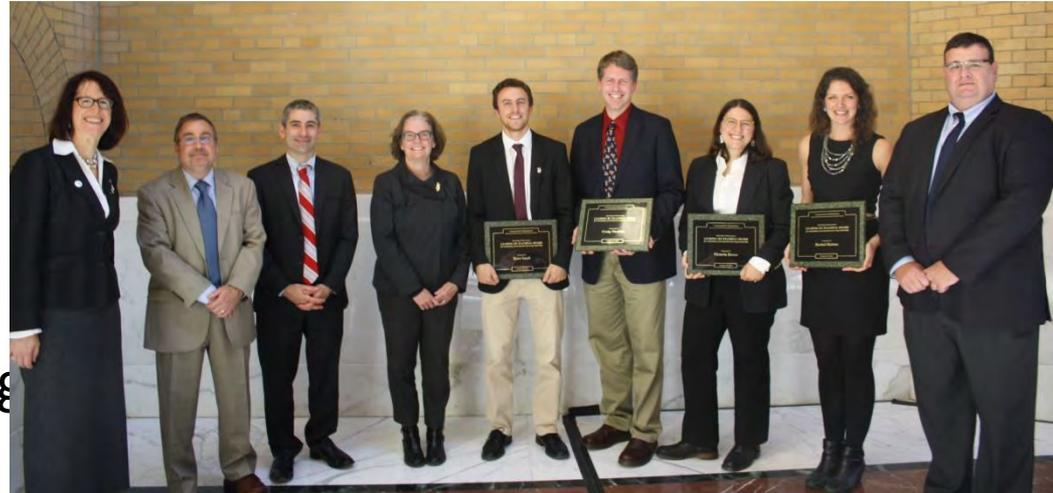
Education and Outreach

Progress:

- Guidance documents
- Media events/Ribbon cutting
- Blog posts
- LBE Awards

Moving Forward:

- Topical webinars
- Sustainability Challenge
- Education for all staff
- Increased communication with agency leaders



Mt. Wachusett Community College leads by example



Resiliency

Towards Zero Net
Energy

Continuous Facility
Improvement

- **Recruit the right team**
- **Integrate and stage project development**
- **Implement additional innovative ECMs**
- **Integrate with deferred maint. & construction**
- **Address plug loads and behavior modification**
- **Install renewable energy (PPAs, NMAs, DR)**

- Provide ongoing FM training and support
- Sustain performance through facility energy usage reports and analytics
- Conduct continuous commissioning
- Maintain systems

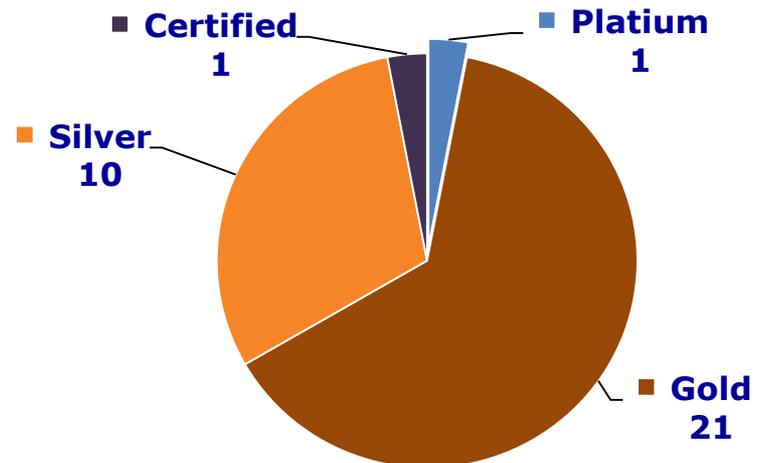
New Construction

Progress:

- ZNEB buildings constructed (NSCC, DFW)
- More ZNEBs in design
- 33 LEED certified buildings

Moving Forward

- New minimum standard
- Broader adoption of ZNEBs
- Best practices for high performance
- Improved energy tracking



Resiliency

- **Manage climate change risk**
- **Address vulnerabilities in facilities**
- **Prepare facilities and occupants for responding**
- **Incorporate sustainability with risk management**

Towards Zero Net Energy

- Recruit the right team
- Integrate and stage project development
- Implement additional innovative ECMs
- Integrate with deferred maint. & construction
- Address plug loads and behavior modification
- Install renewable energy (PPAs, NMAs, DR)

Continuous Facility Improvement

- Provide ongoing FM training and support
- Sustain performance through facility energy usage reports and analytics
- Conduct continuous commissioning
- Maintain systems

Innovative Technologies & Strategies

Progress:

- ARRA funded EEMS
- Piloted new technologies
- CEIP self- financing



Moving Forward:

- Massachusetts as First Customer
- Phase 2 - building energy intelligence
- Renewable thermal installations
- Solar canopies
- Revolving loan fund
- LED lighting
- Alternative Fuel Vehicles



Going Forward...

Education
&
Outreach

Resiliency

New Construction

Towards
Zero Net Energy

Innovative Tech &
Strategies

Continuous Facility
Improvement