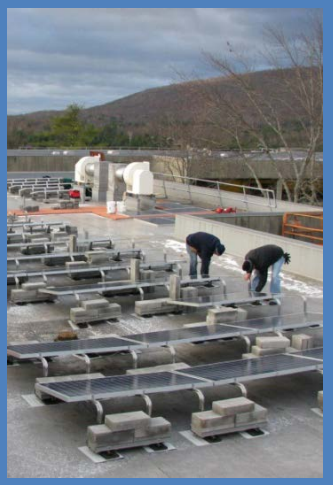

Q4 2012 Implementation Committee Meeting

January 15, 2013

www.mass.gov/dcam/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
Lt. Governor Murray

Secretary Sullivan
Commissioner Sylvia

DOER

Massachusetts Department of Energy Resources

Agenda

ACCELERATED ENERGY PROGRAM
COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

Welcome	
AEP Quarterly Progress Review	Jenna Ide
DOER Update	Eric Friedman
AEP Labor & Workforce Development	Hope Davis
MassGreen Initiative	STCC, Leslie Hoffman
AEP Simple Fix Project Examples	EE&D, Dave Ward

Public Launch of the AEP !

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ACCELERATED ENERGY PROGRAM
COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

Welcome

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

AEP Progress Review

Program Goals & Objectives

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COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

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UMASS

massDOT

MASSACHUSETTS STATE POLICE

nationalgrid
THE POWER OF ACTION

EOLWD

NSTAR

BCC
BRISTOL COMMUNITY COLLEGE

Western Massachusetts Electric
A Northeast Utilities Company

EXECUTIVE OFFICE of ENVIRONMENTAL AFFAIRS

Unitil

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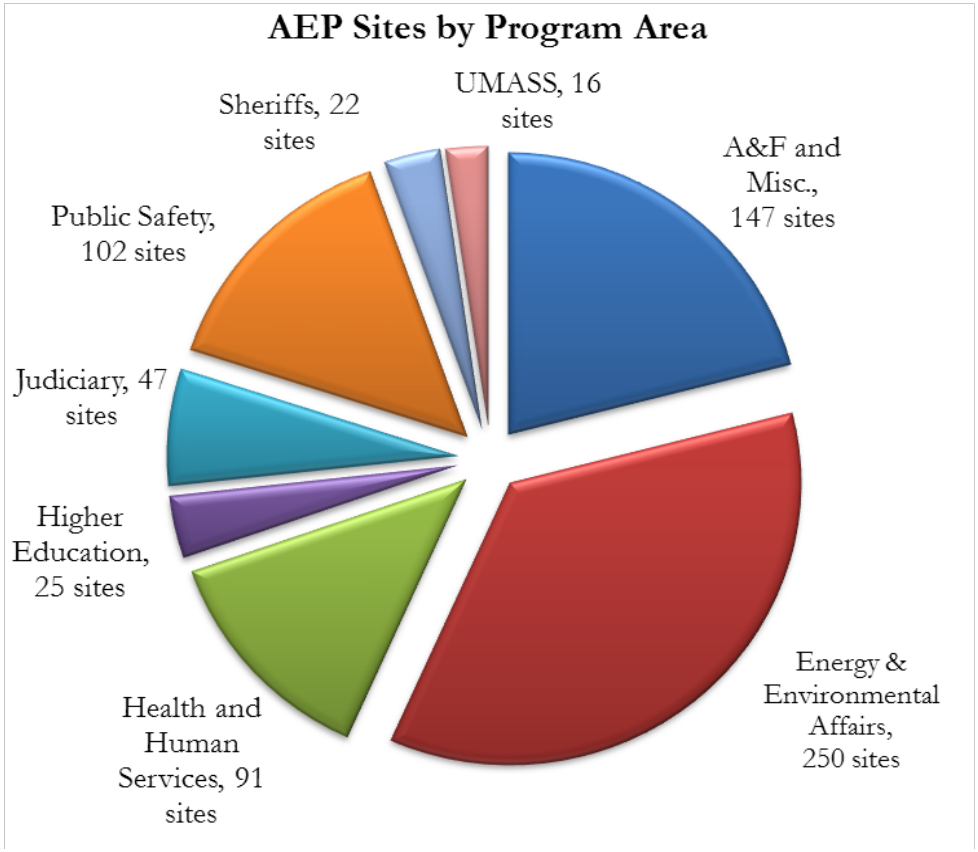
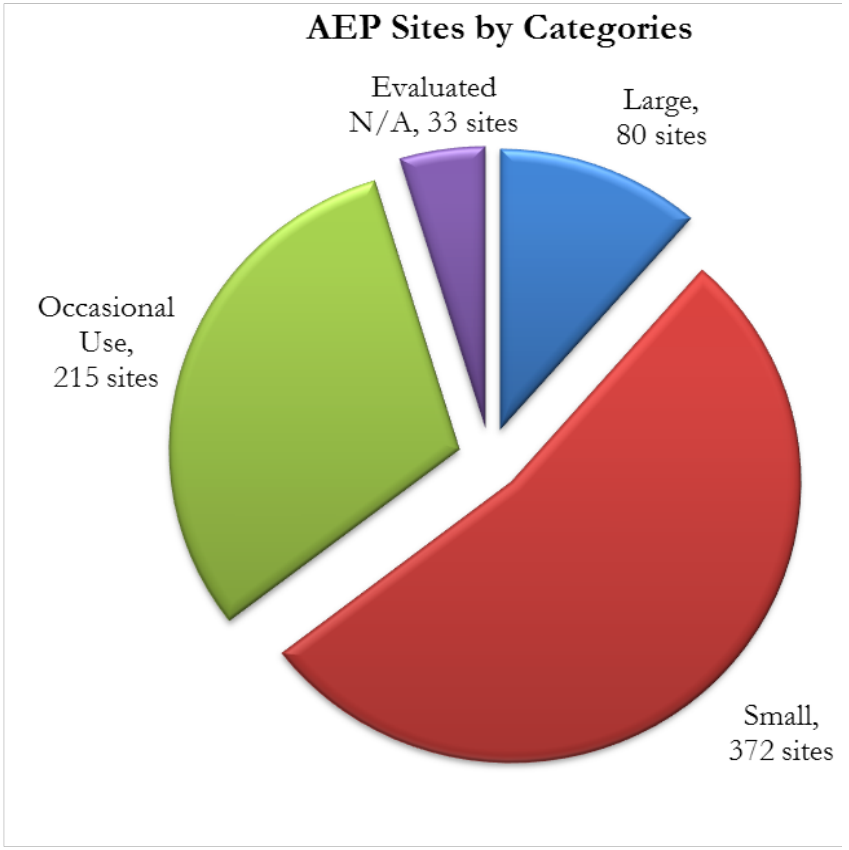
Program Scope

ACCELERATED ENERGY PROGRAM
COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

700 Sites





*No changes since Q3 2012

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Progress Highlights

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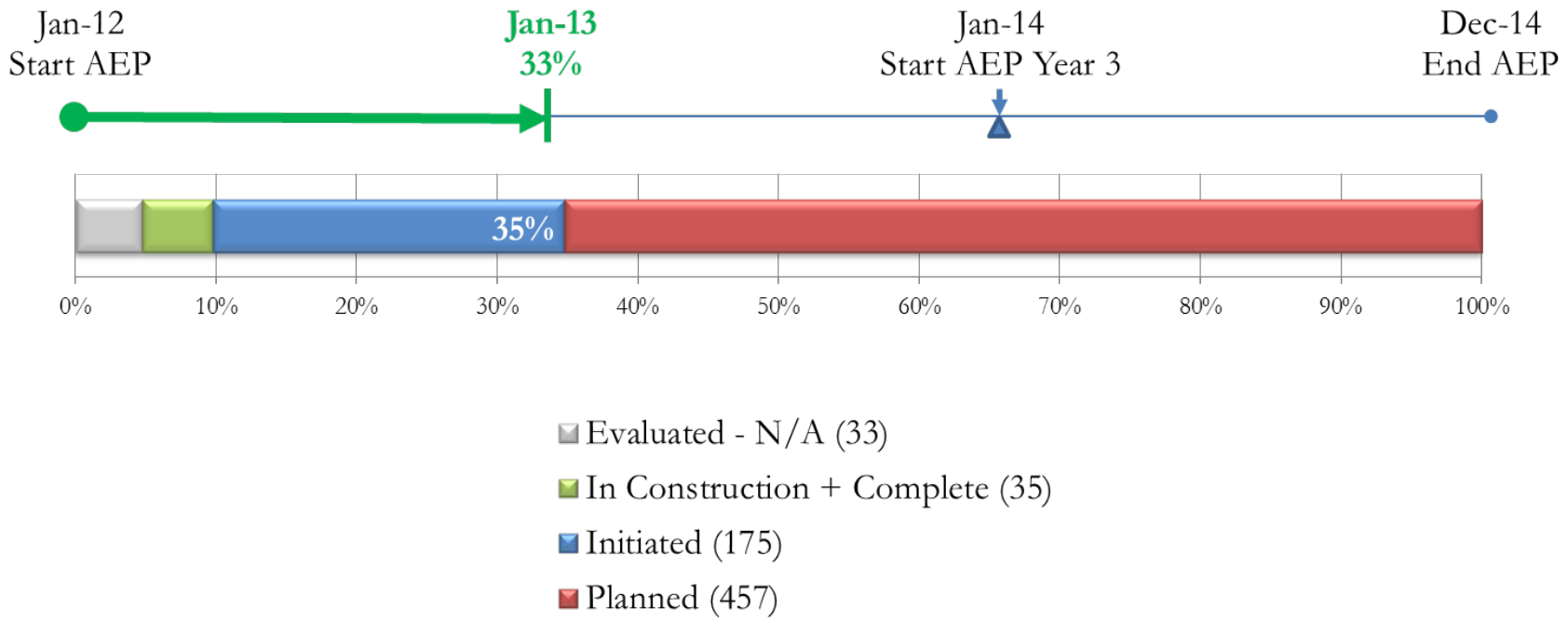
We will have initiated or completed **over 200 Sites** by the end of Q4 2012.



*DCAMM is in the process of validating progress completed in Q4 2012.

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Some Progress Highlights – Large Sites

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COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

- **Middlesex Community College (Bedford)**: Ground Source Heat Pump now in operation
- **Berkshire House of Correction (Pittsfield)**: Schematic Design services approved for boilers, solar thermal, and solar PV system
- **Bristol Community College (Fall River)**: RFP issued for 900 kW wind turbine
- **Springfield Tech Community College (Springfield)**: RFP issued for new $12 million Chiller Equipment
- **McCormack & Lindemann buildings (Boston):** RFP issued for $24 million in energy & water conservation upgrades
- **Trial Courts**: Construction contract signed for an Energy Design/ Build project at 10 western region sites.

MCC President Cowan and LBE Director Freidman watch while US Rep Tierney flips switch on new GSHP system at Middlesex Community College.

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Small and Occasional Use Sites

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COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

In Q4 2012, energy audits were conducted at **76 small and occasional use sites,** including 67 DCR sites across the Western, Southeastern and Central Regions.

Energy Conservation Measures (ECMs)	Investment		Annual Energy & Water Savings			
	Estimated Install Cost [$]	Utility Incentive [$]	Energy [MMBtu]	Water [Gallon]	Energy Cost [$]	Simple PB [yrs]
Totals	**$ 1,851,252**	**$ 113,440**	**10,864**	**5,503,901**	**$ 295,512**	**6.3**

dcr Massachusetts

DCR coordination meeting at Nantasket Beach Reservation in Hull, MA.

Simple Fix Measures

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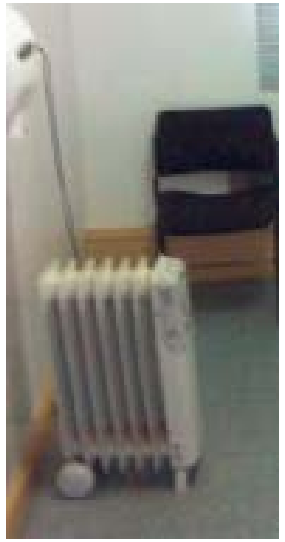
COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

Simple Fix measures have been identified across all sites, with an average of $25,000 investment and $4,000 annual savings in energy costs at each site.

Replace with Energy Star rated refrigerator

Install energy misers

Upgrade building automation systems



Install baseboard heaters with programmable thermostats

Install programmable thermostats

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Innovative Utility Vendor Contracting

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nationalgrid THE POWER OF ACTION

NSTAR

Western Massachusetts Electric
A Northeast Utilities Company

DCAMM is signing direct contracts with utility vendors with the authority of the MA Green Communities Acts. These contracts will use pricing already negotiated by utility companies.

In Q4 2012, DCAMM signed a contract with a utility vendors (RISE Engineering) for 15 courts*.

In Q1 2013, DCAMM will be reaching out to ALL utility vendors to offer participation in program.

Deputy Commissioner Sandra R. Duran congratulates RISE Engineering Vin Graziano on becoming the first vendor to sign a utility vendor contract with DCAMM.

*DCAMM is in the process of signing contracts with NXEGEN and Prism Consulting.

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Simple Fix Measures

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Insulate exposed piping and attics

Install weather stripping

Replace windows

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Electronic Survey to Agencies

ACCELERATED ENERGY PROGRAM
COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

In September 2012, an electronic survey was issued to:

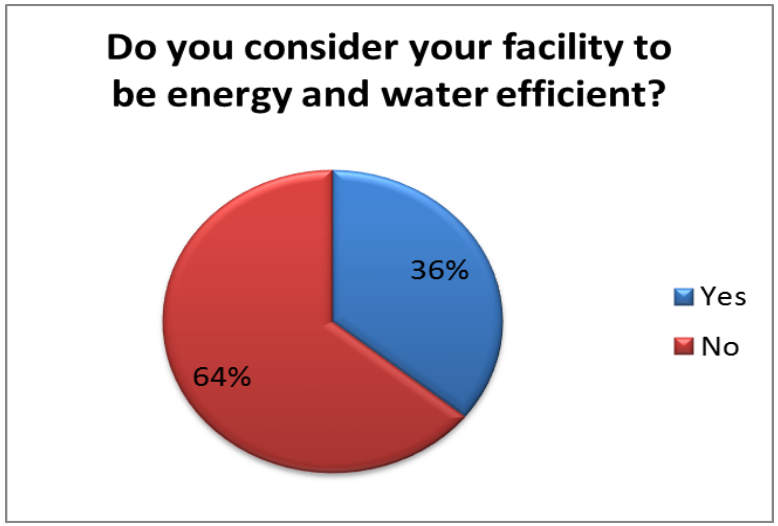
- determine and prioritize the types of projects that will be included in the AEP, and
- verify and update information in CAMIS.

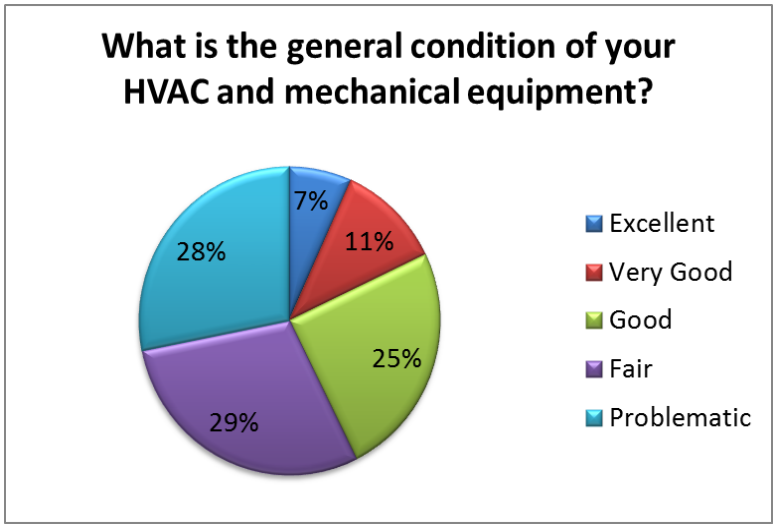
Feedback from 114 respondents.

In 2013, a second survey will be coming, with a personal follow up with each facility manager.

AEP Survey Sections:

1. General Questions
2. Facility Questions
3. Energy and Water Consumption Information
4. Energy Project Information
5. Skills and Training





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Electronic Survey to Agencies

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COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

What ECMs would you consider implementing at your facility?

Lighting - 70%

HVAC - 62%

Windows and Doors - 58%

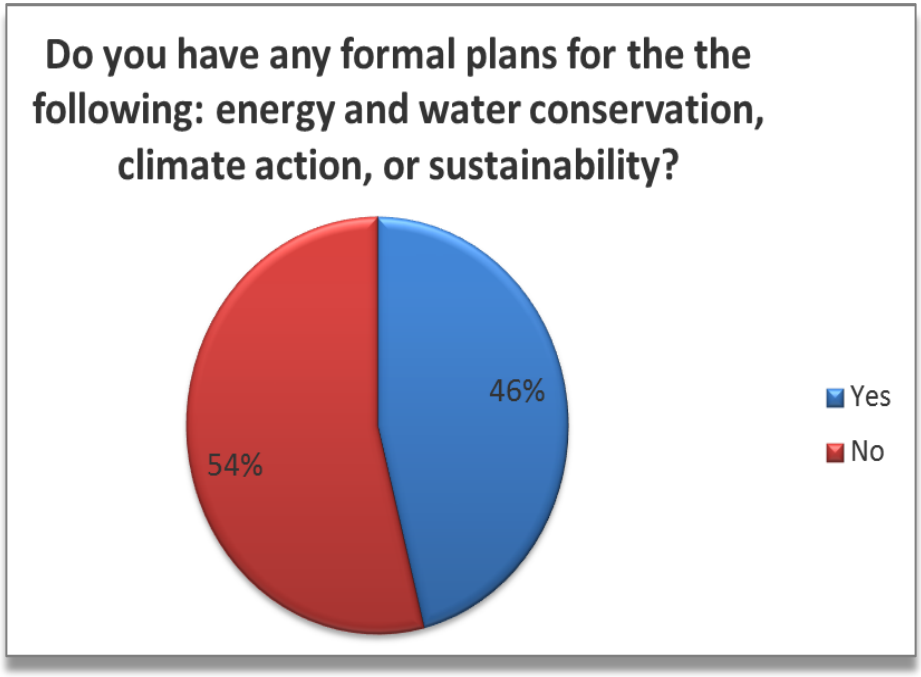
Lighting Control - 55%

Domestic Water Conservation - 55%

Roof Repair / Energy Efficiency Roof - 51%

Insulation - 49%

Renewable Energy - 50%



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AEP Working Groups

ACCELERATED ENERGY PROGRAM
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	Q4 2012	Q1 2013
Communications	Developed AEP logo and media kit	AEP Public launch
Small Sites	Finalized and signed utility vendor contract, initiated work at 38 small sites	Initiate work at MassDOT sites, sign additional utility vendors
Audits & RCx	Developed standardized scope of work and initiated new Retro-Commissioning project	Initiate three Retro-Commissioning projects
Outreach & Tech Support	Collected and analyzed site survey results	
Building Codes	Developed roadmap for building codes	Distribute building codes checklist for small energy projects for feedback
Data & Performance	Developed spending and encumbrance plan based on AEP financial plan	Finalize AEP Database & Dashboard
Procurement	Explored innovative procurement options with utilities, comptroller, and DCAMM contractors	Develop procurement tracking processes for small sites
Leasing	Identified all spaces leased to Agencies by public and private landlords.	Develop prioritized list of leased spaces
Labor & Workforce	Developed process for ensuring M/WBE participation on small projects	Create and implement an AEP Workforce Development Strategy

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AEP Working Groups

ACCELERATED ENERGY PROGRAM
COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

Thank you all for your contributions and expertise on the **AEP Working Groups**!

We are making excellent progress.

DOER Update

AEP Targets and Certification

Across the entire AEP portfolio, DCAMM and DOER will target a 25% reduction in energy consumption, greenhouse gas emissions, and energy costs.

Consistent with statewide goals, DCAMM and DOER will prioritize energy efficiency.

AEP Certified and Certified Plus

- To become **AEP Certified**, an individual site must achieve a minimum reduction in two of the following three categories: site energy use, greenhouse gas emissions, and energy costs. The required level of reduction (see next slide) varies depending on the site category (large, small, occasional use).
- To become **AEP Certified Plus**, sites must implement additional cost-effective clean energy measures in order to achieve higher reductions than under the AEP Certified level (see next slide). Additionally, sites must establish staff training and preventive maintenance programs.
- DCAMM and DOER will pursue **AEP Certified** designation for all sites.
- On-site clean energy generation may be used to achieve **AEP Certified** and **Certified Plus** levels.
- A site may become **AEP Certified** and then achieve an **AEP Certified Plus** designation at a later date
- Where applicable, water conservation measures will be included at all sites.

AEP Certification

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	Large Sites (i.e. hospitals, colleges, prisons)	Small Sites (i.e. police barracks, career centers)	Occasional Use Sites (i.e. ice rinks, state parks)
AEP Certified	1. Achieve a **25%** reduction in at least 2 of the following categories: site energy use, greenhouse gas emissions, energy costs. 2. Energy consumption must be reduced by at least 10%	1. Achieve a **20%** reduction in at least 2 of the following categories: site energy use, greenhouse gas emissions, energy costs. 2. Energy consumption must be reduced by at least 10%	Meet the reduction threshold for small sites or implement at least three energy/water conservation measures.
	Large and Small Sites		**Occasional Use Sites**
AEP Certified Plus	1. Achieve a 50**%** reduction in at least 2 of the following categories: site energy use, greenhouse gas emissions, energy costs; 2. Energy consumption must be reduced by at least 20% 3. Establish energy and facility maintenance training program for staff; and 4. Develop plan for preventative maintenance to keep systems operating at optimum efficiency.		Not eligible

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AEP Certification

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Springfield Technical Community College

Current Status: *RFP Issued*

On schedule to achieve AEP Certification from a reduction of over 25% in energy use, energy cost, and GHG emissions.

Large Site

	Energy Use (MMBtu)	Energy Cost	GHG Emissions (metric tons)	No. of ECMs
Baseline	856,298	$1,645,121	6,859	N/A
Savings	401,495	$447,862	1,782	N/A
Reduction	47%	27%	26%	N/A
AEP Certified	✓	✓	✓	**N/A**

Taunton Career Center

Current Status: *In Construction*

Will achieve AEP Certification upon construction completion for reaching reduction of over 20% in all three categories.

Small Site

	Energy Use (MMBtu)	Energy Cost	GHG Emissions (metric tons)	No. of ECMs
Baseline	1,939	$32,917	136	N/A
Savings	1,174	$16,480	75	N/A
Reduction	61%	50%	55%	N/A
AEP Certified	✓	✓	✓	**N/A**

Salisbury Beach State Park

Current Status: *Audit Complete*

The energy audits of the site identified eight (8) ECMs that, upon implementation, will enable the site to achieve AEP Certification.

Occasional Use Site

	Energy Use (MMBtu)	Energy Cost	GHG Emissions (metric tons)	No. of ECMs
Baseline	2,027	$50,250	202	N/A
Savings	235	$6,528	19	8
Reduction	12%	13%	10%	N/A
AEP Certified	**X**	**X**	**X**	✓

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DOER Clean Energy Update

ACCELERATED ENERGY PROGRAM
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Three Year Utility Efficiency Plans Filed with DPU

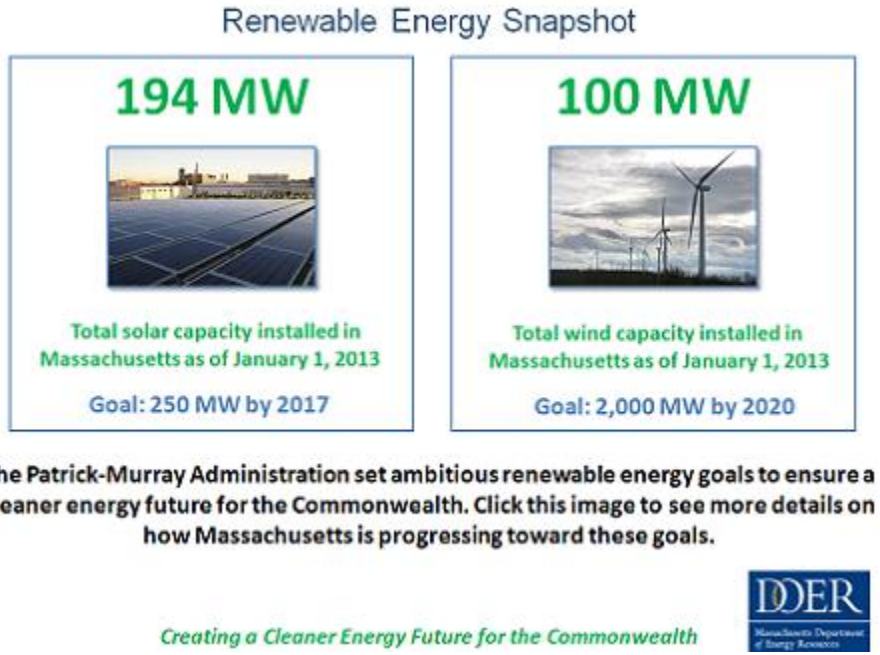
- Over three years, $2 billion investment with almost $9 billion in savings
- Electricity savings of 3.7 million MWh, equivalent to powering 500,000 homes
- Natural gas savings of 72 million therms, equivalent to heating 70,000 homes

Municipalities designated as a Green Community reaches 110

Largest On-Shore Wind Project in MA Completed

- 28.5 MW in Florida, MA

Significant Increase in Installed Renewable Energy Across the Commonwealth



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DOER Leading by Example Update

ACCELERATED ENERGY PROGRAM
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LED & Efficiency Light Bulb Program Successful

- Over 150,000 LEDs and efficient T8s ordered by agencies and municipalities
- Annual electricity reductions of almost 7 million kWh and $1 million
- Looking to continue collaboration with utilities in 2013

EEMS On-Going Training to start in January 2013

Upcoming LBE 2013 Clean Energy Grants

- $2 million for on-site thermal applications (solar thermal, heat pumps, biomass)
- $1.5 million to support large-scale 3rd party owned solar PV arrays on Parking Lots

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Labor & Workforce Development

Labor & Workforce Working Group

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Initial Focus:

- Establish an interagency group of advisors representing state agencies, job training organizations, labor unions, contractors and others.
- Learn about existing training programs, especially at community colleges.
- Coordinate with DCAMM's IFM initiative for training facilities personnel.
- Plan for potential seasonal workers for next year.
- Expand vendors for the large comprehensive sites.

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Labor & Workforce – Group of Advisors

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Kick-off Meeting

January 31, 2013

- Executive Office of Labor and Workforce Development
- New England Clean Energy Foundation
- Mass Clean Energy Council
- Mass Green Initiative
- MA SDO
- Building Trades Council
- Youth Build
- MMCA
- Building Pathways
- Community College Business and Industry Directors
- New England Regional Council of Carpenters
- The Construction Institute
- Contractors
- Utility Companies
- And more….

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Next Steps

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COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

In Q1 2013, the working group will create and implement an AEP Workforce Development Strategy which includes the following key next steps:

1. Perform a workforce needs assessment of the AEP project portfolio
2. Develop a draft workforce strategy document
3. Identify potential employers
4. Develop a scope of work for AEP worker training and/or certification
5. Work with unions to develop an approach for AEP pre-apprenticeship
6. Schedule a vendor fair to introduce the AEP and elicit involvement
7. Coordinate with DCAMM's IFM Initiative for training facilities personnel
8. Create an AEP Workforce Development Strategy

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MassGreen Initiative

MassGREEN INITIATIVE

Springfield Technical Community College

* *

Developing and delivering

CLEAN ENERGY

WORK-PLACE TRAINING PROGRAMS

to help build a vibrant and highly-skilled green workforce in Massachusetts

MassGREEN INITIATIVE
Springfield Technical Community College

What We Do

In collaboration with recognized leaders in clean energy—including Massachusetts industries, employers, nonprofits, and government agencies—MassGREEN Initiative ***creates workforce training courses primarily in the field of home WEATHERIZATION.***

MassGREEN Initiative weatherization courses are developed to be the best and most comprehensive in the industry. They are ***designed to provide students with extended opportunities for hands-on learning and skill-building***.

MassGREEN INITIATIVE

Springfield Technical Community College

Our College Partners

MassGREEN Initiative works in close partnership with seven lead community colleges across the state of Massachusetts:

GREENFIELD CCC

BCC BRISTOL COMMUNITY COLLEGE

ROXBURY COMMUNITY COLLEGE GATEWAY TO THE DREAM

Berkshire Community College

NORTH·SHORE COMMUNITY COLLEGE Real Opportunities

Springfield Technical Community College

Exceptional Education. Proven Results.

MassGREEN INITIATIVE

Springfield Technical Community College

Weatherization Training Centers

MassGREEN Initiative will soon complete the 6th and final regional, weatherization training center. MGI TC's are located at or in near proximity to our six lead community colleges.

Each center is outfitted with ***the latest in weatherization tools and equipment***. And each houses a full array of both ***large simulated house props and smaller table-top props***. Props are used to aid students in practicing air-sealing and insulation techniques in as "real world" a setting as possible.

All props were designed using the latest in BPI training prop designs and specifications.

MassGREEN INITIATIVE
Springfield Technical Community College

The Wx Installer Course

AFFILIATE ORGANIZATION

MGI Weatherization Installer Training Course

This ***heavily "hands-on," 78 hour weatherization installer course (WxIC)*** equips students with a solid understanding of modern building science and with the skills needed to become professional air-sealing and insulation installers. Accredited by the *Building Performance Institute (BPI),* this course ***addresses all of the topics and techniques necessary for students to pursue BPI certification as weatherization installers.****

*(*RBE-WH-WH-ALCI: Residential Building Envelope, Whole House, Air Leakage Control Installer).*

Currently, our WxIC course is regularly offered at the following lead schools:

- **Berkshire Community College**
- **Bristol Community College**
- **Greenfield Community College**
- **Northfield Community College**
- **Springfield Technical Community College**

MassGREEN INITIATIVE

Springfield Technical Community College

The Wx Crew Chief Course

Last Fall, our newest ***MassGREEN Initiative*** course, *The Weatherization Crew Chief Course*, went to pilot.

Designed in line with the development of the *Building Performance Institute's* weatherization crew chief standards, our 32-hour course will equip qualified weatherization installers with additional knowledge and skills needed to become crew chiefs of weatherization installer crews.

MassGREEN INITIATIVE

Springfield Technical Community College

Mobile Combustion Safety Training Lab

Constructed initially to provide a training site for our Weatherization Crew Chief Course, our brand new MCSTL is a self-contained facility equipped

with electric plug-in, propane furnace and appliances, and solar electric power options. This will enable us to use the lab for multiple training purposes.

MassGREEN INITIATIVE

Springfield Technical Community College

Additional MGI WX Courses

XWxIC: Accelerated Weatherization Installer Course (32 hours)

WxBIZ: Starting and Running a Successful Weatherization Business (32 hours)

MassGREEN INITIATIVE

Springfield Technical Community College

Future MGI Courses

Weatherization Business Owners Series: Improving Your Business Skills and Practices.

Green Building Operators Certification Course

Home Owner's Weatherization Series

For more information about Weatherization, please contact:

Leslie Hoffman
Acting Director
MassGREEN Initiative
413-755-6143
ljhoffman@stcc.edu

Simple Fix Project Examples

Taunton Career Center - Retro Commissioning

Labor and Workforce Development

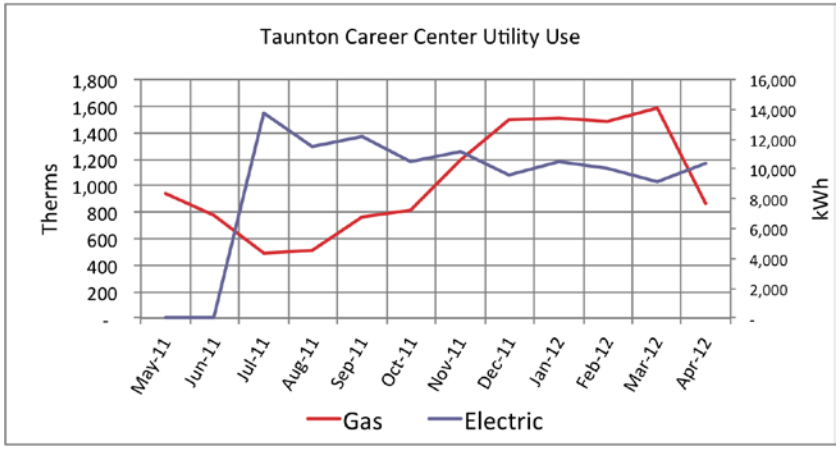
Taunton Career Center
Taunton, MA, MA

Status: RCx Complete

Project Overview:

- 7,200 square foot office building.
- Built in 1958, HVAC upgrade in 2010.
  - Building EUI = 285 kBtu/sf/yr
  - Average EUI = 80 kBtu/ sf/yr
- Retro Cx identified as ECM
  - RCx cost = $27,000
  - Energy Savings = $13,500 – 2.0 year simple payback.
  - AND a more comfortable work space.

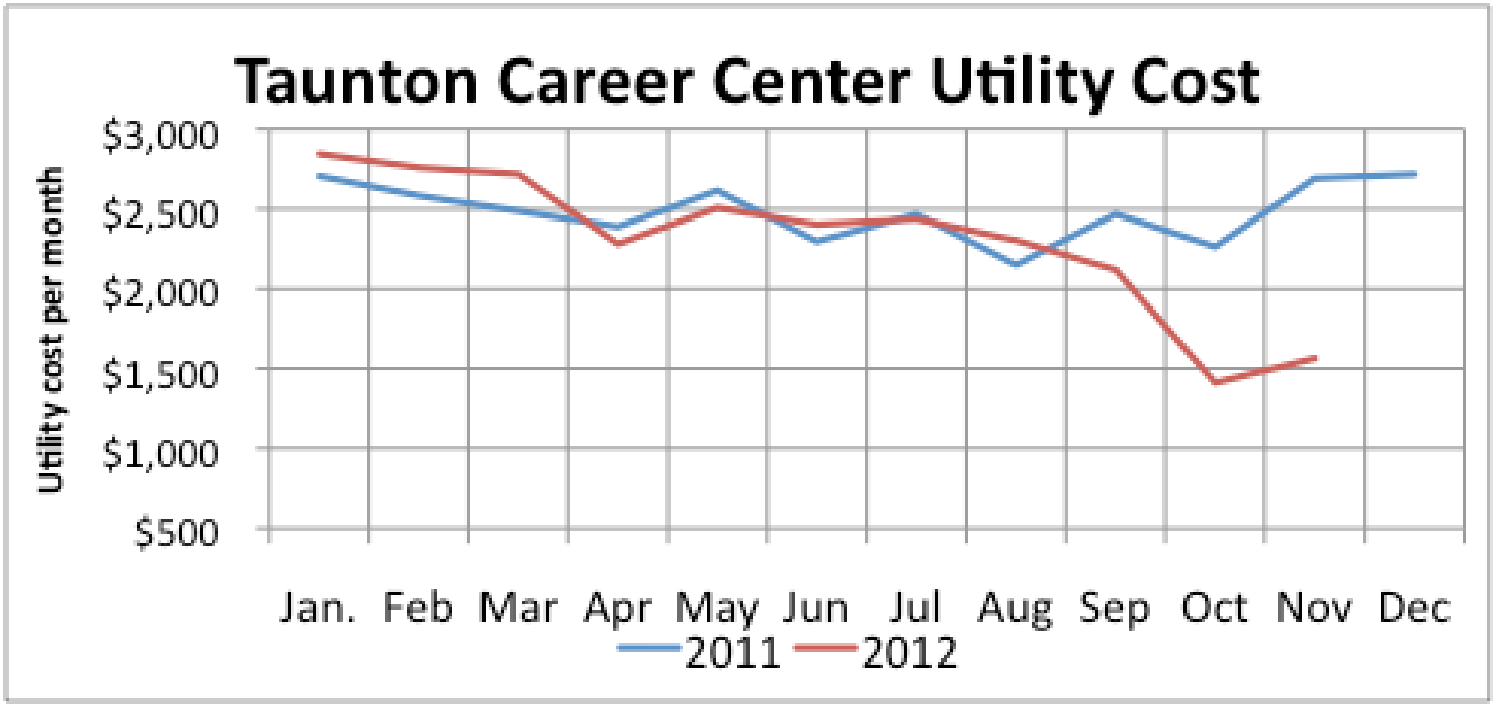
Taunton Career Center, Taunton, MA



Taunton Career Center – Retro Commissioning

The energy costs were reduced by 50% through retro commissioning in October and November 2012.

The energy savings qualifies Taunton Career Center for **AEP Certified Plus**.



DCR Simple Fix Energy Audits

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Central Region (8)

Worcester Bennett Field Pool
Clinton Pool and Regional HQ
Fitchburg Pool
Gardner Skating Rink
Leominster Pool
Milford Pool
Southbridge Pool
Worcester Buffone Skating Arena

dcr Massachusetts

North Shore Region (8)

Topsfield Bradley Palmer State Park
Rockport Halibut Point State Reservation
Gloucester Annisquam River Fishery
Lynn / Nahant Beach
Nahant Maintenance Division
Revere Beach Reservation
Revere Elliot House
Saugus Breakheart Reservation

Worcester Buffone Skating Arena

Saugus Breakheart Reservation

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DCR Simple Fix Energy Audits

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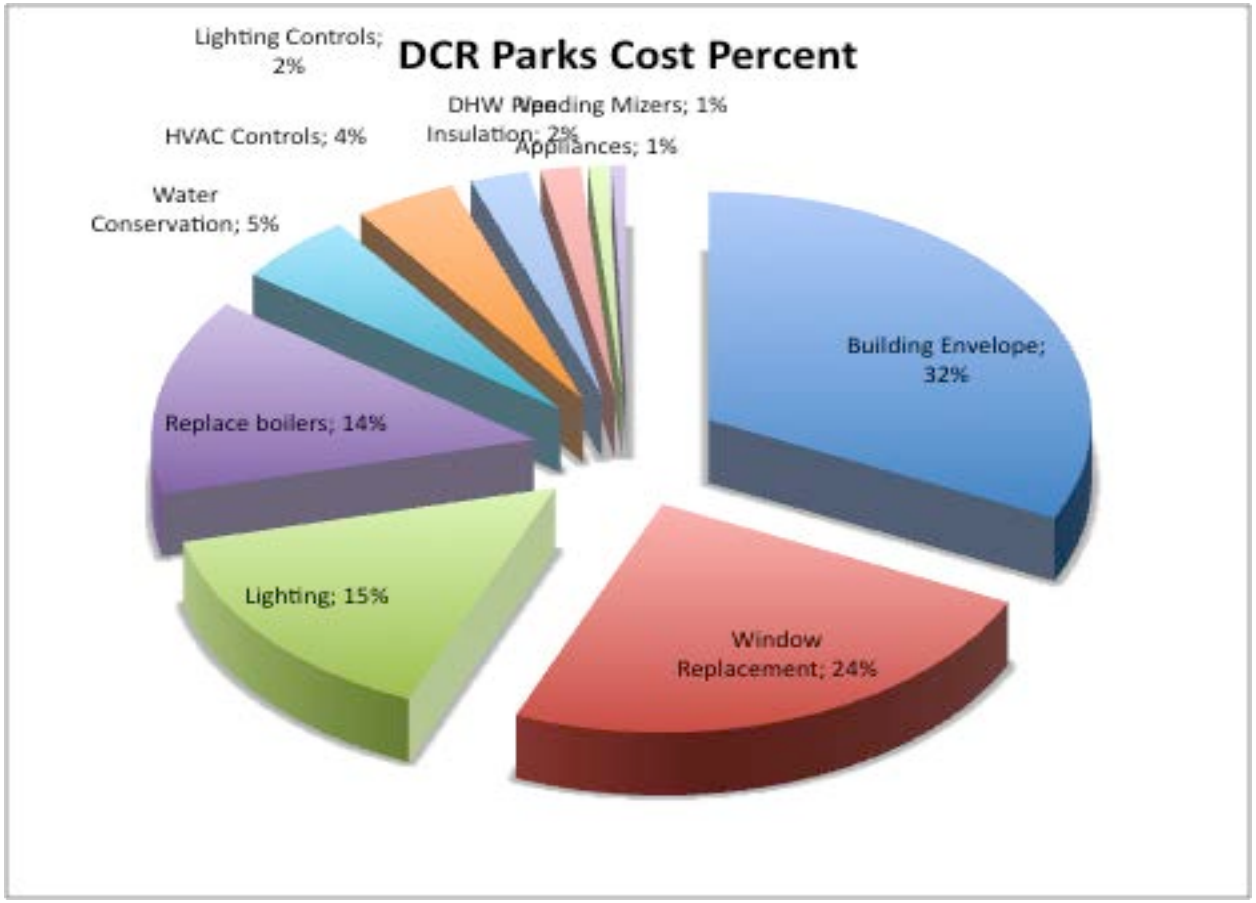
We have identified an investment of $137,000 for the following energy conservation measures (ECMs).



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DCR Simple Fix Energy Audits

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COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

The proposed ECMs are expected to save $35,400 in annual energy costs and produce a simple payback of 3.9 years.

DCR Parks Summary		Annual Energy Savings			Annual	Simple Payback (years)
		Electrical	Fuels	Water	savings	
Energy Conservation Measure	Total Cost of Upgrades	kWh		Water CCF	Total $	
Lighting	$ 20,395	46,286	-	-	$ 6,526	3.1
Lighting Controls	$ 3,375	6,159	-	-	$ 885	3.8
HVAC Controls	$ 5,870	15,352	1,075	-	$ 5,439	1.1
Building Envelope	$ 43,781	10,152	3,068	-	$ 10,711	4.1
Window Replacement	$ 33,000	-	1,206	-	$ 4,113	8.0
DHW Pipe Insulation	$ 2,312	1,115	66	-	$ 364	6.4
Water Conservation	$ 6,860	-	-	147	$ 2,049	3.3
Replace boilers	$ 19,000	-	1,517	-	$ 2,806	6.8
Appliances	$ 1,100	2,644	40	-	$ 528	2.1
Vending Mizers	$ 825	13,245	-	-	$ 1,987	0.4
Totals	**$ 136,518**	**94,954**	**6,973**	**147**	**$ 35,407**	**3.9**

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ACCELERATED ENERGY PROGRAM
COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

Thank you!

We greatly appreciate your time and guidance.

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