

The Commonwealth of Massachusetts
Accelerated Energy Program
2012-2015



Governor Deval Patrick
Secretary Jay Gonzalez
Commissioner Carole Cornelison

Welcome / Introductions

Carole Cornelison

Division of Capital Asset Management



The Commonwealth of Massachusetts
Accelerated Energy Program
2012-2015



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AEP Overview

Hope Davis

Division of Capital Asset Management



The Commonwealth of Massachusetts
Accelerated Energy Program
2012-2015



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Overview Briefing – March 2012



Division of Capital Asset Management



Introduction

Progress to date

Accelerated Energy Program (AEP) Overview

Program Goals, Objectives and Scope

Leadership Steering Committee

Implementation Plans

Outreach and Communication

Tracking and Reporting

Points of Contact

Since 2000, DCAM's Energy and Water Program has retrofitted, or is in the process of retrofiting, approximately 45% of the Commonwealth's facilities on a square foot basis.

Results to date include:

- Advertisement of 72 energy efficiency and renewable energy projects at a cost of \$350 million that achieved an annual savings of \$32 million.
- Installation of 13 MWs of renewable power sources, including co-generation, wind and solar.

Since Governor Patrick signed E.O. 484 in 2007, DCAM and DOER have made tremendous progress helping agencies comply with the targets.

- Reduce energy consumption as measured by kBtu per sq. ft.; 20% by 2012, 35% by 2020.
- Increase the use of renewable energy resources; 15% by 2012, 30% by 2020.
- Reduce Greenhouse Gas emissions; 25% by 2012, 40% by 2020.
- Reduce potable water usage from 2006 levels by 10% by 2012 and 15% by 2020.

In addition to the above statewide goals, E.O. 484 specifically directs DCAM to:

- Retrofit every facility over 100,000 sq. ft.
- Retro-commission every facility over 50,000 sq. ft.

2011 National Recognition

#1 in Energy Efficiency

The American Council for an Energy Efficient Economy (ACEEE) ranked Massachusetts number one in the nation for energy efficiency.



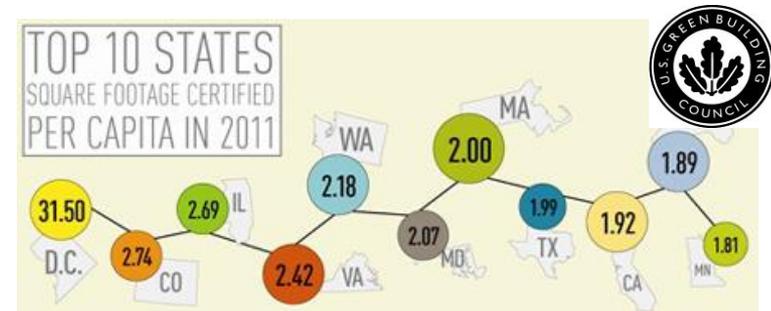
#3 in Energy Performance Contracting

The Energy Services Coalition (ESC) ranked Massachusetts third in the most performance contracting dollars spent per capita.



#7 in LEED Certified Building Space

The US Green Building Council (USGBC) ranked Massachusetts in the top 10 states for the most square feet of space to earn LEED certification per capita.

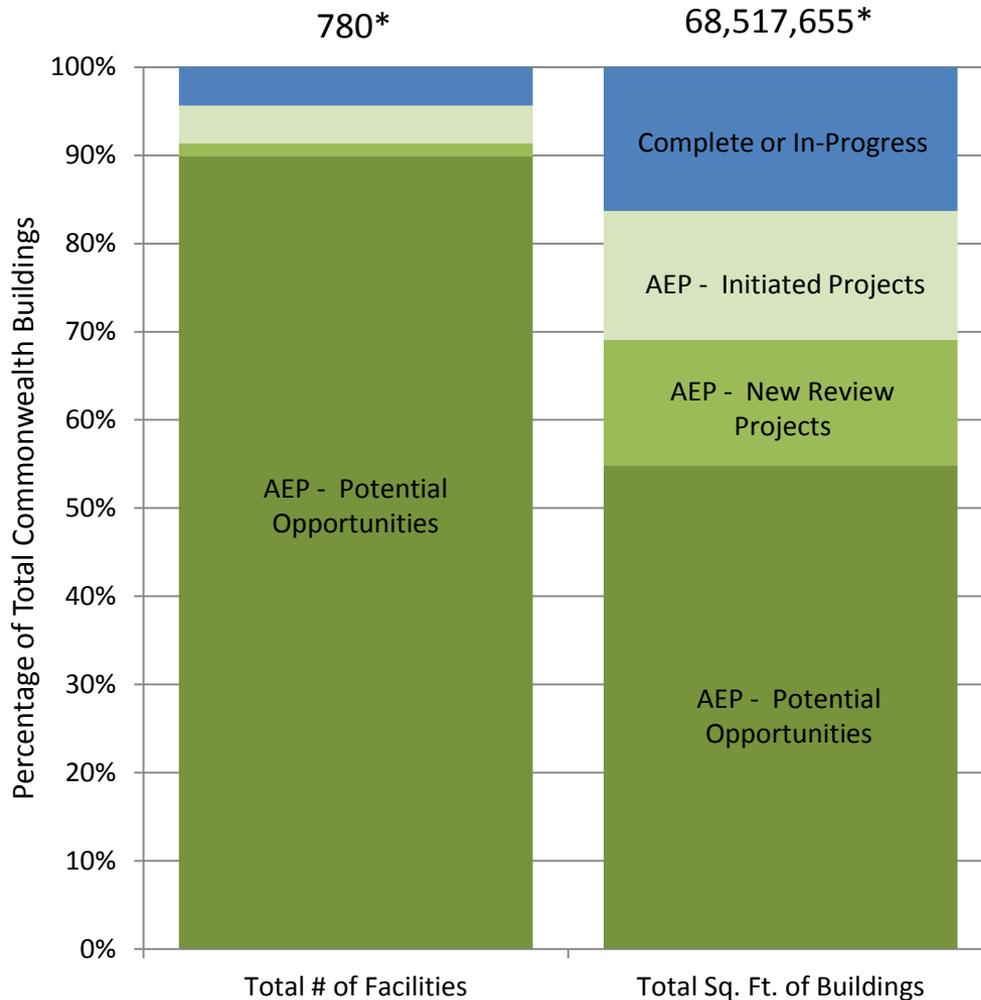


In December 2011, the Accelerated Energy Program was established to enable DCAM to accelerate and expand upon its existing Program to include all facilities large and small in the Commonwealth that have not been retrofitted by DCAM since 2000.

The Goals of the 3-year Program include:

- To expand the energy program to touch / green every facility over three years while meeting long term E.O. 484 targets.
- To communicate more effectively with employees and the public to inform and encourage participation.
- To ensure that the Commonwealth maintains its top national energy efficiency ranking through innovative and economical energy solutions.
- To employ continuous commissioning to improve facility Operation & Maintenance.
- To create sustainable job opportunities across the Commonwealth as a result of this initiative.

AEP Facilities



DCAM has retrofitted or is in the process of retrofitting approximately 45% of the Commonwealth’s facilities on a square foot basis.

The Accelerated Energy Program includes all facilities where energy work has not been done (“Potential Opportunities”).

Additional facilities will be “touched” to review new potential projects and to complete work that has already been initiated.

* Defined as buildings in use and active

AEP Size and Scope – Base

Commonwealth facilities that haven't been retrofitted -
“Potential Opportunities”

- 700 facilities including 4,031 buildings
- 36.6 million square feet

Estimated project investment of \$350 million from public and private partnership and other sources of funds

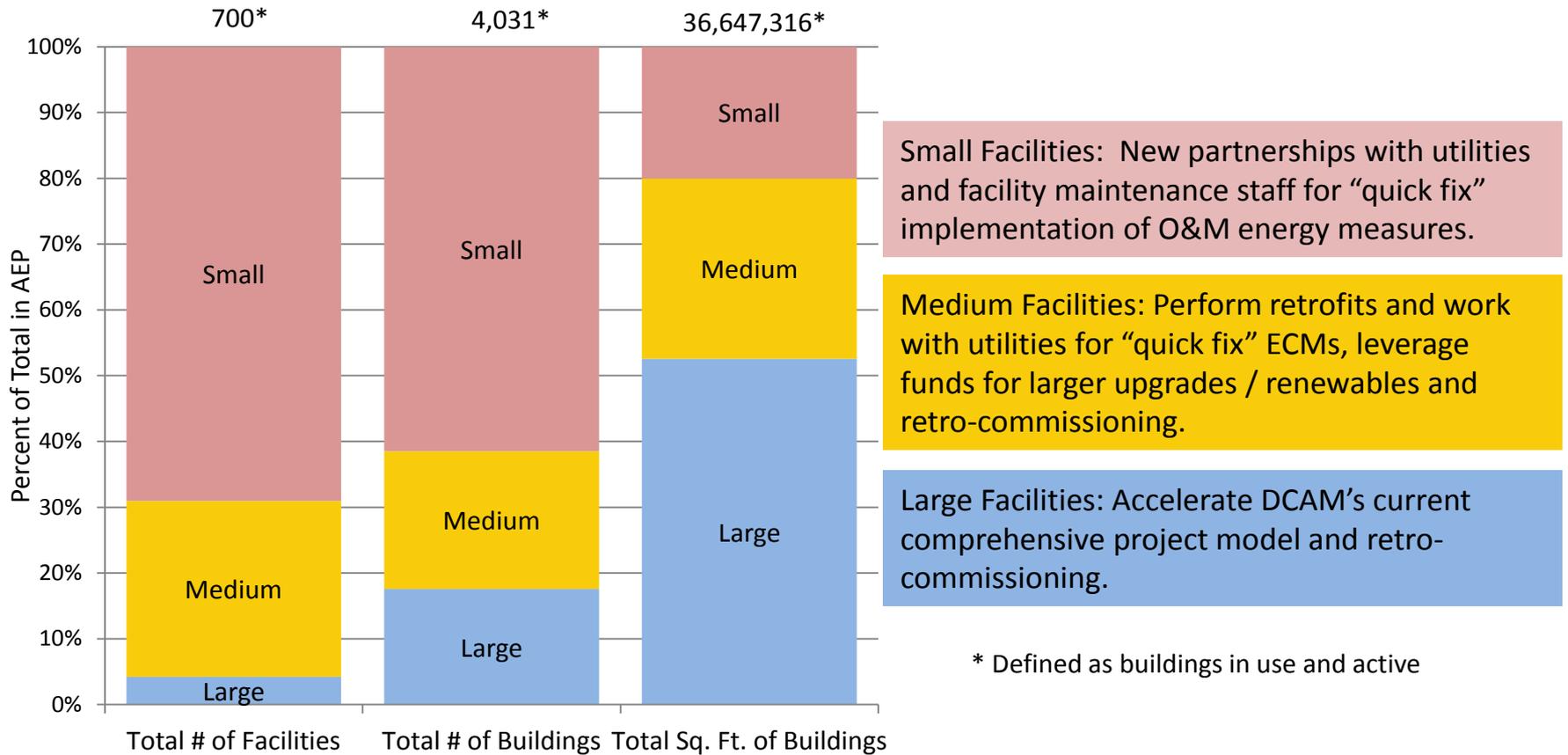
- Utility funding
- Special G.O. Bonds for energy project
- Clean Energy Investment Program (CEIP) bond funds
- Revolving Loan Fund
- Agencies' Operating Budget Funds
- Renewable Energy Certificates (RECs)
- Grants and other resources

Estimated annual savings of \$35 million



Implementation Plans

Implementation plans are being developed to address the 36.6 million square feet of untouched buildings (“Potential Opportunities”) based on their size.



AEP – Additional Project Groups

1. “Initiated” Projects. Projects that were in the study or procurement phases prior to commencing the AEP will be accelerated.

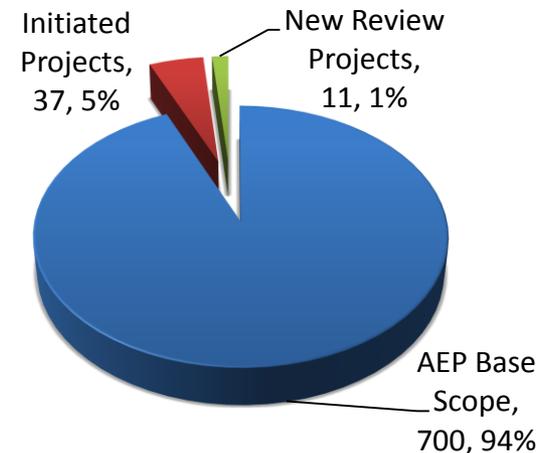
- 37 facilities comprising over 600 buildings
- 17.2 million square feet
- Estimated project investment of \$190 million from public and private partnership and other sources of funds
- Estimated annual savings of \$17 million



2. “New Review” Projects. Energy audits will be conducted at Commonwealth facilities that were retrofitted between 2000-2007, to determine if new opportunities are applicable.

- 11 facilities comprising over 250 buildings
- 3.9 million square feet
- Estimated cost and savings TBD

AEP Scope - Total Facilities



Leadership Steering Committee

Meets every quarter

Comprised of:

- DCAM as lead agency for the Accelerated Energy Program
- DOER as lead agency for energy policy and E.O. 484
- Agencies with the most buildings in the Program (Environmental Affairs, MassDOT, Health and Human Services, Higher Education)
- Utilities that supply the most energy in the Program (National Grid, NSTAR and WMECO)
- All agencies and utilities are welcome to participate

Chartered to:

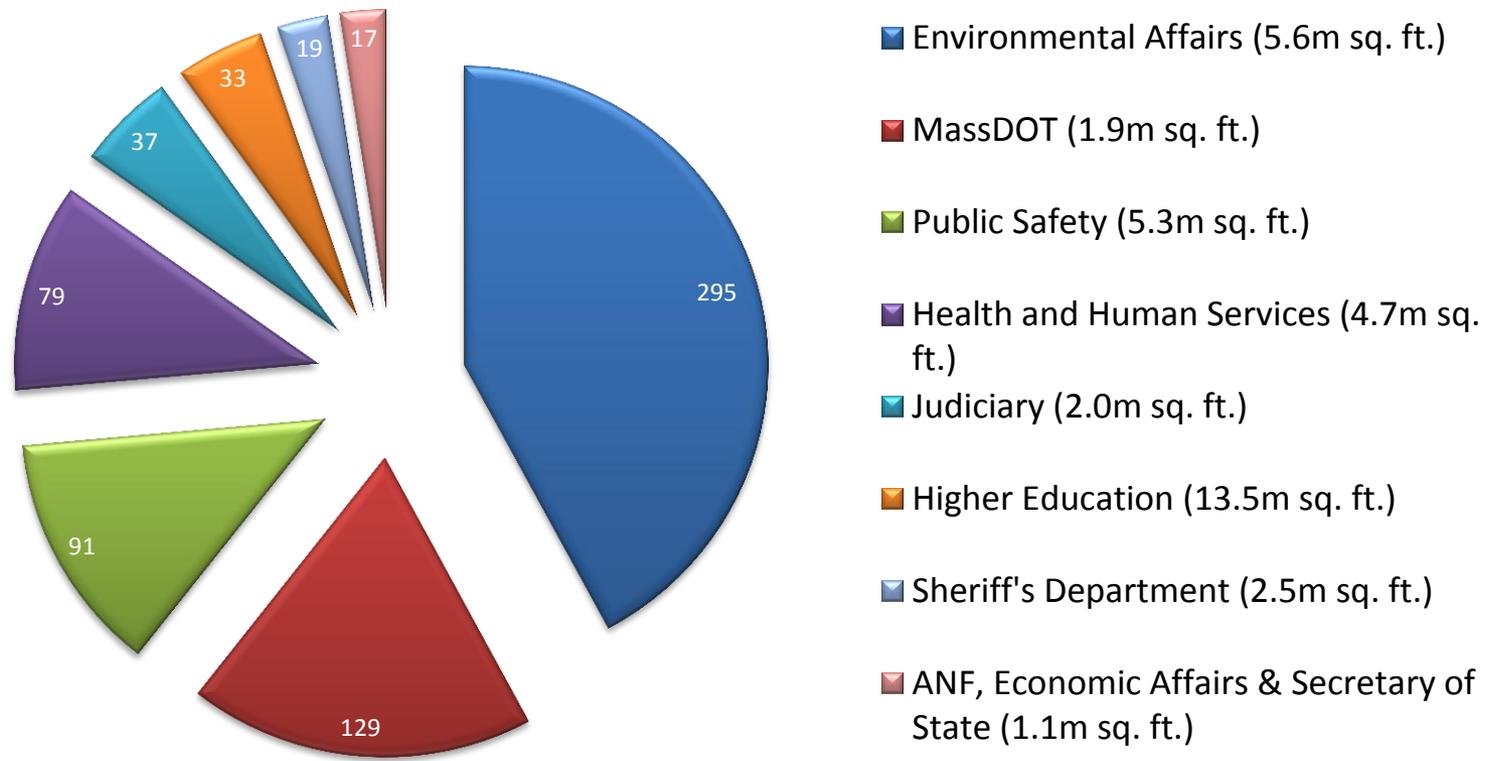
- Provide strong leadership and creative solutions
- Oversee AEP to insure accountability and transparency
- Create and direct additional committees and working groups as needed



DCAM and DOER will work with each agency to implement energy projects.

AEP Facilities by Program Area

Total = 700 Facilities



Utility Programs for small facilities

- Green Communities Act for when work is less than \$100k

Energy Conservation Programs

- Operations & Maintenance Staff and Building Occupant Training and Outreach

Comprehensive Energy Efficiency Projects

- Performance Contracts
- Energy Design Build

Renewable Energy Projects

- On-site Renewables (solar, wind, biomass, etc)

New Building Construction Programs

- LEED certification
- Ultra-low design and “neutral energy”

All innovative approaches are being considered



Comprehensive Energy Efficiency Project

(example)

The Commonwealth of Massachusetts
Accelerated Energy Program

MCI Bridgewater Comprehensive Energy Efficiency Project



Performance Contract

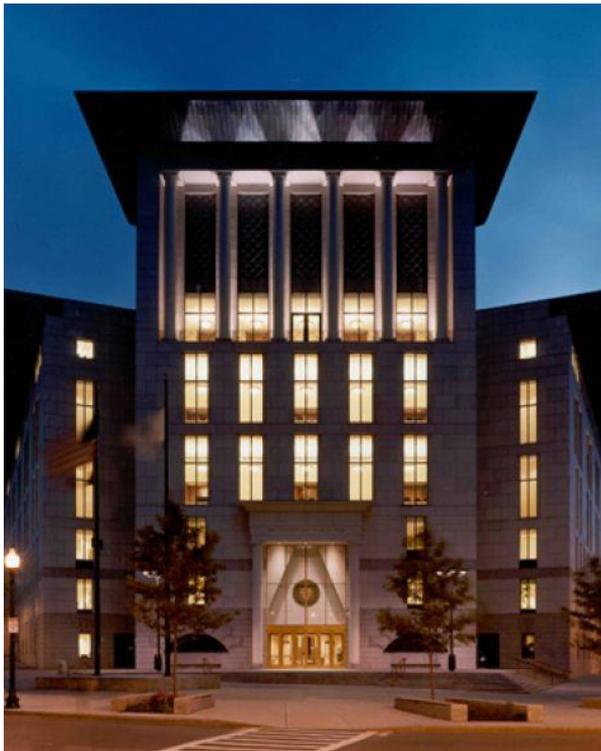
\$16.8 million in project costs

\$1.4 million estimated annual savings

Several Efficiency Measures:

- Lighting and controls, Plug load controllers, Motors upgrade
- Installation of Energy Management System, and metering
- Steam traps, Water conservation
- Installation of new cogeneration equipment for energy and water conservation
- Thermal pane window installation

Senator Edward Brooke Courthouse



Retro-commissioning is a process of “tuning up” Energy Management and HVAC systems of complex buildings to achieve energy savings without major retrofits.

Brooke Courthouse:

425,300 square feet

\$1.5 million baseline energy cost

26.8% energy cost savings

Utility Managed Project

(example)

Commonwealth of Massachusetts - Office of Chief Medical Examiner



NSTAR Municipal Program – Custom Energy Efficiency Project

\$24,000 project cost

\$14,500 incentives

\$ 8,000 estimated annual savings

Efficiency Measure:

- Lighting and occupancy controls

AEP Outreach and Communication

Collaboration with Associations and Leadership Councils

- Massachusetts Facility Management Association (MAFMA)
- Leadership By Example (LBE) Council
- Commonwealth Facilities Advisory Council

Outreach to Facility Maintenance Staff

- Alternative delivery methods such as “train the trainer”, “lunch and learn workshops” from suppliers, and mentoring programs
- Focus on certifications, distribution of specs and guidelines, training on EEMS and participation in MAFMA University classes



Outreach to Building Occupants

- Promote behavior modification models and practices

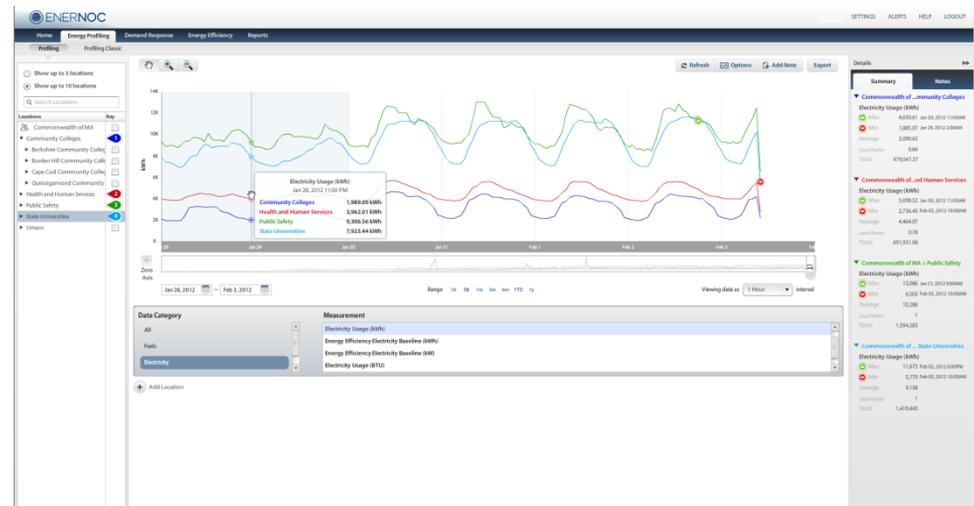
Communication to All Employees and the Public

- Program website, public meetings, social networks and news media

DCAM and DOER will develop a comprehensive, web-based dashboard tracking and reporting system for the Accelerated Energy Program.

Sample Metrics:

- Number of facilities/buildings and square footage addressed
- Total energy reduction
- Total energy dollars saved/avoided
- Total renewable energy generated and purchased
- Total dollars invested
- Number of Commonwealth staff trained in energy conservation
- Progress of each project
- Carbon dioxide emissions
- Number of jobs created



More Information on **DCAM**

Web: <http://www.mass.gov/dcam>

Email: info.dcam@state.ma.us

Phone: 617-727-4050

More Information on **Accelerated Energy Program**

Web: *Coming Soon!*

Contact: *Jenna Ide, Deputy Director*

Email: jenna.ide@state.ma.us

Phone: 617-727-4030 x487

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Implementation Committee and Working Group

Introduction

Jenna Ide

Division of Capital Asset Management



We plan to “green” **700** facilities in the next **700** working days...

So Thank You for Participating.

We Want Your Help!

The “Potential Opportunity” Facilities are currently segmented into the following groups for implementation:

Evaluated – Not Applicable	57 Facilities encompassing 160 buildings
Quick Fix	444 Facilities encompassing 2,402 buildings
Audit – Whole Building Analysis	152 Facilities encompassing 586 buildings
Audit – Retro-Commission	20 Facilities encompassing 231 buildings
Comprehensive Retrofit	27 Facilities encompassing 652 buildings
Total	700 facilities encompassing 4,031 buildings

The Implementation Committee is responsible for the following:

- Implementation Planning
- Project Oversight
- Center of Excellence
- Standards and Process Creation
- Centralized Tracking and Reporting
- Performance Metrics
- Proactive Communication
- Resource Planning

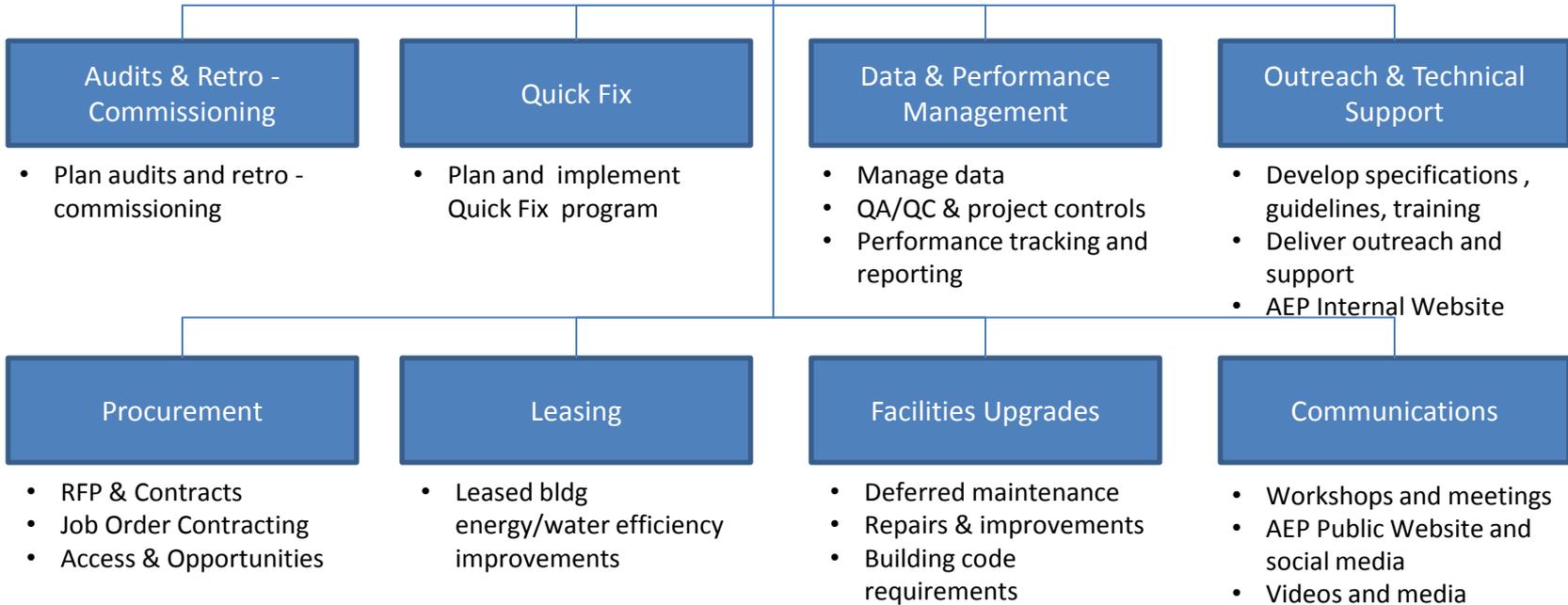
Implementation Committee

Participants

- DCAM
- DOER LBE
- CFAC
- MassDOT/ABP
- Agencies
- Utility Companies



- Align DCAM, DOER, agencies, facility managers and other stakeholders.
- Oversee Plan and insure accountability and transparency.
- Create and direct committees as needed.
- Responsible for successfully planning and executing all aspects of the AEP to achieve the goals and performance targets.



Working Group Lead: Mike Reinhardt

Goals & Objectives:

- Determine the scope of all audit groups and plan grouping of audits and retro-commissioning for all applicable facilities
 - Quick Fix
 - Whole Building Analysis
 - Retro-Commissioning
 - Comprehensive
 - “New Review”
- Advise on approaches for managing audits (bundling, data flow, etc.)
- Coordinate the use of existing utility programs for performing audits

Working Group Lead: Jim Freeley

Goals & Objectives:

- Quick Fix are facilities that could be retrofitted with simple measures in a short timeframe (lighting, lighting controls, etc.)
- Plan and implement the “greening” of all facilities in the Quick Fix group
- Keep Quick Fix energy projects within budget and on schedule
- Determine various project implementation methods (utility programs, direct install, maintenance)
- Advise on approaches for managing Quick Fix projects (bundling, data flow, etc.)

Working Group Lead: Ryan Bird & Dave Lewis

Goals & Objectives:

- Implementation Planning
 - Collect and update all relevant data
 - Create a master implementation schedule
 - Develop estimated energy costs and savings
- Performance Management
 - Create an integrated dashboard for all relevant data sources
 - Define and track performance goals and metrics
 - Quality Assurance / Quality Control
 - Create a web-based data reporting and tracking tool

Working Group Lead: Krista Lillis & Tom Tagan

Group Goals & Objectives:

- Training & Workshops
 - Create “Center of Excellence”
 - Bring together Agency energy leaders and the energy/utility managers
 - Educate facility maintenance staff
 - Develop materials and programs that facilitate and increase energy awareness

- Guidelines & Specifications
 - Establish source for key directives and reference documents
 - Monitor emerging energy technologies
 - Establish minimum standards and policy

Working Group Lead: Tony Dover & Tony Ransom

Group Goals & Objectives:

- Develop procurement process for implementation of Quick Fix projects and job order contracting
- Develop an internal process for audits and quick-fixes
- Establish funding sources and payment mechanisms
- Streamline the existing procurement process (LEAN)
- Advise other groups on how to incorporate or increase access and opportunities for M/WBE's and small contractors

Working Group Lead: Stacey Fox

Group Goals & Objectives:

- Collect, analyze, and update all relevant leasing data
- Determine contract variation for various types of leases
- Advise on “greening” opportunities for leased facilities
- Prioritize leased facilities for implementation

Working Group Lead: John Crisley & Vin Cirigliano

Group Goals & Objectives:

- Identify how deferred maintenance or other funds can be used for energy upgrade projects to address code issues
- Educate AEP program managers on deferred maintenance opportunities
- Create a road map for interpreting MA state building codes
- Advise on categories of codes most likely to impact energy projects

Working Group Lead: Sandra Duran & Chris McIntosh

Group Goals & Objectives:

- Promote the AEP's activities, benefits, innovations and progress through a public website, events, and education materials
- Process feedback from internal and external stakeholders
- Build the AEP brand equity to develop an attitude of openness and inclusivity
- Create visual tools for representing Program data and progress to internal and external audiences
- Maintain a positive communication flow among all stakeholders

Initial 3-Year Planning

2012

2013

2014

Start of AEP
Jan 1, 2012

End of AEP
Dec 31, 2014

Implementation

Define Program and Performance Metrics

Start Comprehensive Projects

All Comprehensive Projects Started

Start Quick Fix, Retro-Commissioning and WBA Audits

Launch "Center of Excellence"

"New Review" Audits Started

Kick-off Implementation and Leadership Committees

On Going Quick Fix and Retro-Commissioning

All Projects Completed or In Construction

Finalize LEAN Procurement Process

All "Initiated" Projects in Construction

Launch Internal Data Tracking and Public Website

Initial 2012 Planning

The Commonwealth of Massachusetts

Accelerated Energy Program

Q1 2012

Q2 2012

Q3 2012

Q4 2012

Leadership Steering Committee	1 st Meeting – March 16	Meeting & Quarterly Report	Meeting & Quarterly Report	Meeting & Quarterly Report
Quick Fix	DOER/Utility Meeting Held	Finalize Utility Program w/ utilities	Start Construction	On Going
Audits	Advise on First Audit Groupings	Quick Fix Audits (Start)	RCx & WBA Audits (Start)	Comprehensive Audits (Start)
Data & Performance Mgmt	Meeting since Jan. Define program finalize Metrics	QA/QC, Project Controls & Start database work	Launch Internal Tracking	On Going Tracking & Reporting
Outreach & Tech Support	Research & Define Program	Center of Excellence Concept Developed	On Going Outreach	Start Training
Procurement	Finalize LEAN scope of work	Quick Fix Procurement (MOA) & LEAN	M/WBE Outreach	Job order contracting
Leasing	Collect data	Develop approach	Finalize approach	Start implementing
Facility Upgrades	Develop Matrix	Develop advisory opinion	Outreach & research funding	On Going
Communications	Communications Plan	Kick-off events Press outreach	Launch Public Website	Awards Ongoing outreach

Break Out into Working Groups

- Identify Working Group Members
- Review Goals & Objectives
- Review Performance Metrics
- Define Work streams & Deliverables
- Brainstorm next steps for Implementation
- Report Out (during lunch)

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Working Group Breakout

Report on:

- Changes and notes on goals and objectives
- Changes and notes on performance metrics
- Next steps (including next meeting)
- 3-5 minutes per Working Group

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Final Q&A and Wrap-up

Thank you!

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