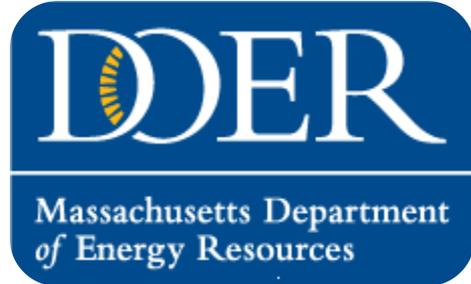


Creating A Cleaner Energy Future For the Commonwealth



PUBLIC LEADERSHIP,
STEWARDSHIP, COMMITMENT

Leading by Example Council Meeting

July 14, 2015

Agenda

- Welcome and Introductions
- State Policy Updates
- XL Hybrid Retrofit Technology Presenter
- LBE Grants and Initiatives
- LBE Updates
- EcoBuilding Bargains Overview & Tour



Massachusetts Department
of Energy Resources

State Policy Updates

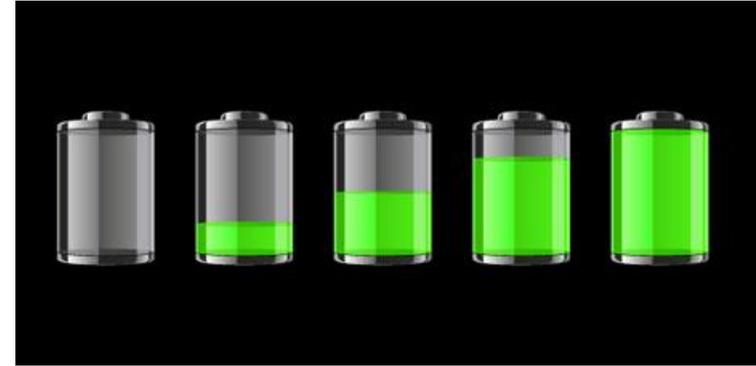
Creating A Cleaner Energy Future For the Commonwealth

DOER

Massachusetts Department
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Energy Storage Initiative (ESI)

- DOER announced \$10 million commitment for ESI at end of May
- Partnership with MassCEC
- Goals of ESI include advancing and accelerating energy storage market and deployments in MA
- A two-part study will:
 - Analyze opportunities to support local ES companies
 - Develop policy options to encourage ES deployment



Mass Solar Loan Program

- Allow homeowners to access low-interest loans for purchase and install of solar electric systems
- Loan terms may vary, but homeowners can expect:
 - Interest rate of 3% or lower
 - Loans between \$3,000 and \$35,000
 - Loan term up to 10 years, if \$15,000 or more
- MassCEC intends to begin accepting applications in Summer 2015

masscec.com/programs/mass-solar-loan



MASSACHUSETTS
CLEAN ENERGY
CENTER

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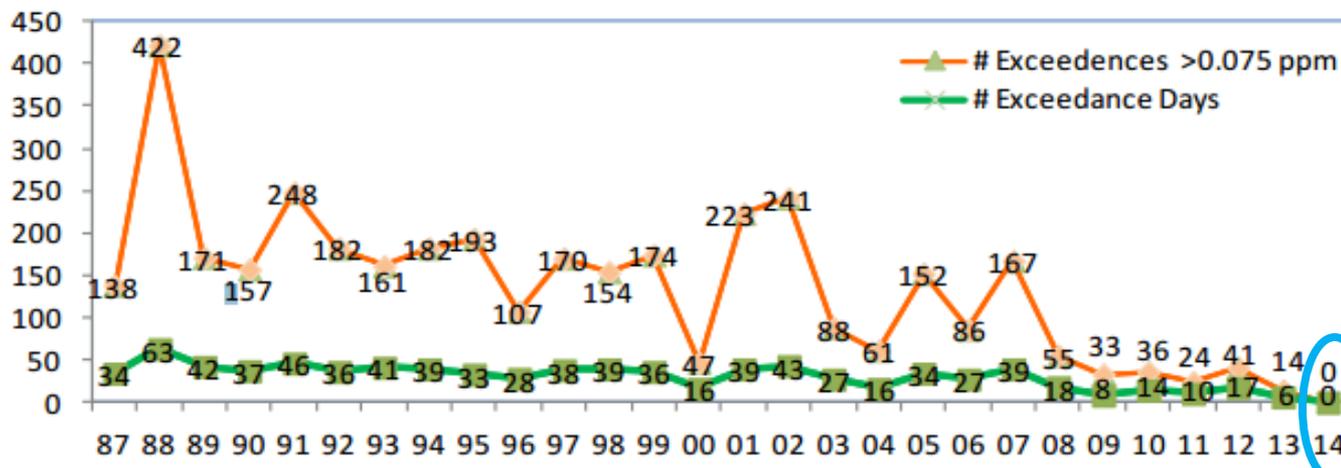
2014 Massachusetts Air Quality Report

- Annual report released by MassDEP in June 2015
- 2014 is first year with no days when ozone standard of 0.075 ppm was exceeded at any monitor in MA since measuring began in 1987
- [Download Report](#)

8-hr Ozone Exceedance Days and Total Exceedances 1987-2014

8-hour standard = 0.075 ppm

Years 1987-2007 show what exceedances would have been with a 0.075 ppm 8-hour standard



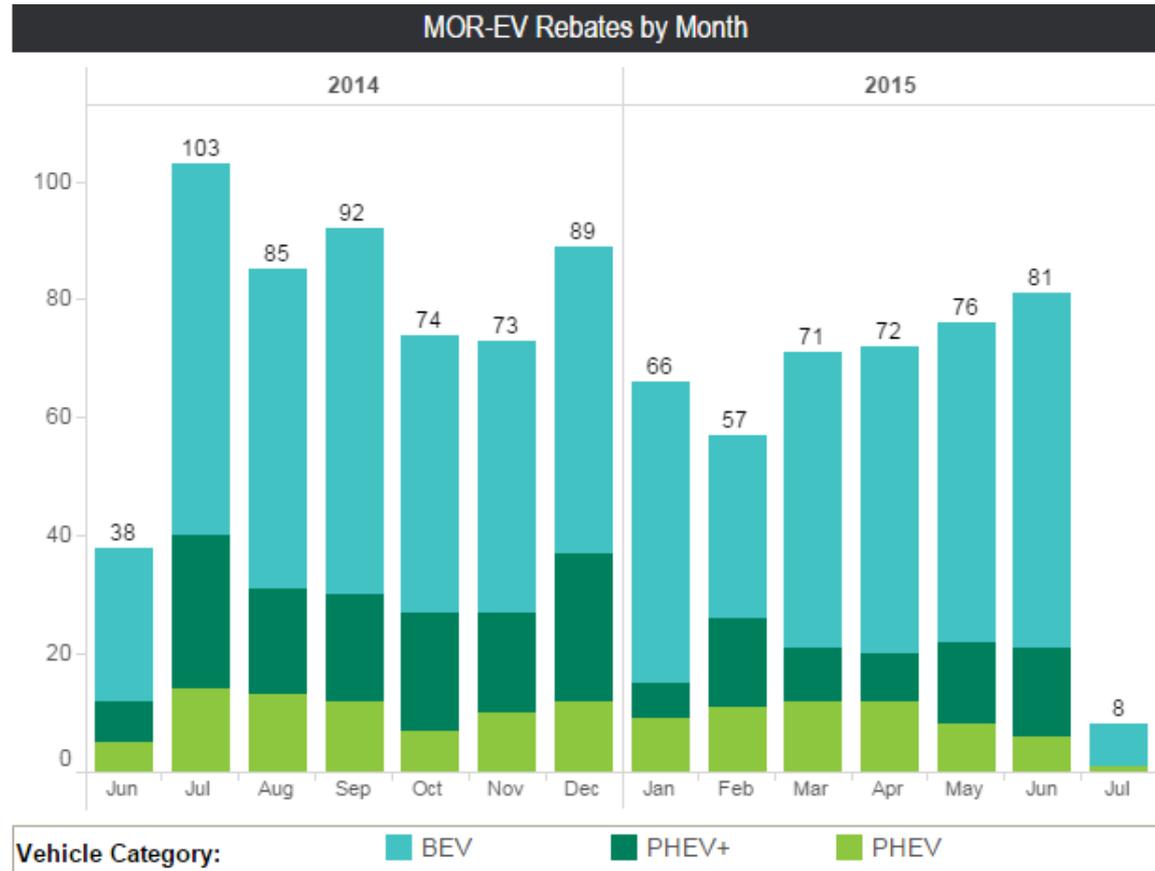
MOR-EV Updates



MOR-EV

Massachusetts Offers Rebates for Electric Vehicles

- \$2.3 million in rebates for EVs and Plug-ins
- \$1.3 million remaining
- 985 rebates reserved & issued
- 66% of drivers have or plan to install a Level 2 Charger



As of 7/2/15

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New MassDEP Offices

- Two new offices:
 1. Permit and Regulatory Ombudsman
 2. Municipal Partnerships
- Agency point-of-contact for citizens and proponents of large and complex projects, including those that require permits and approval/review by more than one bureau or regional office
- Single point-of-contact for municipalities and local officials, legislators and other agencies
- [mass.gov/dep/permitting](https://www.mass.gov/dep/permitting)

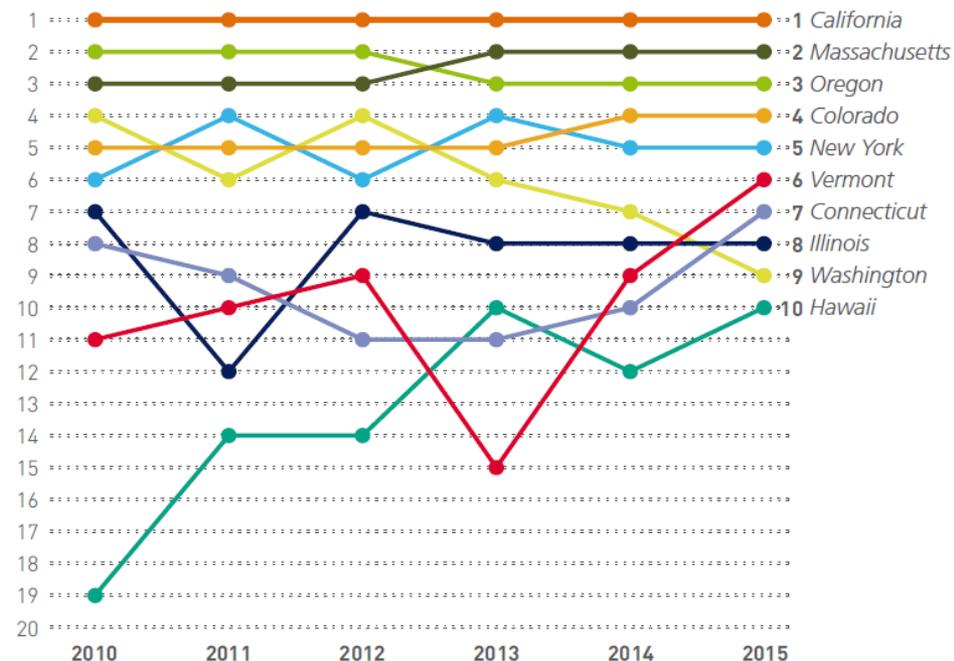


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2015 US Clean Tech Leadership Index

- MA ranked #2 overall for 3rd straight year
- MA ranked #1 in Policy category
- MA in Top 10 for technology, clean energy capital investment, and clean energy patents
- [Download 2015 Report](#)

2015 TOP 10 STATES (INCLUDING HISTORICAL RANKINGS)



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Clean Energy Stats

Installed Capacity for Solar, Wind & CHP

852 MW



107 MW



478 MW



Creating a Cleaner Energy Future

As of June 15, 2015

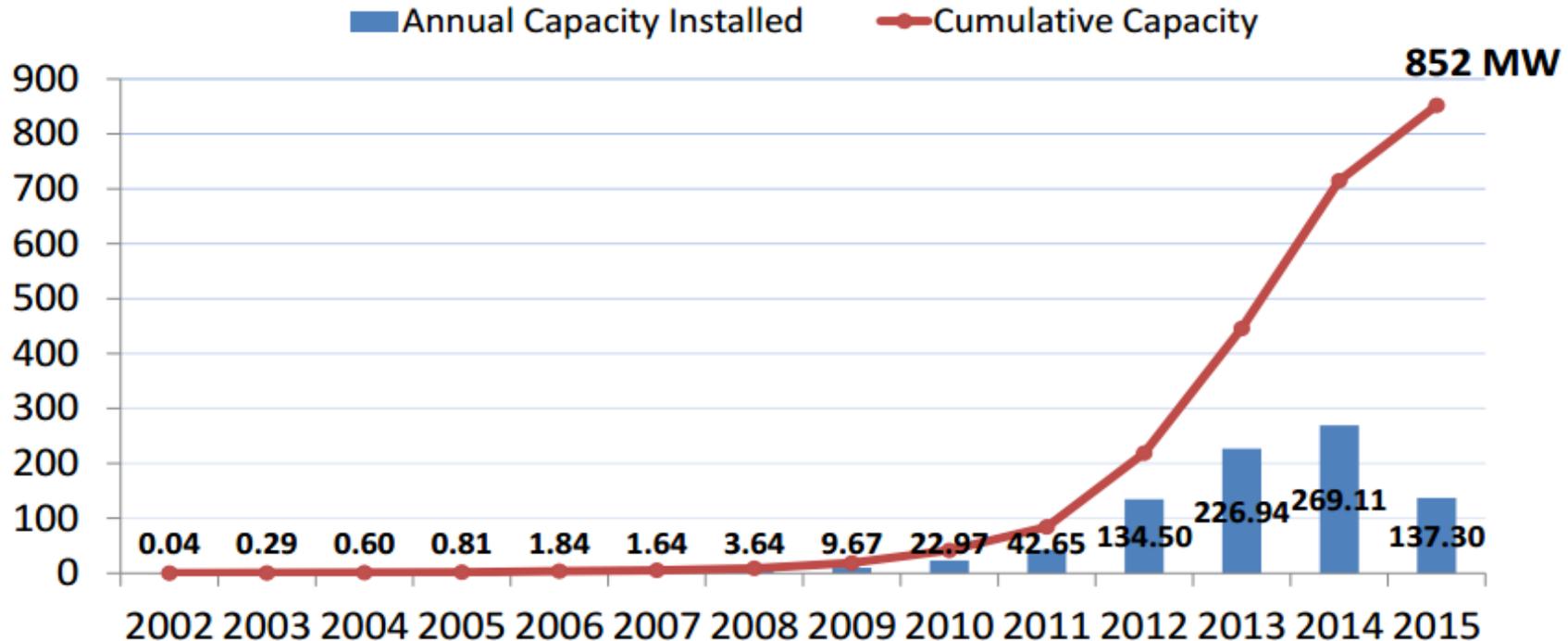
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Clean Energy Stats

Installed Solar Capacity in Massachusetts



- As of June 15, 2015
- Over halfway to 1600 MW goal
- Across 27,340 projects



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Upcoming Events

- **Friday August 14 at 3:30pm at Bristol CC in Fall River**
- BCC 3.2 MW Solar Canopy Ribbon Cutting event with state, campus, and industry officials
- Project details:
 - Power Purchase Agreement, no state funds used for project
 - Will save \$1.75 million in electricity costs over 20 years



Upcoming Events

- EPA Webinar: **Setting Goals and Developing a Water Management Plan**
 - [8/27/15, 2:00-4:00pm](#)
- CURC Webinar: **Learning from Failure: How to Reboot and Learn from Operational Bloopers**
 - [8/13/15, 1:00-2:30pm](#)



XL Hybrid Retrofit Technology Presenter

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LBE Grants and Initiatives

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Solar Canopy Grant Program

Grant opportunity for solar PV at parking lots, garage roofs, and pedestrian walkways on state owned land

- \$0.75/ watt up to \$600,000 per project for systems owned & operated by the Commonwealth
- \$0.50/ watt up to \$500,000 per project for systems owned by a third party
- Projects over 200 kW capacity
- All procurement options eligible
- Some on-site state consumption required
- Require minimum # of EV charging stations depending on array size
- Posted on LBE website



Renewable Thermal Grant Program

Grant opportunity for renewable thermal feasibility studies and projects having difficulty moving forward because of economic constraints

- Eligible Technologies: Biomass, Solar thermal, Air Source Heat Pumps, Ground Source Heat Pumps, Water Source Heat Pumps, CHP
- DOER expects to award feasibility grants of between \$2,500 and \$15,000 per site, and project grants of between \$50,000 and \$500,000 per site
- \$2 million still available
- Feasibility study grant and project applications due: 12/31/ 15
- Posted on LBE website



LBE Grants Status

Grant Opportunity	Awarded (\$)	Applied (\$)	Potential Remaining (\$)
Solar Canopy Grants	\$246,000	\$600,000	\$704,000
Renewable Thermal Feasibility & Project Grants	\$864,654	\$50-100k	≈\$1,602,744



Recent Applications include:

- Biomass at Blue Hill Reservation
- Solar Canopy at Roxbury Community College

NEW GRANT PROGRAM: Targeting Large Fuel Oil Consumers

Grant opportunity for large fuel oil consumers

- Complement to current RE thermal grant that targets larger users
- Funds toward comprehensive feasibility announcements and as applicable installations
- Biomass, Solar thermal, Air Source Heat Pumps, Ground Source Heat Pumps, Water Source Heat Pumps, CHP
- Application in development



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DCR Street Light Retrofits

- LED Retrofit Phase I
 - Includes 2,063 outdoor lights
 - Mostly cobraheads/shoeboxes
 - Installation 88% completed (1807 LEDs installed, 256 remaining as of June 12)
- LED Retrofit Phase II
 - Will include an additional 2,000 outdoor lights
 - More decorative lights
 - To be completed by December 31, 2015



Solar Canopy Feasibility Studies

- Inventory of over 100 state-owned parking lots through Solar Canopy Survey
- Targeted list developed:
 - 22 state sites
 - 11 agencies/campuses
- DOER-funded feasibility study:
 - RFQ drafted and currently in legal review
 - Project Kick-off projected in August
 - Project completion goal in November



Revolving Loan Fund for State Projects: CoFFEE

CoFFEE Round 1 Disbursements

Site	Technology	Amount Financed	Incentives Leveraged	Projected Ann. Cost Savings	Payback (w/incentives)
Lemuel Shattuck Hospital	VFDs and motor upgrades	\$42,228	\$51,150	\$25,550	1.65 years
DEP Wall Station	Lighting and outdoor air controls	\$13,000	TBD	\$25,290	< 1 year
Greenfield Community College	LED lighting	\$22,155	\$40,900	\$14,488	1.5 yr
Hampden County Sheriff	LED outdoor lighting	\$50,000	\$99,500	\$27,196	3.6
Former National Guard HQ	Transformer upgrades	\$68,830	\$27,955	\$22,364	3 yrs

Round 2 opens in Fall 2015

Questions?

www.mass.gov/dcamm/coffee

Ryan Harold (ryan.harold@state.ma.us)

Creating A Cleaner Energy Future For the Commonwealth



Massachusetts Department
of Energy Resources

LBE Updates

Creating A Cleaner Energy Future For the Commonwealth



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Sustainability Challenge

- Seeking beta testers
- Challenges state facilities and campuses to implement no and low cost changes to reduce the environmental impacts of state operations to promote sustainable practices
- 10 categories include:
 - Energy conservation
 - Recycling/waste reduction
 - Alt. transportation

Email: trey.gowdy@state.ma.us

Massachusetts Department of Energy Resources

MASSACHUSETTS LEADING BY EXAMPLE PROGRAM

Massachusetts Leading By Example
2015 Sustainability Challenge

Out of a possible 100 points, you have scored a total of:

92

points

Based on this score, you have received **3 TREES** out of 3

TREE= Tracking & Rating Environmental Efforts

Excellent! Based on your score, you have earned the highest possible rating, Three TREES. Your organization's commitment to sustainability is evident, and the Leading By Example Program commends you for your success. Your Sustainability Challenge score is a valuable metric you should use to track the ongoing progress of your environmental initiatives. LBE invites you share your success story with your stakeholders. Congratulations again!

Challenge Instructions: Please select your answer from the dropdown provided.

Challenge #1: Implement lighting reduction strategies (maximum of 12 points)

1	Develop and execute an outreach strategy to energy users to turn off all lights when not in use or when not necessary (i.e. when daylighting is sufficient)	Answer options: <input type="button" value="Select"/>
2	Hang posters reminding users to turn off lights when rooms are not in use	<input type="button" value="Select"/>
3	Establish a policy to purchase more efficient lighting, eliminating incandescent bulbs (included in EO484)	<input type="button" value="Select"/>
4	Replace all existing incandescent bulbs with more efficient EnergyStar rated Compact fluorescent Lamps (CFL) or Light Emitting Diodes (LED), using statewide contract FAC76 or some other approved procurement process	<input type="button" value="Select"/>
5	Distribute more efficient replacement bulbs to staff, faculty, students, etc. with their own task lighting	<input type="button" value="Select"/>
6	Work with utilities and/or DCAMM to install motion sensor lighting controls for rooms with intermittent use (e.g. conference rooms, storage areas, bathrooms, individual offices, etc.)	<input type="button" value="Select"/>

Fact: Energy Star rated light bulbs use about 75% less energy than a traditional incandescent bulb and last at least 6 times longer.

Resources:
[Comm-PASS contract FAC76: Maintenance, Repair and Operations \(MRO\) Products, Supplies and Equipment](#)

Challenge #2: Reduce plug loads (e.g. any power usage not hardwired into building) (maximum of 8 points)

1	Install/distribute power strips for energy users to plug-in personal devices (i.e. cell phones, tablets, laptops). Encourage strips to be turned off at the end of the day	Answer options: <input type="button" value="Select"/>
2	Purchase and install smart power strips with motion sensors for all devices, including computer	<input type="button" value="Select"/>

Introduction Overall Information Results Challenges #1-3 Challenges #4-6 Challenges #7-9 Challenge #10

Zero Net Energy Charrettes

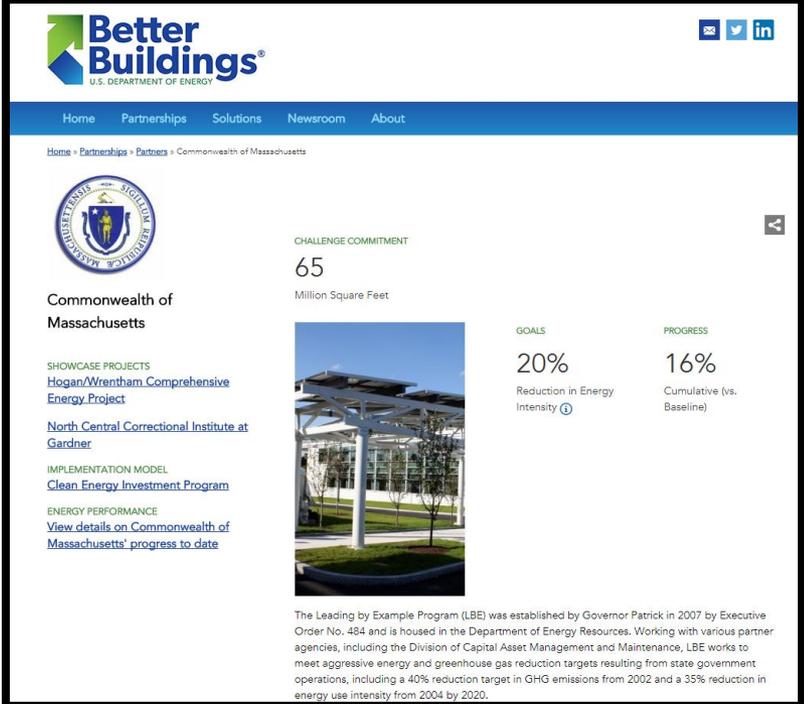
- DOER and DCAMM co-hosted two visioning charrettes in May and June, in Boston and Greenfield
- Gained input and insight state facilities staff, consultants architects, and others
- Significant interest in zero net energy buildings across stakeholders
- **July 22:** ZNE Working Group Charrette at DFW Field HQ in Westborough



ZNE East Charrette in Boston
May 21, 2015

Better Buildings Challenge

- Two showcase projects posted on DOE website
- Implementation model posted on DOE website
- MA Implementation Model (CEIP): #3 most viewed in June 2015



The screenshot shows the 'Better Buildings' website for the Commonwealth of Massachusetts. The page features the 'Better Buildings' logo at the top left, with 'U.S. DEPARTMENT OF ENERGY' below it. A navigation bar includes 'Home', 'Partnerships', 'Solutions', 'Newsroom', and 'About'. The main content area displays the state seal of Massachusetts and the text 'Commonwealth of Massachusetts'. Under 'SHOWCASE PROJECTS', there are links for 'Hogan/Wrentham Comprehensive Energy Project' and 'North Central Correctional Institute at Gardner'. Under 'IMPLEMENTATION MODEL', there is a link for 'Clean Energy Investment Program'. Under 'ENERGY PERFORMANCE', there is a link for 'View details on Commonwealth of Massachusetts' progress to date'. A 'CHALLENGE COMMITMENT' section shows '65 Million Square Feet'. A 'GOALS' section shows '20% Reduction in Energy Intensity' and a 'PROGRESS' section shows '16% Cumulative (vs. Baseline)'. A photograph of a modern building with solar panels is shown. A paragraph at the bottom explains the Leading by Example Program (LBE) established by Governor Patrick in 2007.

Better Buildings
U.S. DEPARTMENT OF ENERGY

Home Partnerships Solutions Newsroom About

Home » Partnerships » Partners » Commonwealth of Massachusetts



Commonwealth of Massachusetts

SHOWCASE PROJECTS
[Hogan/Wrentham Comprehensive Energy Project](#)
[North Central Correctional Institute at Gardner](#)

IMPLEMENTATION MODEL
[Clean Energy Investment Program](#)

ENERGY PERFORMANCE
[View details on Commonwealth of Massachusetts' progress to date](#)

CHALLENGE COMMITMENT
65
Million Square Feet

GOALS
20%
Reduction in Energy Intensity ⓘ

PROGRESS
16%
Cumulative (vs. Baseline)



The Leading by Example Program (LBE) was established by Governor Patrick in 2007 by Executive Order No. 484 and is housed in the Department of Energy Resources. Working with various partner agencies, including the Division of Capital Asset Management and Maintenance, LBE works to meet aggressive energy and greenhouse gas reduction targets resulting from state government operations, including a 40% reduction target in GHG emissions from 2002 and a 35% reduction in energy use intensity from 2004 by 2020.

Better Buildings Solutions Center

betterbuildingsolutioncenter.energy.gov

- New search tool from DOE
- Search among hundreds of solutions by criteria of interest:
 - Barrier
 - Technology
 - Sector
 - Building Size
 - Building Type

Find Energy Solutions

solar thermal 

Filter By:

BUILDING SIZE	BUILDING TYPE	SECTOR	LOCATION	SOLUTION TYPE	TECHNOLOGY	PARTNER
--Choose--	--Choose--	State Governmen	--Choose--	--Choose--	--Choose--	--Choose--

[Clear All Filters](#) 

Showcase Project (1)

[Hogan/Wrentham Comprehensive Energy Project](#) Showcase Project

Partner: Commonwealth of Massachusetts

Sector: State Government

Massachusetts conducted a comprehensive energy retrofit of a former state hospital and residential care facility now serving residents with developmental disabilities funded by ARRA SEP funds, state-issued clean energy bonds, utility incentives,...

Current search

1 result

solar thermal

[State Government](#)

State Energy Consulting Services Contract

- Current contract (PRF46) expires December 31, 2015
- DOER, DCAMM and OSD collaborating on next-phase contract
- Expanding scope somewhat to incorporate additional energy advising and analysis services
- For more information, contact:
Charles.Tuttle@state.ma.us

High-Efficiency Lighting Distribution Program

- LBE collaborating with utility providers on next-phase of previously successful lighting distribution program
- Potential for more no-cost LED lighting and/or other high-efficiency lighting in coming months
- LBE working on other energy conservation measures of interest to state facilities (i.e. refrigerator replacements)
- For more information, contact:
Charles.Tuttle@state.ma.us

Building Energy Intelligence Update

- Massachusetts Enterprise Energy Management System (EEMS)
- Current contract ends August 31, 2015
- Seeking innovative and alternative approaches to diverse Commonwealth portfolio
- Next-phase Building Energy Intelligence contract to be awarded at end of September
- Contact Krista Lillis (DCAMM) at Krista.Lillis@state.ma.us for more information



Massachusetts Department
of Energy Resources

LBE 2015 Awards

- Awards for energy and environmental achievements, for:
 - State Agencies (2)
 - Public Higher Ed. (2)
 - Municipalities (2)
 - Individuals (2)
- Application available on LBE website
- Applications due **September 16, 2015**
- Award presentation at State House in the fall



DCAMM Energy Team received a State Agency LBE Award in 2014

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EcoBuilding Bargains Overview

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