Creating A Cleaner Energy Future For the Commonwealth

DOER
Massachusetts Department of Energy Resources

Leading By Example Council Meeting

May 22, 2014

Agenda

MASSACHUSETTS LEADING BY EXAMPLE PROGRAM

PUBLIC LEADERSHIP, STEWARDSHIP, COMMITMENT

- LBE Council Mtg (10:00-12:00)
  - Welcome & Introductions
  - State & Federal Policy Updates
  - LBE Updates
  - Discussion: Fuel Efficiency Standard
  - New Business

State & Federal Policy Updates

Federal 111D Power Plant Rules

- Cut GHG emissions from power plants by 30%
  - In 2030 compared to 2005
- State specific goals
  - EPA set **rate-based** goal – states can convert to **mass-based**
  - Meet goal as single state or through multi-state approach
  - MA goal: **576** lb/MWh in 2030
- State plans must be submitted by June 30, 2016 – with extension options
- Four building blocks:
  - Improving efficiency at existing fossil fuel power plants (coal)
  - Increasing utilization of existing low emitting power plants (natural gas)
  - Expanding use of low or zero emitting alternatives (wind, solar, other)
  - Increasing energy efficiency in homes and businesses
-
- More Info: http://www.epa.gov/cleanpowerplan

Massachusetts Electric Vehicle Incentive Program – MassEVIP

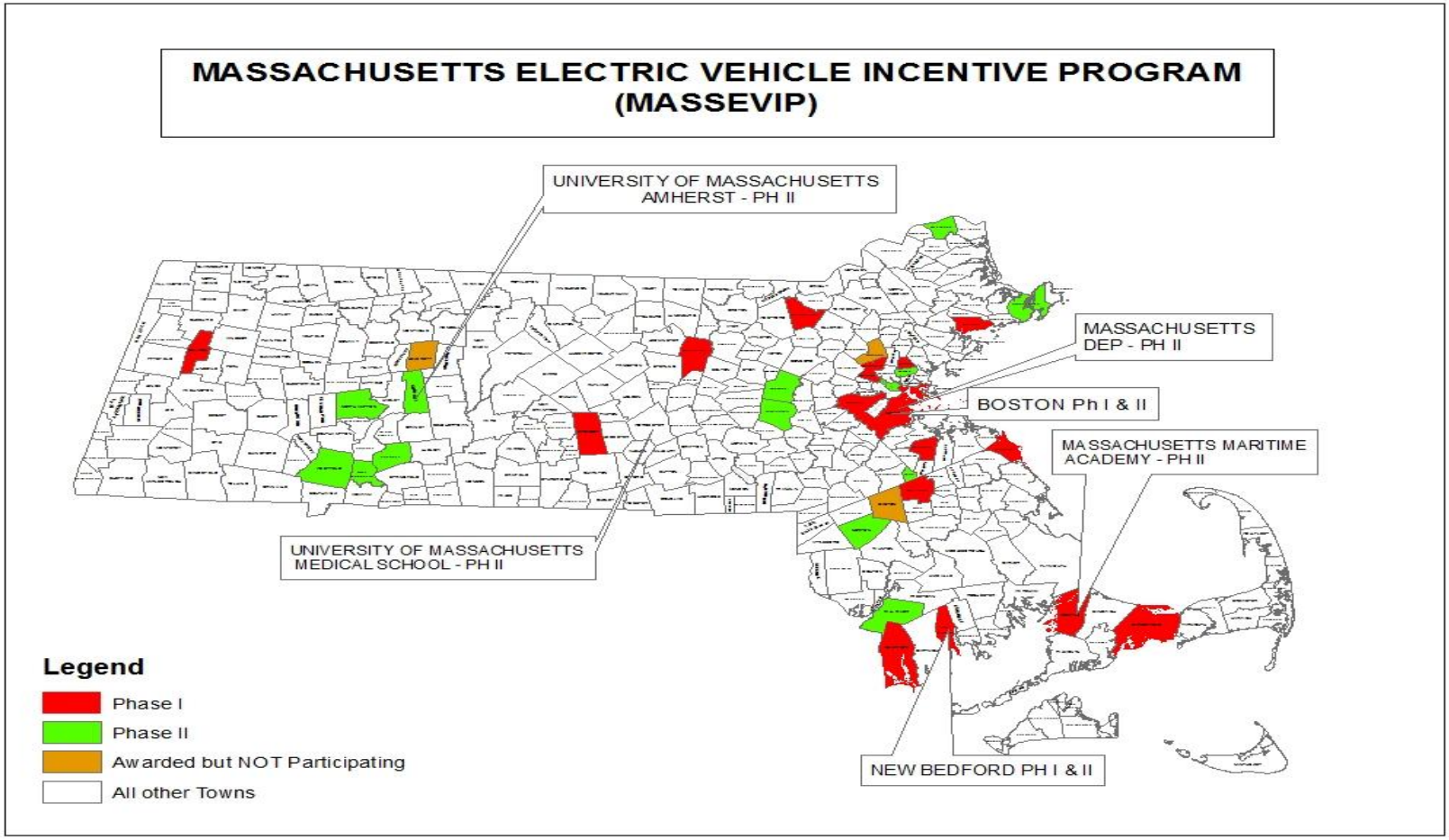
- Launched on Earth Day 2013 with $2.5 million in funding
- Open to municipalities, public universities and colleges, and state fleet
- Vehicle incentives of $7,500 for full battery electric vehicle (BEV) and $5,000 for plug-in hybrid electric vehicle (PHEV)
- Financial assistance up to $15,000 for the installation of Level 2 EVSE

MassEVIP - Awards

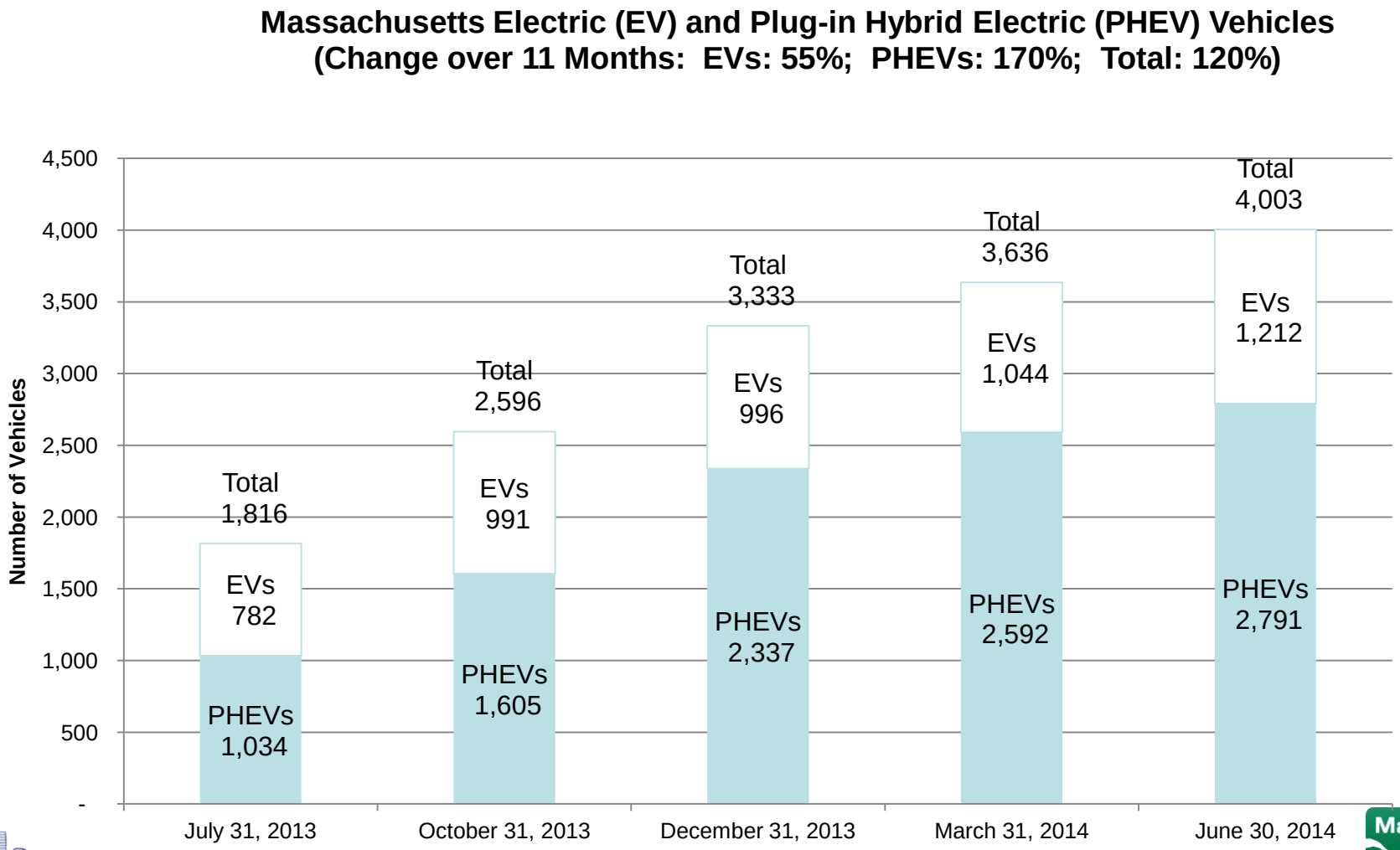
Under MassEVIP Phases I and II, 38 entities applied for:

- $1,107,500 in incentive funding
- 115 EVs: 65 BEVs and 50 PHEVs
- 30 Level 2 dual-head charging stations
- Webpage: http://www.mass.gov/eea/agencies/massdep/air/grants/massevip-municipal.html

MassEVIP Phases I and II Grantees



Electric Vehicles in Massachusetts



MassEVIP: Workplace Charging

- Launched on June 18, 2014 with $1.4 million in available funding during Workplace Charging Workshop
- Open to employers with 15 or more employees in a non-residential place of business
- Incentives covering 50% (up to $25,000) of hardware costs for Level 1 and Level 2 EVSE

MassEVIP: Workplace Charging

Since June 18, 21 employers have requested:

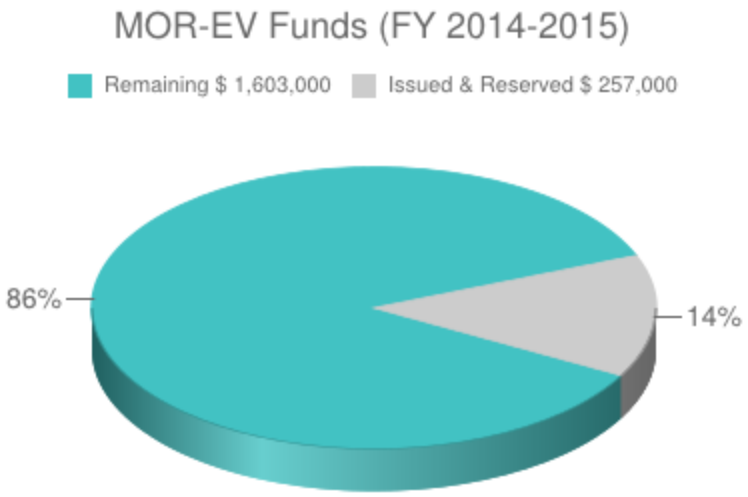
- Over $175,000 in incentives
- 60 Level 2 dual-head charging stations
- Webpage: http://www.mass.gov/eea/agencies/massdep/air/grants/workplace-charging.html

MassDEP Contact Information

- Sejal Shah: (sejal.shah@state.ma.us) or 617-556-1015
- Richard Blanchet (richard.blanchet@state.ma.us) or 617-654-6585

The Massachusetts Offers Rebates for Electric Vehicles (MOR-EV)

- Goal to increase the use of electric vehicles within general population
- Funded by the EEA and DOER and administered statewide by the Center for Sustainable Energy (CSE)
- Rebates of $1500 and $2,500 for the purchase or lease of zero-emission and plug-in hybrid light-duty vehicles
- https://mor-ev.org/
- MOR-EV program launched on June 18th: So far



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Clean Vehicle Program

- Goal to replace more than 200 public and private vehicles powered by gasoline and diesel with alternatively fueled vehicles.
- Natural gas, propane (auto gas), battery, hybrid, and solar electric, as well as hydraulic hybrid.
- Also funding for electric vehicle charging and natural gas infrastructure.
- Project will cover the differential cost for the various clean fuels.
- Program funded by the Congestion Mitigation and Air Quality (CMAQ) improvement program sponsored by the U.S DOT Federal Highway Administration.

Clean Vehicle Program

- Five projects are EV specific:
  - (PON-ENE-2014-039) Battery Electric Buses with Wireless Charging
  - (PON-ENE-2014-040) Battery Electric Shuttles and Medium Duty Trucks
  - (PON-ENE-2014-043) Hybrid Technology Conversion for Light Duty Vehicles
  - (PON-ENE-2014-046) Hybrid Technology Conversion for Medium and Heavy Duty Vehicles
- Unreleased PON for Fast Charging Infrastructure
- PONs posted on Commbuys and DOER website
- DOER contacts: Steve Russell and Michelle Broussard

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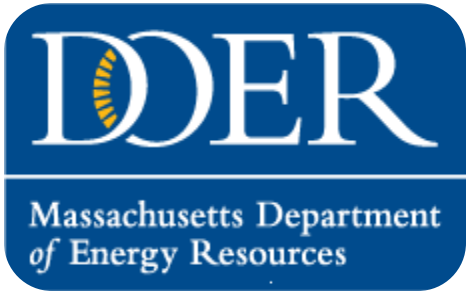


COMMONWEALTH OF MASSACHUSETTS

Deval L. Patrick, Governor

Maeve Vallely Bartlett, Secretary

Meg Lusardi, Acting Commissioner

LBE Council Meeting

Boston, MA

July 22, 2014

SREC II and Net Metering Overview

Mike Judge

Associate Manager, RPS Programs

Renewable and Alternative Energy Division

Summary of MA Portfolio Standard Programs

RPS Class	Sub Class	Technology	Minimum Standard	2014 ACP Rate, $/MWh
Class I		Wind, LFG, Biomass, Solar PV, Small Hydro, AD, etc.	9% in 2014; increases by 1% each year	$66.16; increases with CPI
	Solar Carve-Out	Solar PV; 6 MW or less, in MA	0.9481% in 2014; set by formula annually	$523; reduced annually per 10-year schedule
	Solar Carve-Out II	Solar PV; 6 MW or less, in MA	0.0843% in 2014; set by formula annually	$375; reduced annually per 10-year schedule
Class II	Renewable	same as Class I	3.6%; stays constant	$27.16; increases with CPI
	Waste Energy	Waste to Energy Plants, in MA	3.5%; stays constant	$10.86; increases with CPI
APS		CHP in MA, flywheels, storage, etc.	3.5% in 2014; increases to 5% in 2020	$21.72; increases with CPI

SREC-II Policy Objectives

- Provide economic support and market conditions to maintain and expand PV installations in MA
- Control ratepayer costs
- Maintain robust, progressive growth across installation sectors and manage growth to reach 1600 MW by 2020
- Maintain competitive market of diverse PV developers, without undue burdens of entry
- Address financing barriers limiting residential and non-profit direct ownership, without compromising third-party ownership model
- Minimize regulatory complexity and maintain flexibilities to respond to changing conditions

Key Differences Between SREC I & SREC II

- Larger program capacity cap (1,600 MW – approx. 660 MW).
- No more Opt-In Terms. Qualified projects generate SREC IIs for 40 quarters (10 years) from quarter in which they qualify.
- Both ACP Rate and Auction Price decline over time.
- SREC Factors differentiate market sectors and provide different incentive levels to different types of projects.
- Managed Growth sector helps control market growth. Qualification under this sector will be limited by Annual Capacity Blocks made available on a two year forward schedule by DOER.
- Compliance Obligation and Minimum Standard set in regulation for 2014 and 2015. Annual calculations thereafter based on actual and projected supply, constrained by Yearly Installed Capacity Targets, which help determine Annual Capacity Blocks for Managed Growth sector.

H.4185 Overview

- Removes net metering caps for solar, effective immediately.
- Makes the 1600 megawatt (MW) solar goal by 2020 a statutory requirement.
- Aligns net metering and solar incentive programs to support the continued build out of the MA solar market by funding projects at levels necessary for development.
- Creates fixed 'declining block' incentive structure for solar - removes risk of existing solar incentives, which fluctuate in price.
- Maintains SREC II policy goals re: project type, size, and locations.
- Reduces ratepayer costs for the programs.
- Continues same net metering for non-solar systems.
- Allows for establishment of a minimum bill.

Phase 2 Solar Net Metering and Solar Virtual Metering

- Phase 2 systems will receive net metering credits as calculated today but must be designed to meet up to 100% of the on-site load.
  - Systems may be up to 5 MW
- Solar virtual system credits will be calculated using transmission, transition, and default service charges.
  - Systems may be up to 1 MW, 2 MW, or 5 MW, depending on type.

Declining Block Incentive

- Incentives will be determined according to a DOER-designed, DPU approved, declining block incentive (DBI) program.
- DBI will aim to provide sufficient revenue to support the financing of projects.
  - Recognizing different needs of various market sectors
- Incentives will be fixed for 15 years (10 years for systems under 25 kW):
  - Phase 2 systems will receive fixed payment.
  - Virtual systems will receive an incentive calculated inversely to the virtual metering credits in a contract for differences approach.
- Utilities will pay incentives directly under a tariff mechanism.
- Incentive adders for systems serving public policy objectives.

More Information

RECs/SRECs

RPS Homepage: www.mass.gov/energy/rps

RPS Email: DOER.RPS@state.ma.us

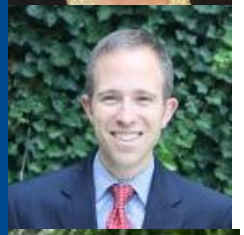
SREC Email: DOER.SREC@state.ma.us

Net Metering

Net Metering Homepage: www.mass.gov/dpu/netmetering

MassACA: www.massaca.org

Environmental Secretariat Staffing Changes



- Secretary Richard Sullivan now Governor Patrick's Chief of Staff
- Maeve Vallely Bartlett new EEA Secretary
- Energy Undersecretary Bobbie Kates Garnick to Tufts University Fletcher School, replaced by former DOER Commissioner Mark Sylvia
- Meg Lusardi now DOER Acting Commissioner

LBE Staffing Changes

- Melissa Lucas at UMass Medical has left the state

- Maggie McCarey at LBE is moving to Efficiency Division within DOER
- New Position posted
- Maggie's duties will be covered by other LBE staff
- **They will be missed!**

Municipal Light Plant Awards

- Municipal Light Plants (MLPs) Background
  - municipal electric and/or gas utilities that distribute (and sometimes generate) energy
  - do not participate in Mass Save
  - all have residential audits available - other efficiency services and incentives vary
  - 41 MLPs serving all or parts of 49 municipalities
- DOER Grants
  - $1.78 million awarded to 11 MLPs
  - Expand efficiency services in 14 MLP-served communities
  - Provide funding for municipal efficiency projects
  - Most are for LED streetlight retrofits

Municipal Light Plant Awards

Sample MLP Efficiency Grants

- Residential rebates for air sealing, insulation for electric/oil-heated homes
- Additional residential audit services - blower door test and infrared scans
- Rebates for commercial lighting retrofits
- Expanded commercial incentives – more MLPs, higher incentives
- Exterior lighting LED conversions for commercial and residential
- Smart grid pilot

Commercial efficiency program awards:

Ashburnham
Chicopee
Groton
Holyoke
Reading, also serving Lynnfield, North Reading & Wilmington
South Hadley
Sterling
Westfield

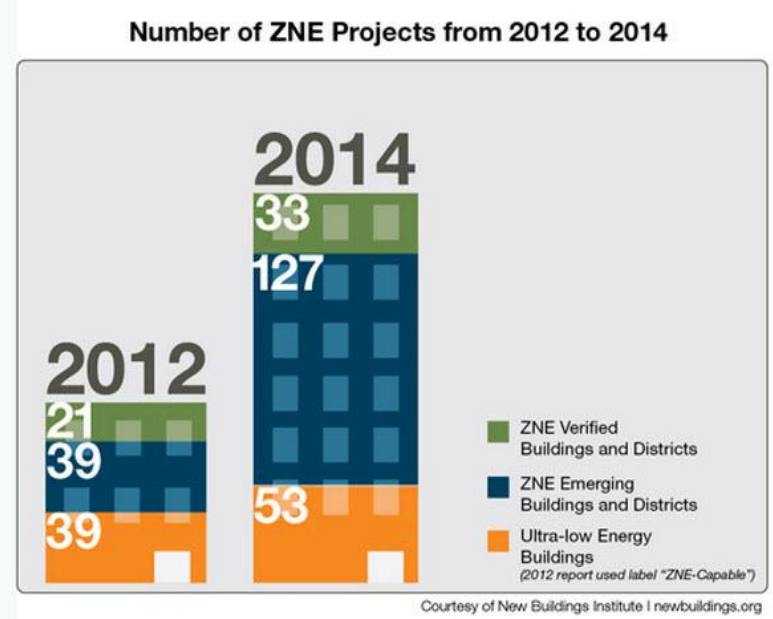
Residential efficiency program awards

Belmont
Concord
Holyoke
Reading, also serving Lynnfield, North Reading & Wilmington
Taunton

Press release available **http://tinyurl.com/payob7s**

Pathways to Zero Grant Program

- $2.5 million grant program for public and private buildings striving for ZNE
  - feasibility, design, construction
  - commercial and residential
- Total applications received: 42
  - Construction: 32
  - Feasibility & Design: 10
  - Commercial: 20, Residential: 22
- Grant dollars requested: $7.7 million
- Awards by end of September



LBE Updates

LBE Update: Renewable Thermal Grants

- Two new grants approved:
  - $100,000 for 60KW CHP at Worcester State University new dormitory/dining hall
  - $50,000 for pre-feasibility studies at four DFG sites to evaluate pellet boilers and air source heat pumps
- Deadlines Extended
  - Feasibility study grant applications due: 10/15/14
  - Project grant applications due: 12/31/ 14
- $2 million still available
- Biomass, Solar thermal, Air Source Heat Pumps, Ground Source Heat Pumps, Water Source Heat Pumps, CHP

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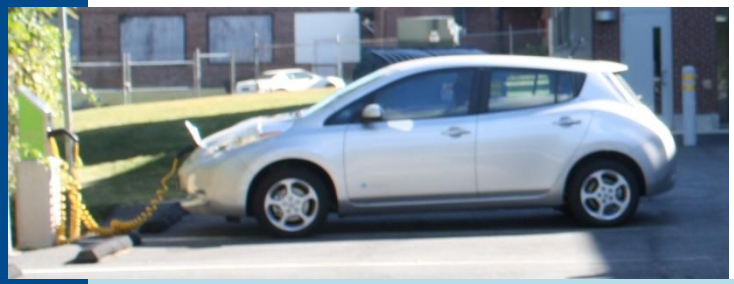
EEMS Contract Update

- EEMS contract with EnerNOC currently expires at the end of August
- DOER and DCAMM working to identify funding to extend the contract for an additional 6 months
- DOER hiring consultant to assist with evaluation of program and recommendations for next procurement
- Next procurement for EEMS will be managed by DCAMM
- EEMS User Survey will be coming out in the next week

LBE Update: Solar Canopy Grant Program



$1.5 Million grant opportunity for solar PV at parking lots, garage roofs, and pedestrian walkways on state owned land

- $0.50/ watt up to $500,000 per project
- 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

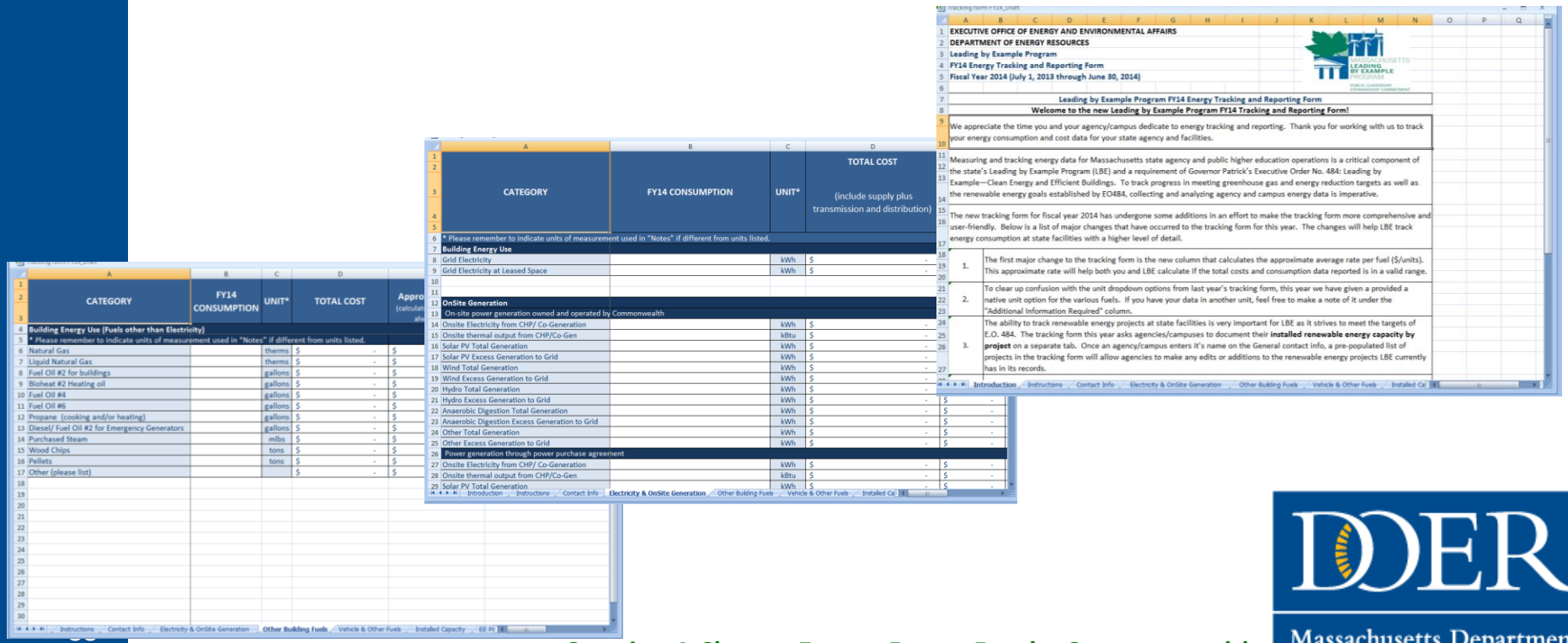
http://www.mass.gov/eea/grants-and-tech-assistance/guidance-technical-assistance/agencies-and-divisions/doer/doer-procurements.html

LBE Awards

- LBE Awards provide an opportunity to recognize the efforts of state agencies, public colleges and universities, and municipalities
- Annual awards ceremony occurs at the State House in October
- Applications due **September 16,** will be posted on web soon

LBE Tracking Forms - FY15

- Updated LBE Tracking Forms due in the Fall 2014
- Collects data for building and vehicle fuels
- Slight modifications to form regarding drop-downs and fuels



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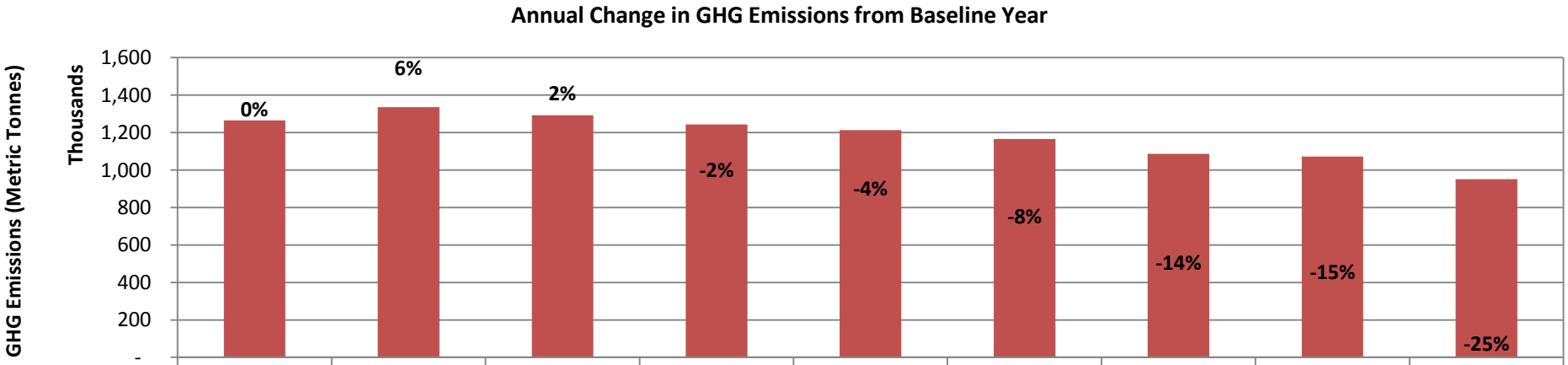
LBE Progress towards EO 484

- New Grid Electricity MA-specific GHG emissions factor released by MassDEP for 2012-present
- State agencies and campus reduced GHG Emissions by 25% with updated calculations for FY12 goals



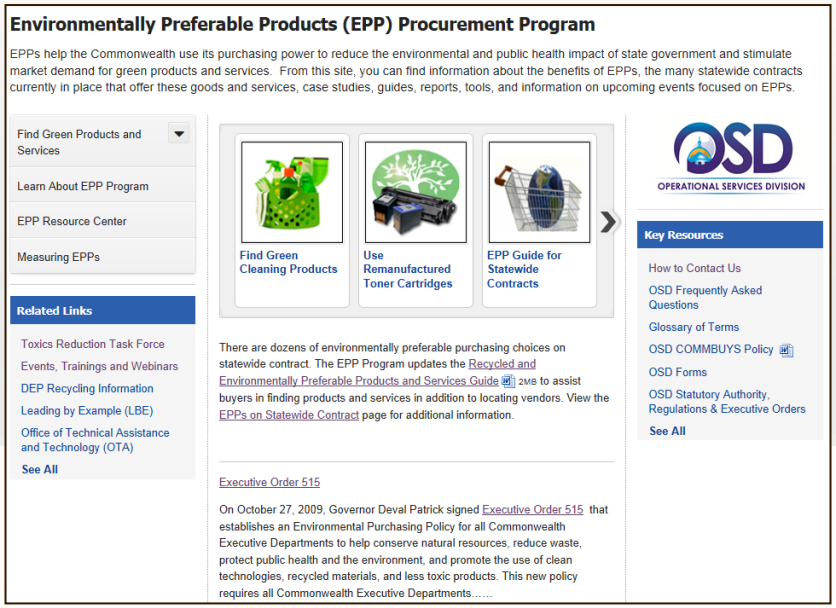
	Baseline	2005	2006	2007	2008	2009	2010	2011	2012
Total GHG Emissions	1,265,350	1,335,159	1,292,331	1,243,143	1,212,582	1,164,969	1,086,862	1,071,977	950,904
% Difference from Baseline	0%	6%	2%	-2%	-4%	-8%	-14%	-15%	-25%

Massachusetts as a First Customer Program (MassCEC)

- Identify clean energy technologies that are commercially ready
  - Massachusetts-based
  - Technology Readiness Level (TRL) of 9
- Connect companies with commercially ready technology (CRT) with public entities
- Process:
  - Phase 1: RFI - Closed on July 18th
  - Phase 2: Release List of CRT – September 1st
  - Clean Energy Expo: September 24th
- Challenges
  - Procurement Statutes

- EO 515 – Environmental Purchasing Policy
- Updated website
- **Find products:** *Recycled and Environmentally Preferable Products Purchasing Guide*
- **Newsletter:** EPP Buyer & Seller Update
- Green Cleaning & Remanufactured Toner Cartridges
- Julia Wolfe, Director of Environmental Purchasing 617-502-8836

www.mass.gov/EPP



DCAMM AEP Update

Fuel Economy Standard for State Fleet

- Legislative Requirement
  - Chapter 169 – Green Communities Act
- ACEEE Scorecard
  - Leading by Example Category
    - State Fleet Efficiency Policies

- Environmental and Economic Benefits

Current Policy Design Options

- Maine (1991)
  LDV: 45 mpg
  LDT: 35 mpg

Minimum mpg standard for all new vehicle purchases

1

- California
  LDV: 27.5 mpg
  LDT: 22.2 mpg

Combined average mpg standard for all new vehicle purchases

2

- Washington
  36 mpg by 2015

Fleet-wide average mpg standard

3

Path Forward for MA

Goal: A Standard that is Aggressive AND Achievable

Preliminary Ideas

- Establish average MPG standard for new vehicle purchases by each state agency
- Create Standard in Two Categories
  - Passenger cars
  - Light-duty trucks (pick-ups, SUVs, vans)
- Data Analysis
  - Historical purchases
  - Existing state contracts
  - Technological Feasibility

Policy Elements

- Exemptions
- Reporting Requirements
  - Vehicle Acquisition Request
- Regular Standard Updates
- Flexibility in Compliance
  - Credit Trading Scheme

Discussion

Questions? Comments? Concerns?