

Leading by Example Council Meeting

May 17, 2016

Agenda

- Welcome and Introductions
 - Worcester State Overview
- Solar Updates
- NEW LBE Initiatives
- DCAMM Updates
- The Present and Future of Advanced and Alternative Fuel Vehicles
- Recycling/Composting Programs and Updates
- LBE Updates
- Upcoming Events





WORCESTER
STATE
UNIVERSITY

WSU Sustainability: LBE Meeting

Steve Bandarra

May 17, 2016



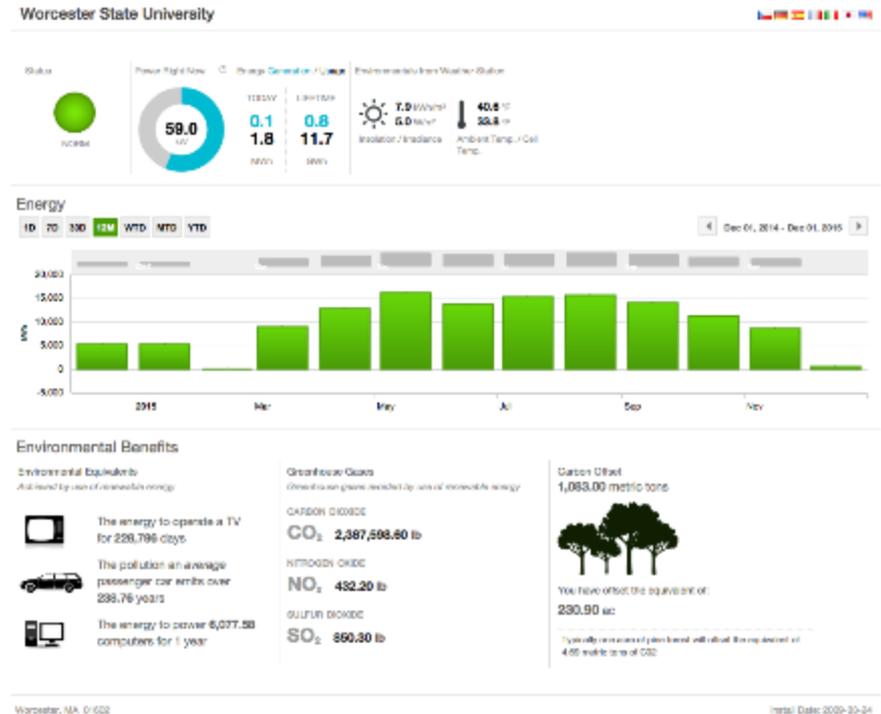
A Brief History

- Single Stream Recycling 2006
- Trayless dining 2007
- ACUPCC (American College & University Presidents' Climate Commitment) signed in 2007
- Executive order 484 and 515
- Combined heat and power unit in Dowden Hall 2010 & Sheehan Hall 2014
- Energy conservation – lighting and equipment
- LRC PV Array – 2009
- Wasylean PV Array 2012
- Parking Garage Lighting Retrofit – LED Lighting 2012



Energy

- 10% Green electricity
- 2 Net-metering agreements which enable 6.5 Megawatts of solar power generation to exist in Massachusetts and saves WSU approximately \$500,000 per year
 - Orange, MA Facility
 - Palmer MA Airport Facility
- Many initiatives supported by outside funding opportunities
 - Dowden Hall LED lighting conversion
 - Sheehan Hall co-generation unit with grant from LBE
 - Wellness Center solar thermal system with incentive from Clean Energy Center



Highlights from the Past Year



Lighting: LED's Save Money and Energy

- Bulb swaps – 3,300 bulbs
- Stairwell lighting – 375 fixtures
- Exterior lighting – 50 more this year
- Residence hall lighting – 969 bulbs
- Worcester Center for Crafts – 179 bulbs
- LRC third floor conversion to LED – 539 fixtures

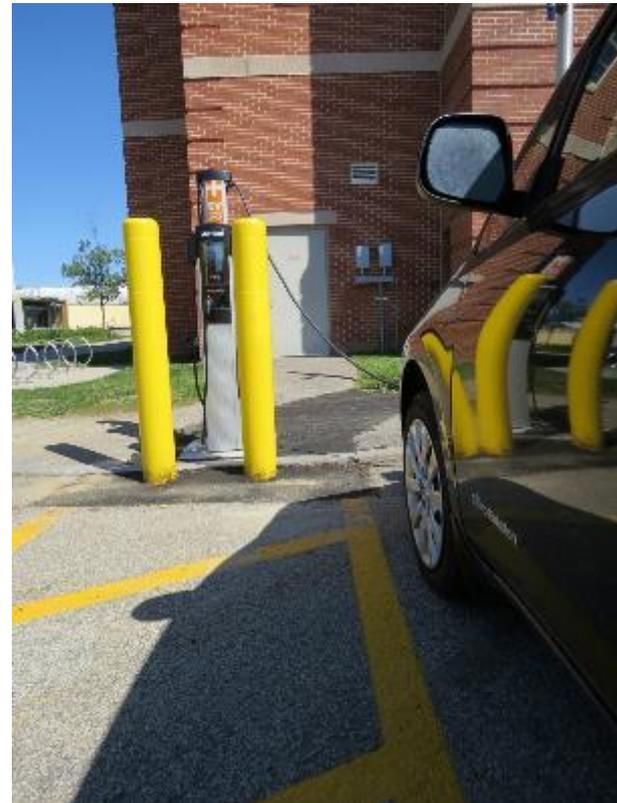


-
- Yearly anticipated savings - \$50,000+
 - Carbon reduction – 100+ tons per year

Green Transportation Initiatives

Announced last summer:

- Zipcar
- EV charging station
- Bike share with awnings
- New bus route
- Carpool parking spots



Student Involvement and Education

- Sustainability Fair
- RecycleMania
- Ditch the Dumpster
- Office of Sustainability Interns
- EcoHouse Living Learning Community



Buildings and Recycling

Green Building

LEED Gold Buildings:

Shaughnessy Administration Building

Dowden Hall

Expected LEED Silver or Gold Buildings:

Sheehan Hall

Wellness Center



Trash and Recycling

Last year we recycled 143 tons

34% of our total waste stream



Awards Received in 2015/2016

- **2015 Leading by Example Award** from the Commonwealth of Massachusetts for outstanding energy and environmental efforts in the Higher Education category
- **EPA Environmental Merit Award** 2104 National Food Recovery Challenge Award Winner for Colleges and Universities
- **2016 Princeton Review Guide to 353 Green Colleges** This marks the third year in a row of inclusion on this list
- **MassDOT/MassRIDES Eco-Award** 2016 Leadership Award for Excellence in Commuter Options This marks the second year in a row of inclusion on this list



Freight Farms (LGM)

- Chartwells initiative to grow lettuce
- Will produce 550-600 heads of fresh lettuce per week
- Reduces our carbon footprint
- Fresh local food



Current Construction – Wellness Center

- Energy efficient HVAC equipment
- Solar thermal panels for pre-heating domestic hot water
- Rain water harvesting for irrigation
- Hydration stations
- Lighting control systems



Thank You!

Steven Bandarra

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worchester.edu/green

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[@WSUgreen](https://twitter.com/WSUgreen)



Solar Updates

Solar Legislation



[EEA Flickr](#), 2016

- Governor Baker signed in April
- Raises public net metering caps from 5% of utilities' peak load to 8%

SRECII Program Emergency Regulations

- Extends eligibility for incentives to all projects ≤ 25 kW interconnected by start of the next program
- Extends eligibility for incentives to all projects > 25 kW constructed by January 8, 2017
- Ensures SREC II program will end in 2027 at the latest

-
- Public Hearing: 5/20, 1-3pm, MassART, Tower Auditorium (Boston)
 - Comments by 5/27: Email pdf to DOER.SREC@state.ma.us (Subject: COMMENTS); or by mail to DOER, ATTN: Kaitlin Kelly

Next Solar Incentive Program

- DOER currently working with consultant to develop framework for next program
- Public stakeholder engagement process planned
- Multiple options being considered



[NREL](#), 2016

2016 Solar Canopy Projects at State Facilities

- DCR Walden Pond
 - 100 kW
 - LBE Grant Approved: \$50,000
- UMass Amherst (1)
 - 292 kW
 - LBE Grant Approved: \$146,000
- Roxbury Community College
 - 937 kW
 - LBE Grant Approved: \$600,000
- UMass Lowell
 - 200 kW
 - LBE Grant Approved: \$150,660
- UMass Amherst (2)
 - 4.5 MW PPA
 - LBE Grant Pending: \$500,000



Creating A Clean, Affordable and Resilient Energy Future For the Commonwealth

DDER

Massachusetts Department
of Energy Resources

NEW LBE Initiatives

Program Funding Categories

1. Commonwealth Building Energy Intelligence
2. Existing Building Efficiency
3. High-Performance Buildings
4. Large Oil Users
5. Renewable Thermal
6. Resiliency and Storage
7. Solar Canopies
8. Vehicle Fuel Efficiency
9. MBTA



Commonwealth Building Energy Intelligence

- Implement advanced energy analytics across substantial number of state facilities to achieve sufficient savings to more than pay for ongoing costs
- DCAMM and DOER coordinating with EnerNOC and sites on ongoing implementation and possible expansion

Existing Building Efficiency

- Support efficiency projects in existing buildings that have traditionally not been addressed by utility incentives and/or DCAMM efficiency efforts.
- DOER to identify potential technologies/approaches and audience to conduct analyses and deploy strategies



[US DOE](#), 2016

High-Performance Buildings

- Accelerate and expand the design and construction of highly efficient buildings in the state portfolio, while maximizing on-site renewable generation and use
- DOER to identify target audience and develop grant program



Large Oil Users

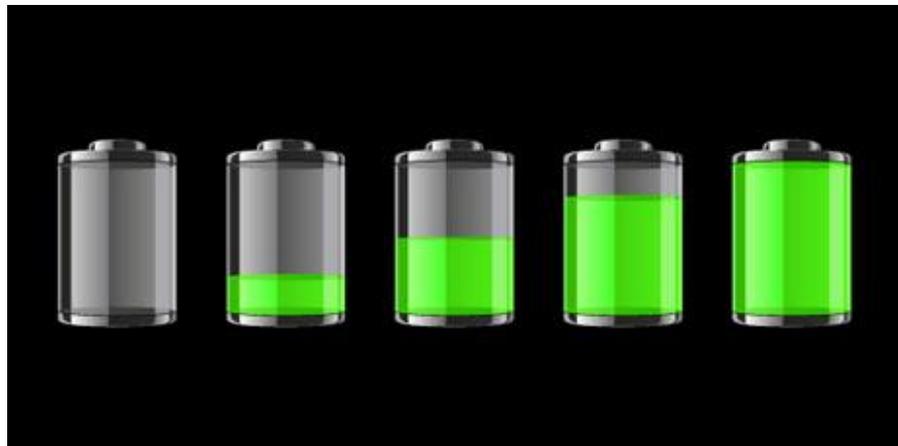
- Develop plans and strategies to facilitate efforts that will eliminate heating oil use at facilities with significant oil consumption.
- DOER to identify targeted list of sites for further study and fund consultant study(ies)

Renewable Thermal

- Double the number of small and medium renewable thermal installations at state facilities by 2020, targeting high emission and/or high cost fuels
- DOER to develop new grant for study & implementation funds and conduct outreach to applicable agencies

Resiliency and Storage

- Deploy 2-3 demonstration projects by 2020 while increasing awareness and knowledge of resiliency strategies among state agencies
- DOER to study how to best prioritize sites for resiliency and storage, and identify applicable technologies



Solar Canopies

- Support the installation of 25 MW of solar canopies at state facilities by 2020
- DOER to support development of canopy projects in feasibility study, develop new grant program once incentives are in place, and potentially study additional sites



Vehicle Fuel Efficiency

- Ensure compliance with fuel efficiency standard while reducing number of exemptions over time
- Target 25% of passenger car acquisitions as BEV or PHV by 2020
- DOER to develop grant program and conduct fleet manager trainings

MBTA

- Support and accelerate efficiency projects over next 3 years
- Sign MOU between MBTA and DOER, and develop efficiency plan



LBE Funding

- Approximately \$30 million allocated to programs 2016-2020
- Some grants to be revised/continued
- Other new grant programs in development
- Studies/analyses where appropriate
- Grant opportunities summer/fall 2016

DCAMM Updates

AEP Continues

- Of \$480 million estimated project costs
- \$160 million initiated construction
- \$240 million currently in study

Comprehensive

- 103 Projects
- Typically \$5-20 million TPC
- Funding
 - Primarily Clean Energy Investment Program (CEIP)
 - Deferred Maintenance funding
 - Addressing ADA issues

Utility Vendor Program

- 455 Sites (Currently, 115 complete, 125 construction, 150 being audited)
- Less than \$100,000 per site
- Simple measures (LED, t-stats, envelope)
- Starting to collect sites for additional bundles of \$500,000.
- Funding primarily GO Bond
- Jim Freeley Program Manager – james.a.freeley@state.ma.us

RCx

- 30 sites
- Offer technical advisor investigation and implementation support
- Up to 50% buy down with GO Bond
- Developing a continuous commissioning process through CBEI.

Demand Response and APS

- Program Manager David Lewis –
david.lewis@state.ma.us
 - Cpower – Demand Response contractor
 - Nexant – APS, SREC
 - Energy ROI – Class I and II RECs
 - BGC – Purchase of Green-e RECx

PRF62 Contracts

- 70 Companies
- 7 Categories (Energy Advisor, RCx, LEED)
- Statewide – open to all public entities
- On Commbuys

FAC91 PV Maintenance Contract

- 2 Companies
 - Alares
 - Solar Design Associates
- Statewide – open to all public entities
- On Commbuys

Resiliency Assessment

- Initiating statewide assessment of Resiliency including multiple hazards
- Using grant from MEMA
- Study Contract with Weston and Sampson and Kleinfelder
- Assessing vulnerabilities by Secretariat
- Jeremy Caron – E-team contact – jeremy.caron@state.ma.us

CBEI

- Commonwealth Building Energy Intelligence
- See handout for summary information
- Krista Lillis will be DCAMM Program Manager (on leave) – krista.lillis@state.ma.us
- Stephen White – DCAMM Administrator (cards available) – stephen.white@state.ma.us
- 3 year contract with EnerNOC
- 1st Step to revisit, survey and activate existing EEMS sites.
- New program to include BMS integration, utility billing, and enhanced analytics.
- Developing Continuous Commissioning program over summer

The Present and Future of Advanced and Alternative Fuel Vehicles

Creating A Clean, Affordable and Resilient Energy Future For the Commonwealth



Massachusetts Department
of Energy Resources

Fuel Efficiency Standard

- Officially approved & released by ANF & EEA
- Applies to all executive branch fleets and all acquisitions made through OVM
- Two Key Requirements:
 1. Average combined MPG for new acquisitions:
 - 32 MPG for passenger cars (Category I)
 - 22 MPG for trucks, vans and SUVs (Category II)
 2. AFV/HEV minimum acquisition requirement:
 - 5% of all acquisitions must be AFV/HEV
- Upcoming Training Webinar - Date TBD
- Two new statewide contracts to support compliance:
 - VEH98: Vehicles
 - VEH102: Advanced Vehicle Technologies



Category I Vehicles (Passenger Cars) Available that Meet or Exceed Standard

- | | | |
|-------------------------------------|--|--------------------------------------|
| 1. Audi A3 – 36 | 24. Honda Civic HF – 35 | 47. Nissan Versa – 35 |
| 2. BMW 328d – 37 | 25. Honda Civic Hybrid – 45 | 48. Scion iA – 37 |
| 3. BMW i3 BEV - 124 | 26. Honda CR-Z Hybrid – 37 | 49. Scion iQ – 37 |
| 4. BMW i3 REX (PHEV) – 117 | 27. Honda Fit – 36 | 50. Scion iQ EV – 121 |
| 5. Cadillac ELR – 82 | 28. Honda Fit EV – 121 | 51. Smart Car EV – 107 |
| 6. Chevrolet Cruze Eco – 33 | 29. Hyundai Elantra – 32 | 52. Tesla Model S – 101 |
| 7. Chevrolet Malibu Hybrid | 30. Hyundai Sonata – 32 | 53. Toyota Avalon Hybrid – 40 |
| 8. Chevrolet Sonic – 33 | 31. Hyundai Sonata Hybrid – 41 | 54. Toyota Camry Hybrid – 41 |
| 9. Chevrolet Spark – 34 | 32. Kia Optima Hybrid – 38 | 55. Toyota Corolla Eco – 35 |
| 10. Chevrolet Spark EV – 119 | 33. Kia Soul EV – 105 | 56. Toyota Mirai – 60 |
| 11. Chevrolet Volt – 98 | 34. Lexus CT 200h Hybrid – 42 | 57. Toyota Prius – 50 |
| 12. Dodge Dart Aero – 32 | 35. Lexus ES 300h Hybrid – 40 | 58. Toyota Prius Plug-in – 95 |
| 13. Fiat 500 – 34 | 36. Lincoln MKZ Hybrid – 40 | 59. Toyota Yaris – 37 |
| 14. Fiat 500e EV – 116 | 37. Mazda 2 – 37 | 60. VW Beetle – 34 |
| 15. Ford C-Max Energi – 88 | 38. Mazda 3 – 34 | 61. VW e-golf EV – 116 |
| 16. Ford C-Max Hybrid 40 | 39. Mazda 6 – 32 | 62. VW Golf – 36 |
| 17. Ford Fiesta – 36 | 40. Mercedes Benz B Class EV – 84 | 63. VW Jetta – 36 |
| 18. Ford Focus – 33 | 41. Mercedes Benz E250 Bluetec – 33 | 64. VW Jetta Hybrid – 45 |
| 19. Ford Focus EV – 105 | 42. MINI Cooper – 33 | 65. VW Passat – 34 |
| 20. Ford Fusion Hybrid – 42 | 43. Mitsubishi i-MiEV – 112 | 66. VW Passat – 35 |
| 21. Ford Fusion PHEV – 88 | 44. Mitsubishi Mirage – 40 | |
| 22. Honda Accord Hybrid – 47 | 45. Nissan Leaf – 116 | |
| 23. Honda Civic – 33 | 46. Nissan Sentra – 34 | |

*Hybrids/PHEVs/BEVs in red

Creating a Clean, Affordable and Resilient Energy Future for the Commonwealth



Massachusetts Department
of Energy Resources

Category II Vehicles (Trucks/Vans/SUVs) Available that Meet or Exceed Standard

1. Acura RDX – 23
2. Audi Q5 – 27
3. BMW X3 sDrive 28i – 24
4. BMW X3 xDrive28d – 30
5. BMW X5 xDrive35d – 27
6. Buick Encore – 28
7. Chevrolet Captiva – 23
8. Chevrolet City Express Cargo – 25
9. Chevrolet Colorado 2.5L – 22
10. Chevrolet Equinox – 26
11. Chevrolet Trax – 29
12. Dodge Ram 1500 3.0L – 24
13. Dodge Ram Promaster City – 24
14. Fiat 500x – 28
15. Ford Edge – 24
16. Ford Escape – 26
17. Ford Explorer – 23
18. Ford F-150 2.7L – 22
19. Ford Transit Connect Van – 25
20. GMC Canyon – 22
21. GMC Terrain – 26
22. Honda CR-V – 29
23. Honda HR-V – 31
24. Honda Odyssey – 22
25. Honda Pilot – 23
26. Hyundai Santa Fe Sport – 23
27. Hyundai Tucson Eco – 29
28. Infiniti QX60 Hybrid – 26
29. Jeep Cherokee – 25
30. Jeep Compass – 26
31. Jeep Patriot – 26
32. Jeep Renegade – 27
33. Kia Sorento – 24
34. Kia Sportage – 24
35. Land Rover – 24
36. Lexus NX 200t – 25
37. Lexus NX 300h – 33
38. Lexus RX 450h – 30
39. Lincoln MKC – 23
40. Mazda 5 -24
41. Mazda CX-5 – 29
42. Mercedes-Benz CLK250 – 28
43. Mercedes-Benz GLA250 – 29
44. Mitsubishi Outlander – 28
45. Nissan Murano – 24
46. Nissan NV200 Cargo – 25
47. Nissan Pathfinder – 23
48. Nissan Pathfinder Hybrid – 26
49. Nissan Quest – 22
50. Nissan Rogue – 28
51. Subaru Outback – 28
52. Subaru XV Crosstrek Hybrid – 31
53. Subaru Forester – 27
54. Toyota Highlander Hybrid – 28
55. Toyota Rav4 – 26
56. Toyota Tacoma 2.7L – 22
57. Toyota Venza – 23
58. Volvo XC70 – 27
59. Volvo V60 – 29
60. Volvo XC60 – 27
61. VW Tiguan – 23
62. VW Touareg – 24

*Hybrids/PHEVs/BEVs in red

Creating a Clean, Affordable and Resilient Energy Future for the Commonwealth



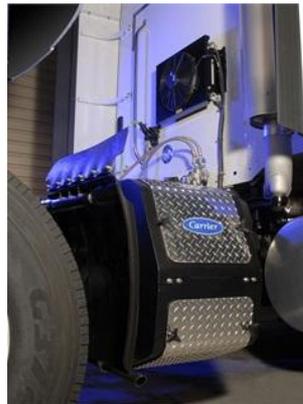
Massachusetts Department
of Energy Resources

VEH102: Advanced Vehicle Technologies, Equipment and Supplies

- Available Mid-July 2016
- Three Service Categories:
 1. EV Charging Stations, Software and Services
 2. Idle Reduction Technologies
(Light, Medium & Heavy Duty Vehicles & Equipment)
 3. After-Market Alt. Fuel Conversion Technologies
(Light, Medium & Heavy Duty Vehicles)



EV Charging Stations



Auxiliary Power Unit



Propane Truck Conversion

Creating a Clean, Affordable and Resilient Energy Future for the Commonwealth



LBE DOER

May 17, 2016

Presenter

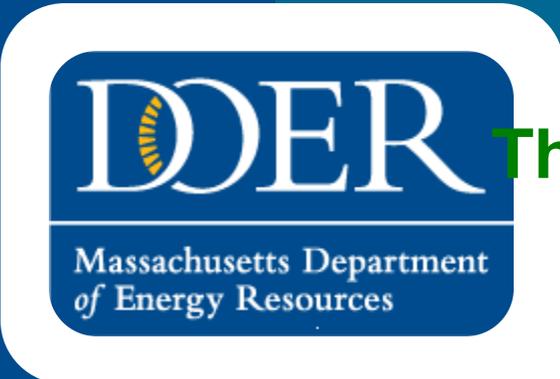
Stephen Russell

Stephen.russell@state.ma.us

Clean Cities' Mission

To advance the energy, economic, and environmental security of the U.S. by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption in the transportation sector.

- Sponsored by the DOE's Office of Energy Efficiency and Renewable Energy's Vehicle Technologies program
- Provides a framework for businesses and governments to work together as a coalition to enhance markets
- Coordinate activities, identify mutual interests, develop regional economic opportunities, and improve air quality



**The Massachusetts coalition:
Housed in the Department of Energy
Resources office.**

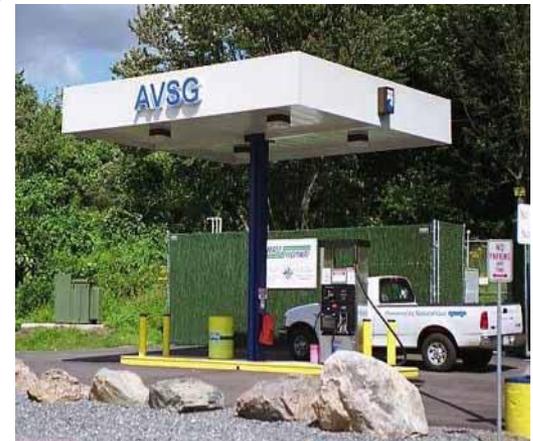
**It has a director and co-director:
Stephen Russell and Mike Manning.
We hold stakeholder meetings every 2**



Biodiesel

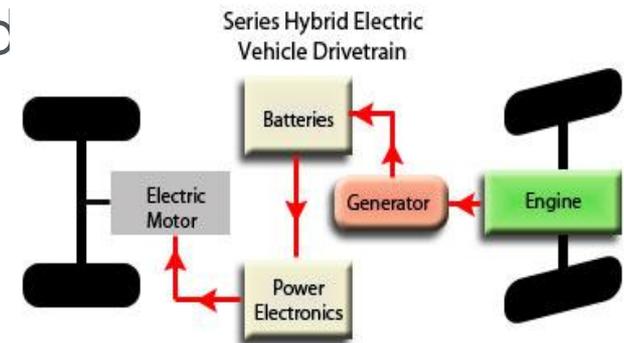


EVs



Natural gas

- Clean Cities are a resource to both public and private fleets.
- They are a catalyst to match fleets with resources needed.
- They are the go-to folks for technical resources for alternative fuels and



Alternative Fuels

- Biodiesel (B100)
- Electricity
- Ethanol (E85)
- Hydrogen
- Natural gas
- Propane



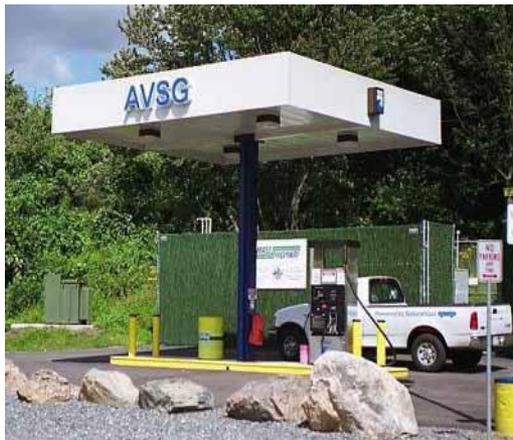
Fuel Blends – commonly used

- Biodiesel/diesel blends (B2, B5, B20)
- Ethanol/gasoline blends (E10)
- Hydrogen/natural gas blends (HCNG)
- Diesel/CNG

Massachusetts has Alternative fuel infrastructure



- 433 public Charging stations with over 1,082 Charge points
- 20 CNG filling stations both public and private
- 2 Biodiesel (B-20) stations
- 19 Propane stations (autogas)
- 8 E-85 stations
- 1 Hydrogen station



Worcester RTA
Battery electric
Bus

How do you locate alternative fueling stations in Massachusetts go to:
<http://www.afdc.energy.gov/locator/stations/>



Massachusetts Department
of Energy Resources

- **Fuel Economy**
- Fuel efficiency
- Behavioral changes
- Vehicle maintenance initiatives
- Vehicle miles traveled (VMT)



- **Hybrids**
- Light- and Heavy-duty HEVs
- PHEVs



- **Idle Reduction**
- Heavy-duty trucks
- School buses
- Truck stop electrification



Espar Pre-Heaters for Buses

- CNG Cleaner Less \$ alternative to Diesel fuel.
- Hybrids – in the right application can mean a fuel savings of over 30%.
- Battery electric vehicles will operate at \$1.00 per gallon equivalent.
- Biodiesel (B20) can increase MPG by 1 to 2 miles and is cleaner
- Autogas(propane) lower cost conversion.
- Hydrogen fuel cell vehicles are about 1-2 years away

CNG VEHICLES

Medium-duty: Vans and Shuttles.



- Official announcement on Earth Day 2013
- Phase I and II : Close to \$1,100,000 Awarded
 - 38 entities awarded
 - One State Agency
 - 3 Public Universities
 - 34 Municipalities
 - Vehicles and Charging Stations Awarded
 - 31 Plug-In Hybrid Vehicles (PHEVs)
 - 81 Battery Electric Vehicles (BEVs)
 - 37 Level 2 Dual Head Charging Stations



- Public Entities
 - Municipalities
 - Public Universities and Colleges
 - State Agencies
 - Public Driving Schools
- Private Entities
 - Private Universities and Colleges
 - Private Driving Schools
- Program Requirements
 - Will commit to using the vehicle in the Commonwealth for at least 36 months
 - Entities must purchase at least one battery electric vehicle to received incentive for charging station
 - Charging station must be publicly accessible and space used specifically for electric vehicles



- Application period: **FIRST COME FIRST SERVED**
- Complete and submit to MassDEP an Application Form
- Form and instructions found at:
www.mass.gov/eea/agencies/massdep/air/grants/massevip.html
- Applications are reviewed
- MassDEP will issue a Grant Approval within 30 days of receipt of the application
- Entity must sign an End-User Agreement
- Upon receipt of the signed End-User Agreement by MassDEP, entity has 1 year to acquire vehicle(s) and/or proceed with Level 2 charging station



Important Web Sites and Resources



Clean Cities Web site

www.eere.energy.gov/ccities

Alternative Fuels & Advanced Vehicles Data Center Web site

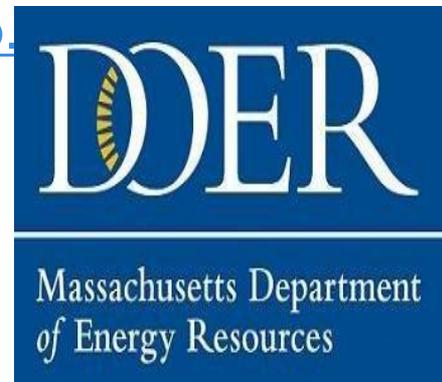
www.eere.energy.gov/afdc

Clean Cities Coordinator Contact Information and Coalition Web sites

<http://www.afdc.energy.gov/cleancities/progs/coordinators.php>

Massachusetts Electric Vehicle Incentive Program web site:

www.mass.gov/eea/agencies/massdep/air/grants/massevip



For information on alternative fuel vehicles and the Clean
Vehicle grant program contact:

Stephen Russell

Massachusetts Clean Cities Coalition

www.mass.gov/energy/cleancities/

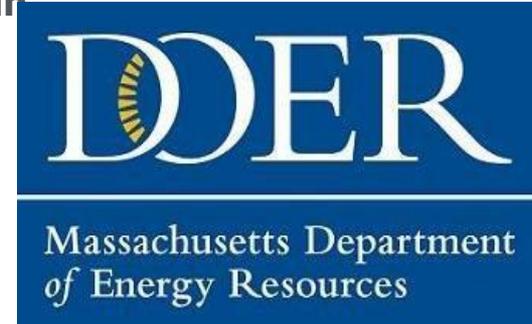
Michelle Broussard

Michelle.broussard@state.ma.us

For information on the MASSEVIP program at DEP
contact:

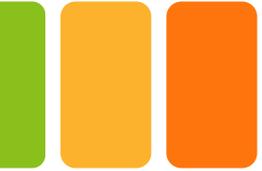
Sejal Shah

Sejal.shah@state.ma.us



Recycling/Composting Programs and Updates

Recycling Works in Massachusetts



RecyclingWorks in Massachusetts

- Helps businesses and institutions
- Maximize waste diversion
- Save money
- Waste Ban Compliance
- Customer/Employee satisfaction
- Funded by MassDEP, delivered under contract by the Center for EcoTechnology



RecyclingWorks in Massachusetts

- Services include:
 - Online Resources
 - Email and Phone Hotline
 - Technical Assistance
 - Events and Workshops
 - WasteWise, C&U Program Administration



Technical Assistance for Generators:

- Services include:
 - Evaluation of current systems
 - Cost Analysis of available options
 - Design of customized diversion program
 - Employee training and signage
 - State facilities and equipment grants

Brockton Superior Court

- Single-stream recycling bins
- State equipment grant
- “We do have the bins in the Court House now – they love them. Thank you again for your help with the program.”



Construction & Demolition BMPs

- Stakeholder engagement process, increase recycling of C&D materials
- Three multi-stakeholder meetings across the state
- Eastern Meeting: June 23, MassDEP in Boston



Harvard Workshop

Reduce and Recover

RRR
SAVE FOOD
FOR PEOPLE

June 28-29, 2016

Harvard Law School | Cambridge, MA

<http://www.recyclingworksma.com/events/getting-started-food-donation-workshop/>



MassArt: Case Study

- Worked with RecyclingWorks to set up a post-consumer program
- Sending food waste for composting




Call our Hotline
1 (888)-254-5525
info@recyclingworksma.com
www.recyclingworksma.com

Food Waste Diversion Case Study

Massachusetts College of Art and Design Boston, MA

Summary: Massachusetts College of Art and Design (MassArt) is a public college offering undergraduate and graduate programs in art and design. MassArt has been diverting pre-consumer food waste in the kitchen prep area since February, 2012. In October of 2014 MassArt rolled out compost collection of post-consumer cafeteria waste. MassArt and Chartwells, their foodservice provider, have worked collaboratively to implement a comprehensive waste diversion program that captures compostable and recyclable materials both in their kitchen prep area and in their cafeteria.

At-A-Glance:

- MassArt's cafeteria serves approximately 4,500 meals daily.
- Food waste diversion began with diverting food scraps in the kitchen in 2012. In October 2014, post-consumer collection began.
- MassArt's program is forecast to divert 90 tons of waste annually.
- Adjustments to MassArt's hauling service have cut organics hauling costs by 50%.

Profile: MassArt has a single dining facility that serves approximately 4,500 meals daily to students from both MassArt and the Massachusetts College of Pharmacy and Health Science (MCPHS). The dining facility is operated by Chartwells. The facility has a small loading dock that must accommodate both deliveries and waste removal. Prior to working with RecyclingWorks, waste was collected into three types of containers: a compactor for trash, a mini-compactor for single stream recycling, and wheeled carts for food waste.

Because all food is served on disposable servi cafeteria generates more than four yards of w recycled.




MassArt: Case Study



<https://www.youtube.com/watch?v=7YLuaPn8QIk>



Cate Foley

Cate.Foley@cetonline.org

413-586-7350 x240

www.cetonline.org

www.recyclingworksma.com

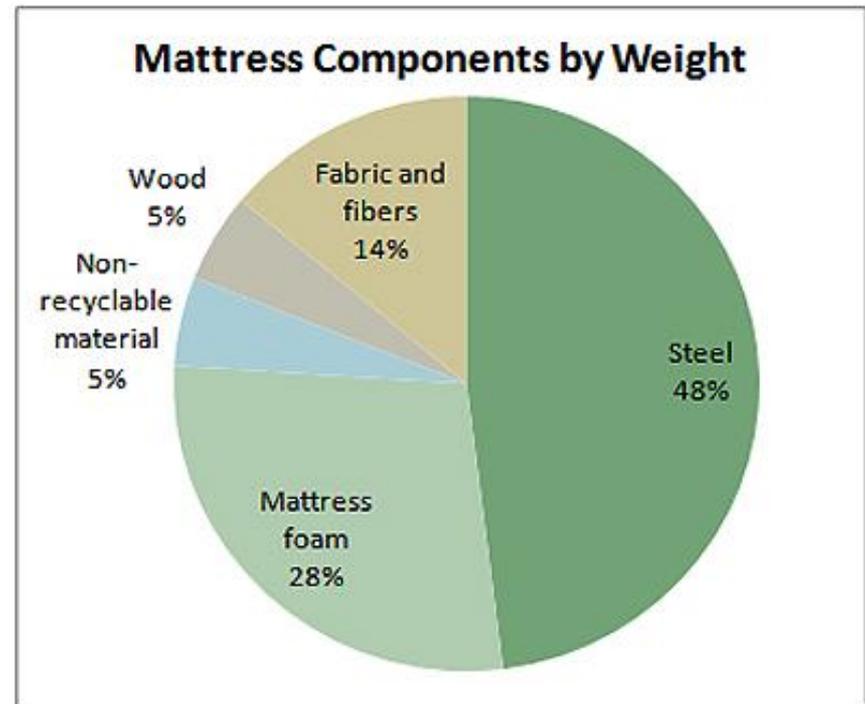
888-254-5525



we make green make senseSM

Mattress Recycling Contract and Survey

- LBE Mattress Disposal Survey
- FAC90: Mattress Recycling Contract
 - 3 vendors available
- Recycling can be cost effective option



[MassDEP](#), 2016

Mattress Survey

- Does your facility regularly dispose of mattresses?
- Do you know how (approximately) many and how much they weigh?
- How are you disposing of them?
- Do you get charged a special disposal fee for mattresses?

LBE Updates

Sustainability Challenge

| Sustainability Challenge Topics |
|---|
| Challenge #1: Lighting reduction strategies |
| Challenge #2: Reduce plug loads |
| Challenge #3: Implement Computer Power Management |
| Challenge #4: Create an effective operations and maintenance program |
| Challenge #5: Promote paper reduction strategies |
| Challenge #6: Establish recycling and waste reduction programs |
| Challenge #7: Implement Environmentally Preferable Purchasing Program |
| Challenge #8: Implement alternative transportation strategies |
| Challenge #9: Create environmental awareness |
| Challenge #10: Innovate |

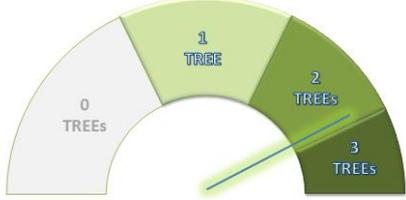



Leading by Example Sustainability Challenge

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

78

points



*TREE = Tracking & Rating Environmental Efforts

Well done! Your score earned a Two TREES rating in the Leading by Example Sustainability Challenge! Your score reflects noteworthy sustainability accomplishments and dedicated efforts. Your sustainability initiatives are contributing to broader efforts to reduce the environmental impact of state government operations, and you are on the path towards a top-tier sustainability program. LBE recommends using this score as a baseline metric to measure your sustainability progress. We encourage you to use the resources on the LBE website, and to contact us if you need additional information, assistance, or guidance. Thanks!

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 (in areas without motion sensors or daylighting capabilities) | Answer options: <input type="button" value="Select"/> |
| 2 Work with utilities and/or DCAMM to install daylighting photosensors in at least 50% of applicable space (e.g. areas near windows or lots of natural light) | <input type="button" value="Select"/> |
| 3 Eliminate the use of incandescent bulbs, replacing them with more efficient light bulbs | <input type="button" value="Select"/> |
| 4 Distribute more efficient replacement bulbs to staff, faculty, students, etc. for their own task lighting | <input type="button" value="Select"/> |
| 5 Work with utilities and/or DCAMM to install motion sensor lighting controls in at least 50% of applicable space (e.g. conference rooms, storage areas, bathrooms, individual offices, etc.) | <input type="button" value="Select"/> |

Fact: LED bulbs can reduce energy use by more than 80% compared to traditional incandescent bulbs and last more than 25 times longer.*

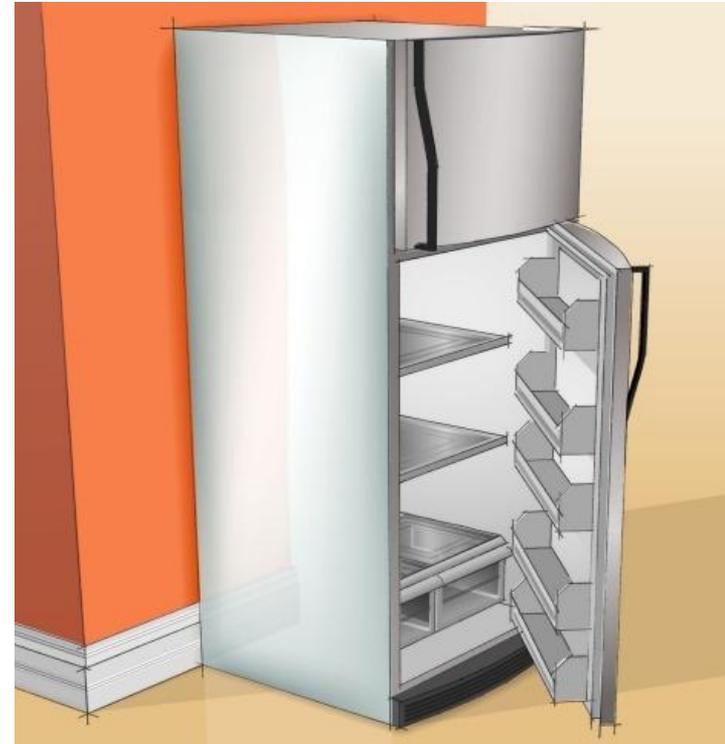
Resources:
[US DOE Top 8 Things You Didn't Know about LEDs](#)
[Find Environmentally Preferable Products on Statewide Contract](#)
[ENERGY STAR LED Information](#)

Challenge #2: Reduce plug loads (e.g. any power usage not hardwired into building) (maximum of 11 points)

| | |
|--|--|
| 1 Provide/distribute advanced power strips for electronic devices (e.g. with motion sensors or timers) | Answer options: <input type="button" value="Select"/> |
| 2 Activate energy saving modes for office equipment (copiers, printers, faxes, etc.) once installed on | <input type="button" value="Select"/> |
| 3 Establish policy to limit the use of additional plug loads (such as excess coffee pots, space | <input type="button" value="Select"/> |

Refrigerator Survey

- LBE developing survey on refrigerators inventory
- Goal: Identify potential energy-saving opportunities:
 - Upgrading to more EE models
 - Down-sizing units
 - Consolidating units
- LBE emailing survey in coming weeks



[US DOE](#), 2016

Energy/Sustainability Programs Information

- LBE document on key energy/sustainability programs available
- Recommended for distribution to employees and new hires
- Easy way for anyone to sign-up for LBE Email list?

Massachusetts Sustainability Programs



Information on sustainability programs encouraged to be utilized by state employees.
Funding availability and/or eligibility may be limited based on specific criteria.
All programs, except the Commonwealth Employees MBTA Pass Program benefit, are intended for the Massachusetts public, not solely state employees.

Residential Efficiency Programs

- MassSave is an initiative sponsored by Massachusetts' natural gas and electric utilities and energy efficiency service providers.
- MassSave provides:
 - No-cost 5-minute online home energy assessment
 - No-cost in-home home energy assessment
 - Rebates and incentives for energy-saving products and solutions
 - Specific programs for homeowners, renters, multi-family buildings, income-eligible residents, and businesses



masssave.com

National Connections

- LBE Interstate Network
- Better Buildings Challenge
- U.S. Department of Energy Accelerators
- U.S. Department of Energy Alliances
 - Commercial Real Estate
 - Hospitality
 - Higher Education
 - Healthcare
 - Retail

The Better Buildings Alliance brings together national leaders to share and advance solutions in energy efficiency. Building owners, operators, and managers in different market sectors voluntarily work with DOE's network of research and technical experts to develop and deploy innovative, cost-effective, energy-saving solutions that lead to advanced technologies, more profitable businesses, and better buildings.

Upcoming Events

- Next LBE Council Meeting: July 12

Webinars

- LEEP: Success Stories from the Parking Lot, May 24, [Register here](#)
- Electric Vehicles, May 31, DOER to send out link
- CURC: Recycling & Waste Reduction in College Residence Halls, June 9, [Register here](#)