

Leading By Example Council Meeting

January 14, 2014

Agenda



- Welcome & Introductions
- Food Waste Diversion Update
- LBE Updates
- Solar PV Updates
- Vendor Presentation
- Outreach and Education Discussion
- GHG Emissions Progress Report
- New Business
- Tour of LEED Gold Dorm

Proposed Commercial Organics Ban

- Expect to have final regulations published soon
- Original proposed date July 1, 2014
- Would apply to businesses/institutions that dispose of one ton or more/week in trash
- MassDEP also stepping up compliance and enforcement work on existing waste bans



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RecyclingWorks Information and Resources

- Hotline or email questions
 - (888)254-5525 or
info@recyclingworksma.com
- Website – [find a service provider/facility](#)
- [Options for how to comply](#)
- Food Waste [Collection](#) BMPs
- Direct technical assistance – contact hotline
- Video: [Worcester State University Case Study](#)



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Food Diversion - UMass Amherst Award

- UMass Amherst recently won awards from MassRecycle and the U.S. EPA for achievements in recycling food waste as well as paper, plastic and metal
- EPA's Regional Office recognized the campus as one of nine national winners of the 2013 Food Recovery Challenge
- UMass Amherst increased waste diversion in 20 dining venues by moving to trayless dining and using compostable to-go containers and cutlery
- Students have proposed a student-run composting business with a bicycle pick-up service
- UMass Amherst annually composts more than 1,400 tons of solid food waste



UMass hopes to build one of the largest anaerobic digestion facilities in the state, to turn food scraps, manure and other organic-based waste into a biogas for green energy

LBE Updates – NECC Event

- Northern Essex Community College event scheduled for Late January
- First large site complete under AEP
- Emissions and Cost reductions 25% or greater



Accelerated Energy Program Update

- AEP Status updates
- AEP Upcoming Meetings
 - Leadership Steering Committee
 - AEP Implementation
- AEP Tools -Updates
 - Facility “Inreach Kit”
 - Retrox
 - Towards ZNEB

PPA Guidance Issued

- Guidance reviews PPAs and NMAs issues specific to state agencies
- Reviews procurement options
 - Exempt from competitive process if go through 3rd party purchasing cooperative working on behalf of public entity, including lease provisions
 - Competitive process
- Overview of net metering, difference between PPA and NMA, project eligibility, issues to consider , etc.

LBE Updates – EEMS Top 10

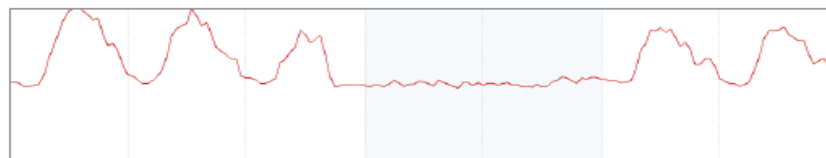


Top 10 Things to Do with EEMS Data

This list of Top 10 Things to Do with Enterprise Energy Management System (EEMS) Data can help you find energy savings and keep your buildings running smoothly. Keep this list as a handy reference and use it to link to reports and specific sections of the portal. You will need your login ID and password to access the Information.

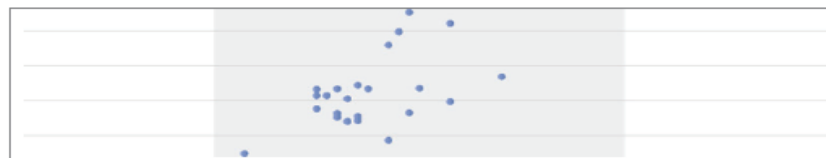
1. Are your buildings running while they are unoccupied?

- Buildings often start up too early or shut down too late and can run on weekends, during holidays, or when classes aren't in session.
- Find out what time your buildings start up and shut down and if they run on the weekends using [Profiling](#).



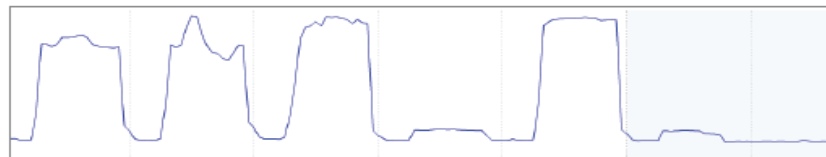
2. When does your peak demand occur?

- Peak demand charges can be as much as 30% of your total electricity bill.
- Run the [Peak Demand Identification](#) report on a monthly basis to see when your peaks occur and how much money you could save.



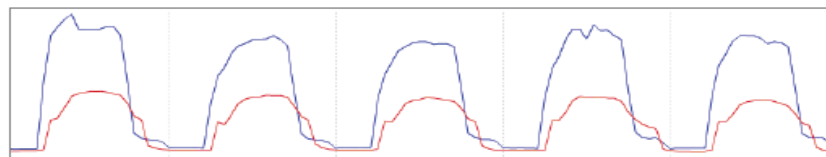
3. Are you saving on holidays?

- Most buildings' holiday usage profiles should look similar to Sundays or another unoccupied day.
- A great way to check your holiday usage is to run the [Compare Usage for Two Periods](#) report on the portal and include a week that includes the holiday and the week preceding the holiday.



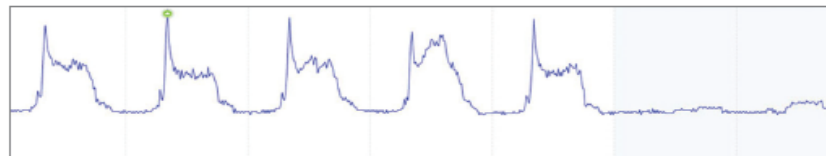
4. Are your buildings setting back as much as possible?

- A good building sets back 50% at night, a great one sets back 75%.
- Running the [Night Shutdown Analysis](#) report every quarter will let you know where your buildings stand.



5. Does starting your building cause demand spikes?

- Peak load demand charges can occur in the morning when most of your equipment is first starting up.
- Identify peak demand spikes by viewing your [Profiling](#) data now. Looking at your data in 15-minute or 1 hour intervals in a 7-day range once a month can provide visibility into demand spikes.



LBE Update – Water Devices & LED bulbs

Device	Quantity	Estimated NG Annual Savings (Therms)
Commercial Grade Showerhead / 1.5 gpm - N2150-CH	405	21,060
Commercial Grade Tamperproof Showerhead / 1.5 gpm - N2150-CH-TP	233	12,116
Faucet Aerators / 0.5 gpm - N3205N	826	14,042
Faucet Aerators / 1.0 gpm - N3210N	1,230	20,910
Spray Valves / 1.28 gpm - N2180	22	2,772
Standard/massage, chrome Showerhead / 1.5 gpm - N2915-CH	338	17,576
TOTAL	3,054	88,476

Water Savings Devices

Deadline to Order FREE Water Savings Devices: January 15th

Agencies to Date

MMA, STCC, UMass Amherst, MCLA

LEDs

Another opportunity for no-cost LED s (GE) expected to be released in Spring 2014

LBE Update – Capital Budget

- \$15 Million in Funding
- Non-Building Efficiency, such as outdoor lighting, street lighting, dams, bridges, tunnels, etc.
- Financing for projects to be paid back out of operational savings resulting from efficiency measures
- Initial Project: Inventory underway of DCR street lights
- LBE Staff position – 2/3/14 deadline



LBE Update – Renewable Grants

Department of Conservation and Recreation - Wachusett Mt	Approved Pellet Boiler Installation	\$ 113,400	Underway
5 additional applications in review process	CHP, Air & Ground Source Heat Pumps, Solar Thermal,	\$910,435	In Review

- Total of \$2.5 million available
- Feasibility Study and Project Grant Applications still being accepted for:
 - Solar thermal
 - Biomass
 - Geothermal
 - Air Source Heat Pumps
 - CHP

LBE Update – Revolving Loan Fund Grant

- \$283,530 grant from U.S. DOE to DOER
- With DCAMM, establish RLF for smaller projects
- Grant help to establish fund parameters, documents, processes, etc. and hire initial staff
- RLF to fund smaller projects with shorter paybacks not applicable for bond financing
- Loans to be paid for out of savings
- Establish RLF by Fall 2014
- Focus group of agencies to be established



Clean Water
State Revolving Fund



DOER

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LBE Update – EPA Recent Boiler Rules

1. National Emission Standard for Hazardous Air Pollutants (NESHAP) for **Major Source** Industrial, Commercial, Institutional Boilers and Process Heaters
2. NESHAP for **Area Sources**: Industrial, Commercial, and Institutional Boilers,
3. Energy Assessment Requirements

- A Major Source of Hazardous Air Pollutants (HAP) has the facility-wide potential to emit ≥ 10 tons/year (tpy) of a single HAP or ≥ 25 tpy of combined HAPs (10-20 in Mass. – only 1 potential state site)
- Area Sources – not a major source of HAP
 - Facility-wide potential to emit <10 tpy of a single HAP or <25 tpy of combined

HAPs



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Area Source Exclusions

- Hot water heaters with a capacity of no more than 120 gallons combusting oil, gas or biomass.
- Gas, oil, and biomass hot water boilers (e.g., not generating steam) rated at less than 1.6 million Btu per hour are included in this definition and not covered by the rule
- Gas-fired boilers that burn gaseous fuels not combined with any solid fuels
- Other exclusions: Residential Boilers, Temporary Boilers, Electric Boilers, Boilers burning waste, Process Heaters, Research and Development Boilers, Boilers Used as Control Device, Boilers covered by another Part 63 Rule, and Electric Utility Steam Generating Units covered by Part 63 Subpart UUUUU

Area Source Rules

- Applies to a facility which emits less than 10 tpy of any single HAP and less than 25 tpy of any combination of HAP.
- Rule applies to coal, biomass, and oil-fired boilers. Rule does NOT apply to gas-fired boilers

Table 1. Summary of Boiler Area Source NESHAP Emission Limit and Work/Management Practice Requirements

Subcategory			Summary of Requirement
Existing large area source boilers ¹	i.e., commenced construction or reconstruction of the boiler on or before June 4, 2010; greater than or equal to 10 MMBtu/hr	Gas (all types)	<ul style="list-style-type: none"> • No requirements (not covered by the rule)
		Coal (excluding limited-use boilers)	<ul style="list-style-type: none"> • Numeric emission limits for mercury (Hg) and carbon monoxide (CO) • One-time energy assessment
		Biomass and Oil	<ul style="list-style-type: none"> • Tune-up every other year or every 5 years • One-time energy assessment • No numeric emission limits
		Limited-use coal	<ul style="list-style-type: none"> • Tune-up every 5 years • No energy assessment • No numeric emission limits
Existing small area source boilers ¹	i.e., commenced construction or reconstruction of the boiler on or before June 4, 2010; less than 10 MMBtu/hr	Gas (all types)	<ul style="list-style-type: none"> • No requirements (not covered by the rule)
		Coal, Biomass and Oil	<ul style="list-style-type: none"> • Tune-up every other year or every 5 years • No numeric emission limits

Table 1. Summary of Boiler Area Source NESHAP Emission Limit and Work/Management Practice Requirements

Subcategory			Summary of Requirement
New large area source boilers ²	i.e., commenced construction or reconstruction of the boiler after June 4, 2010; greater than or equal to 10 MMBtu/hr	Gas (all types)	<ul style="list-style-type: none"> No requirements (not covered by rule)
		Coal (excluding limited-use boilers)	<ul style="list-style-type: none"> Numeric emission limits for Hg, CO, and particulate matter (PM)
		Biomass and Oil (excluding limited-use and seasonal boilers)	<ul style="list-style-type: none"> Numeric emission limit for PM³ Tune-up every other year or every 5 years
		Limited-use coal	<ul style="list-style-type: none"> Tune-up every 5 years No numeric emission limits
		Limited-use and seasonal biomass and oil	<ul style="list-style-type: none"> Tune-up every 5 years No numeric emission limits
New small area source boilers ²	i.e., commenced construction or reconstruction of the boiler after June 4, 2010; less than 10 MMBtu/hr	Gas (all types)	<ul style="list-style-type: none"> No requirements (not covered by the rule)
		Coal, Biomass and Oil	<ul style="list-style-type: none"> Tune-up every other year or every 5 years No numeric emission limits

² A new or reconstructed dual-fuel gas-fired boiler that meets the applicability criteria of subpart JJJJJ after June 4, 2010 due to a fuel switch from gaseous fuel to solid fossil fuel, biomass, or liquid fuel is considered to be a new source.

³ New oil-fired boilers that combust only oil with no more than 4% by weight of sulfur and are not subject to a PM emission limit under this subpart and that do not use a post-combustion technology (except a wet scrubber) to reduce PM or SO₂ emissions are not subject to the PM emission limit.

EPA Boiler Rules - Continued

Energy Assessment Requirements

Area Source Rule

- Required for existing oil, biomass, and coal-fired boilers with design heat input capacity of 10 MMBtu/hr or greater, except limited-use boilers
- One-time assessment
- Conducted by *qualified energy assessor*
- Must be completed by March 21, 2014
 - Energy assessments completed after January 1, 2008 that meet (or are amended to meet) requirements may be used in lieu of new assessment and the energy assessor qualifications waived
- Source operating under an energy management system compatible with ISO 50001 satisfies the energy assessment requirement



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SREC II Draft Regulations Updates

Regulation Steps:	Dates to note:
Public Hearing	January 24, 2014 at the Gardner Auditorium, Massachusetts State House, Boston, MA 02133 from 1:00pm to 3:00pm
Public Comment Period	January 3rd – January 29th, 2014

- Any interested party may submit written comments to: DOER.SREC@state.ma.us, with the word “COMMENTS” in the subject line



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SREC II Pricing

Compliance Year	SREC II Clearing Price / MWh	ACP Rate per MWh
2014	\$300	\$375
2015	\$300	\$375
2016	\$300	\$350
2017	\$285	\$350
2018	\$271	\$350
2019	\$257	\$333
2020	\$244	\$316
2021	\$232	\$300
2022	\$221	\$285
2023	\$210	\$271
2024	\$199	\$257
2025 and after	Announced by the Department no later than January 31, 2015 for 2025, and annually thereafter.	To be added no later than January 31, 2015 and annually thereafter

SREC II Factor by Market Sector

Market Sector		SREC Factor
A	Parking Canopy, Emergency Power Generation, Community Shared Solar, or any Unit with a capacity ≤ 25 kW.	1.0
B	Building Mounted, or ground mounted Unit with a capacity > 25 kW with 67% or more of the electric output on an annual basis used by an on-site load.	0.9
C	Landfill or Brownfield, or a Unit with a capacity of ≤ 500 kW with less than 67% of the electrical output on an annual basis used by an on-site load.	0.8
Managed Growth	Unit that does not meet the criteria of Market Sector A, B, or C.	0.7

LBE Update – REC Contract

- New contract in process of being awarded
- 3 vendors
- Vendor 1: Sale of SRECs (solar) & AECs (CHP, flywheel, other APS renewable energy systems)
- Vendor 2: Sale of Class 1 RECs (solar, wind, hydro, AD)
- Vendor 3: Purchase of RECs
- Contract in Place January 2014

Solar PV – LBE Solar Carport PPA Grant

- Support large scale solar PV installation on state land through PPAs
- Target parking lots, carports, etc.
- Multiple benefits (shading, reduce urban heat island effect)
- Subsidize cost to make installation cost-effective
- Subsidize additional elements, e.g. EV charging stations, rainwater collection systems, etc.
- Innovative solar technologies or strategies



Solar PV – LBE Solar Carport PPA Grant (2)

- Grant target release date February 21, 2014
- Be aware of net metering limits/caps
 - Utility NM caps already or nearly reached
 - Individual agency 10 MW net metering caps
- Agency preview of grant application

Vendor Presentation

Crowd Comfort

Outreach and Education

LBE Draft Priorities for CY 2014

Sustainability Challenge

Quarterly LBE webinars

Coordinated outreach to LBE stakeholders for Green Communities webinars

Create a quarterly guest blog opportunity for agency or campus to highlight sustainability initiatives

Promote sustainability/energy outreach opportunities for state employees/students, visitors, etc. (e.g. MassSave, MassRIDES)

Earth Day Pledge for state employees

Create a template statewide energy policy aimed at reducing unnecessary energy consumption and post sample energy policies on website

Provide support letters for LBE work to agency commissioners and college presidents as part of the release of LBE Progress Report

Host technology vendor fair

Create posters to promote various messages of sustainability. (i.e. turn the lights off, conserve water, reduce paper consumption)

Commonwealth GHG Emission Progress Report

- Exec Office of Energy and Environmental affairs GHG Emission Reduction Progress Report
 - <http://www.mass.gov/eea/air-water-climate-change/climate-change/massachusetts-global-warming-solutions-act/>
- 1990 Baseline – 94 million MT CO2 equivalent
- 2010 – 84 million MT CO2 equivalent (11% reduction)
- 2020 Target – 71 million MT CO2 equivalent (25% reduction)
- LBE Section in Cross Cutting Policies
- Mt. Wachusett CC Case Study