

(Not the typical) Program Overview 2011

Tom Coughlin
Lead - C&I Strategy

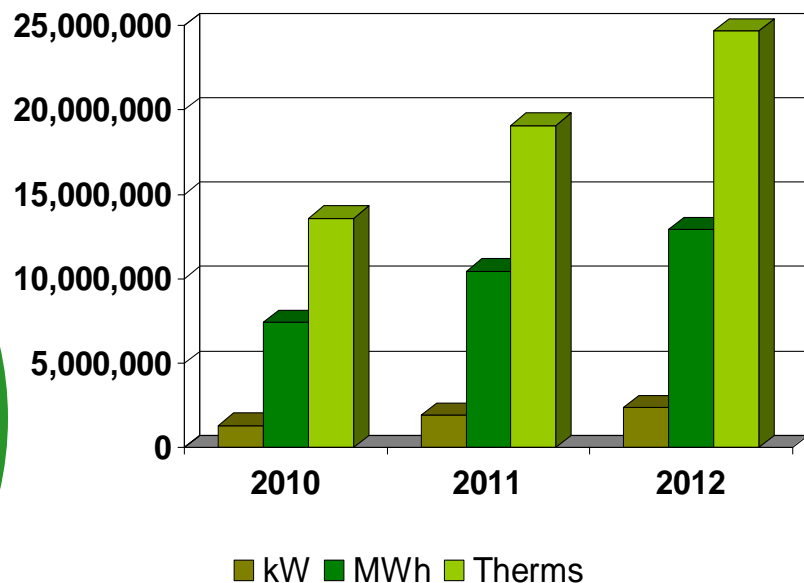
AGENDA

- Brief overview of our programs – a review
- Some new measures we are looking at
- The Massachusetts Technical Advisory Committee (MTAC)
- Cutting edge areas of interest
 - Labs
 - Data Centers
 - CHP
- LED Technology Update

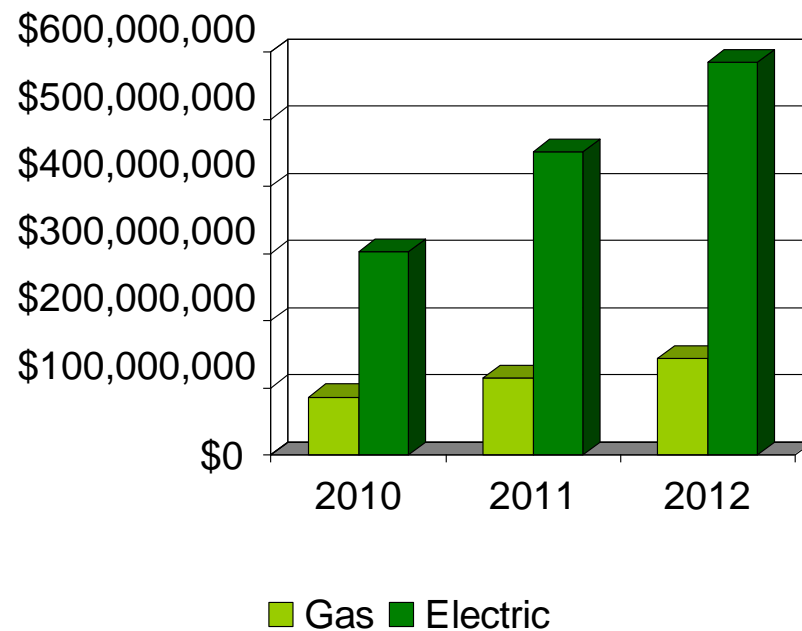


Electric and Gas 2010 - 2012

Electric & Gas Savings



Electric & Gas Budgets





Multi-Administrator Application

Send application to address indicated below for customer's Electric Energy Efficiency Program Administrator.

Electric Program Administrators



Cape Light Compact
P.O. Box 427 SCH.
Barnstable, MA 02630
Tel: 1-800-797-6699
www.capelightcompact.org
efficiency@capelightcompact.com



National Grid
40 Sylvan Road
Waltham, MA 02451-1120
Tel: 1-800-787-1706
www.powerofaction.com/efficiency
efficiency@us.ngrid.com



NSTAR
One NSTAR Way, SW360
Westwood, MA 02090
Tel: 781-441-8592
www.nstar.com
efficiency@nstar.com



Unitil
325 West Road
Portsmouth, NH 03801
Tel: 1-888-301-7700
www.unitil.com
efficiency@unitil.com



Western Massachusetts Electric
The Northeast Utilities System

Western Massachusetts Electric Company
P.O. Box 2010
West Springfield, MA 01090-2010
Tel: 1-800-835-2707
www.wmecc.com
efficiency@wmecc.com

GAS Program Administrators



Columbia Gas of Massachusetts
300 Friberg Parkway
Westborough, MA 01581
Tel: 1-800-232-0120
www.baystategas.com
efficiency@baystategas.com



Berkshire Gas
115 Cheshire Road
Pittsfield, MA 01201
Tel: 1-800-944-3212
www.berkshireregas.com
efficiency@berkshireregas.com



New England Gas Company
P.O. Box 911
Fall River, MA 02722
Tel: 1-508-324-7811
www.negasco.com
efficiency@sug.com



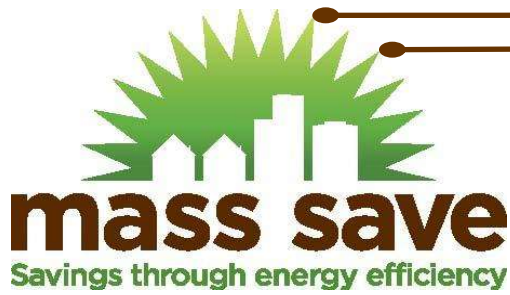
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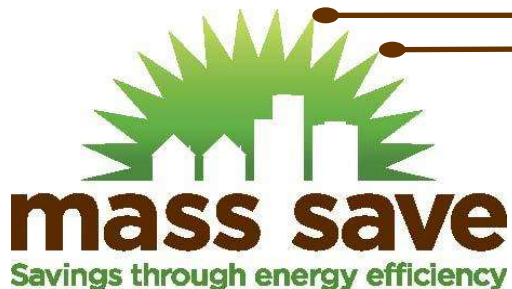
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C&I Energy Efficiency Programs

- **Objective of Programs**

- Improve **standard** practice design
- Expand **understanding** of design options
- Offer **technical assistance** to designers, builders, and owners
- Provide **incentives** to owners saving electrical and gas energy

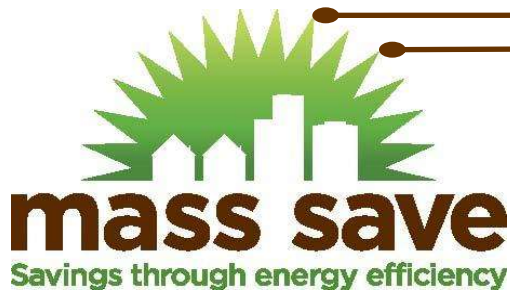


Electric & Gas Integration

Uniform Electric and Gas Programs:

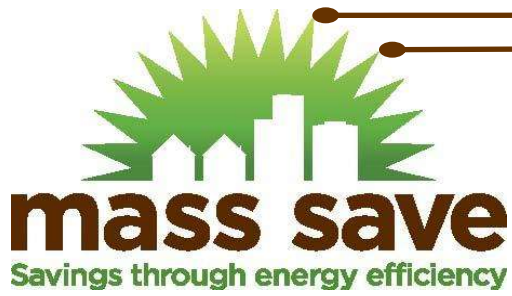
1. C&I Large Retrofit
2. C&I New Construction and Major Renovation
3. C&I Direct Install Program





Electric & Gas Integration 2010

- **Prescriptive** Measures; e.g. *lighting, AC, boilers, controls, motor/drive systems and other common measures* (go to www.masssave.com for more info)
- Common Electric and Gas **Custom** incentive structure
- **Direct Install** Program focuses on retrofit of lighting, energy management systems, refrigeration, and prescriptive gas measures
- **Integrated** Technical Assistance Studies
- **Combined Heat and Power (CHP)**



Program application

RETROFIT
Lighting – Systems & Controls

Choose Program Administrator for Application
 Cape Light Compact National Grid NYS
 S&W Western Massachusetts Electric Company

Customer Information

COMPANY NAME _____ APPLICATION DATE _____
 INSTALLATION SITE _____ PHONE NUMBER _____
 CONTACT PERSON _____ FAX NUMBER _____
 E-MAIL ADDRESS _____ SQ. FT. (comment for this application) _____ STATE _____ ZIP _____
 STREET ADDRESS _____ CITY _____ STATE _____ ZIP _____
 MAILING ADDRESS (if different) _____ CITY _____ STATE _____ ZIP _____
 ELECTRIC COMPANY NAME _____ ELECTRIC ACCOUNT # (in case of shared bill) _____
 GAS COMPANY NAME _____ GAS ACCOUNT # (in case of shared bill) _____

Payment Method

CHECK PAYABLE TO: Vendor/Installer Customer Vendor/Installer
 TAX ID# _____ COMPANY TYPE: Check one: Incorporated, Not Incorporated, Exempt

Vendor Information

VENDOR/INSTALLER _____ STREET ADDRESS _____ STATE _____ ZIP _____
 CONTACT PERSON _____ CITY _____
 PHONE NUMBER _____ E-MAIL _____

Customer Acknowledgment

Pre-Installation — I certify that all statements made in this application are correct to the best of my knowledge and that I have read and agree to the Terms and Conditions on the back of this form. ANTICIPATED COMPLETION DATE: _____ DATE _____
 AUTHORIZED SIGNATURE _____ NAME (print) _____

Post-Installation — I certify that I have seen the Energy Efficiency Measures that have been installed and I am satisfied with their installation. ANTICIPATED COMPLETION DATE: _____ DATE _____
 AUTHORIZED SIGNATURE _____ NAME (print) _____

For Program Administrators Only

Required Inspections	Date	Inspector	Project Costs:
Pre-Inspection			Labour \$:
Post-Inspection		Program Manager	Material \$:
Approved	Date		
Pre-approved Incentive			
Final Incentive			

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NEW CONSTRUCTION
2010 Variable Speed Drive

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 Cape Light Compact National Grid NYS
 S&W Western Massachusetts Electric Company

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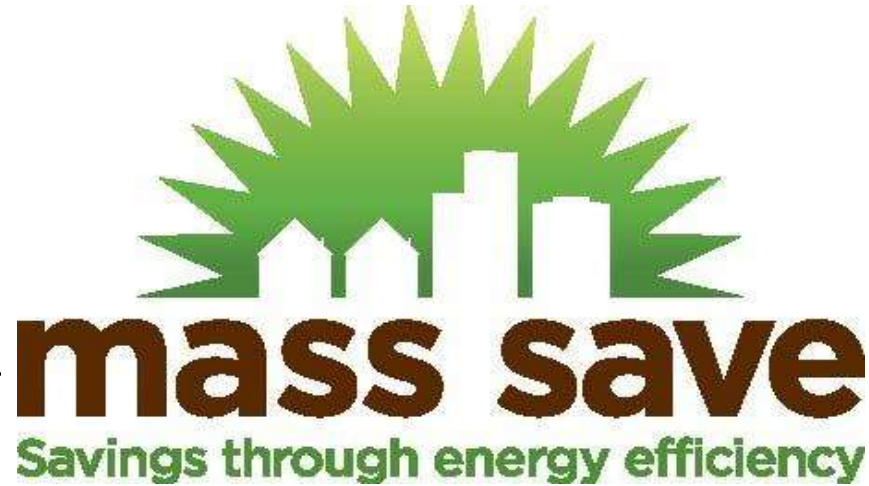
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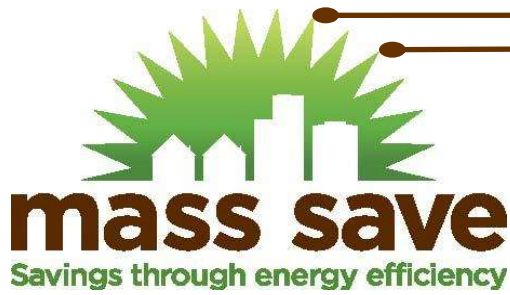
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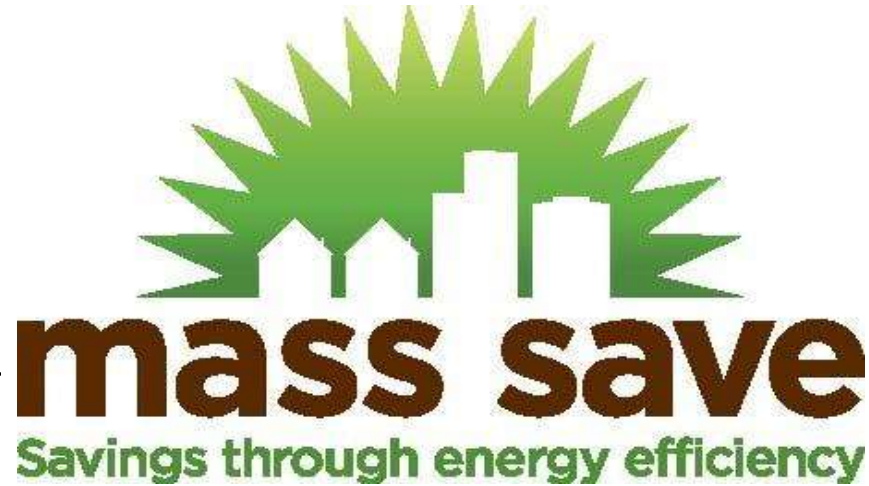


Massachusetts Technical Assessment Committee

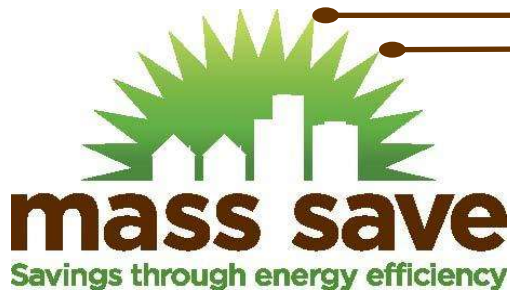


Massachusetts Technical Assessment
Committee
(MTAC)

- A forum to examine new technology and services
- Eligibility criteria and an application process can be found at www.masssave.com
- Click on “For Industry Professionals” then go to right margin and click on “Assessment of Emerging Technologies”



What are some of the hot things we're looking at?



What are some of the hot topics in energy efficiency?

- Commercial Labs
- Data Centers
- Combined Heat and Power
- Solid State Lighting

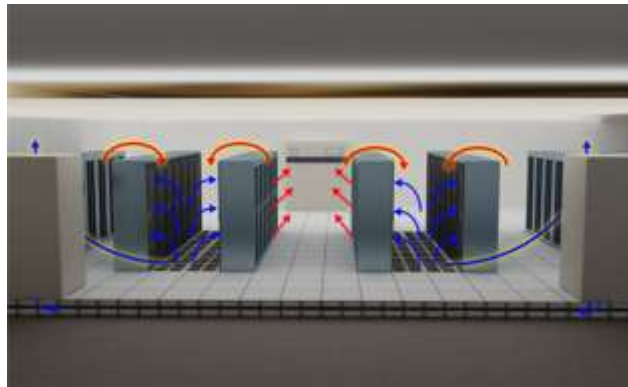
Labs

- Health safety is paramount, of course, but at the expense of energy.
- Facility managers give the health and safety people what they need
- There is a lot of energy left on the table
 - There are opportunities in air management and lighting to name two.



Data Centers

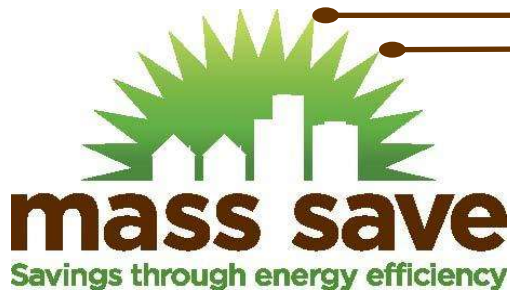
- Cooling, air flow and power management are big opportunities
- Barriers:
 - Facilities managers give IT what they want, cooling and reliability
 - A lot of experts in “emerging technology” but it’s inconsistent and not mainstream.



Data Centers

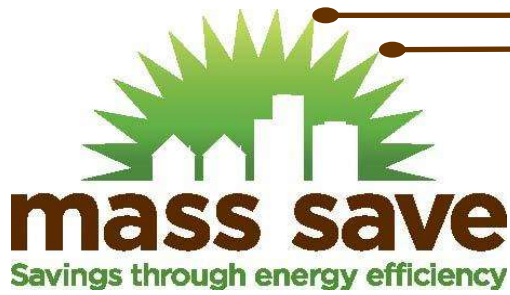
- HVAC (Partial List)
 1. In row cooling
 2. Hot Aisle or Cold Aisle Containment
 3. Ceiling plenum returns to CRAC units
 4. Free cooling
 5. Fan VFD's
 6. Ultrasonic humidification
- A lot of options for better power management





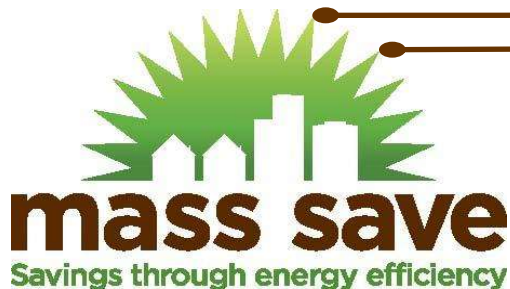
CHP as an Electric Energy Efficiency Measure...

- Green Communities Act of 2008 now recognizes CHP projects as an Energy Efficiency Measure eligible for Incentive Funding by Program Administrators (“Utilities plus Cape Light Compact”)
- Compared to prior marketing-focused Gas Utility Incentive programs, the Electric program CHP incentive has increased but so have the approval requirements



CHP Program Incentives

- 1st 150 kW at \$750 per kW
- Over 150 kW, capped at \$750 per kW
- Up to 50% of Installed Cost
- May be subject to Program Administrator Budget Limitations



Some of the things we're looking for

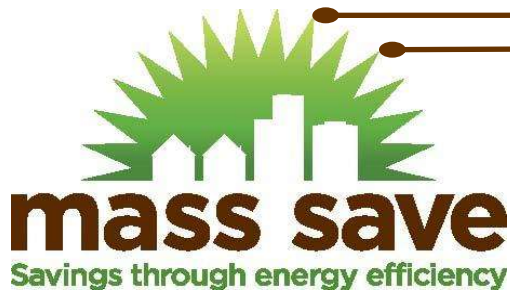
- Facility Use/Mechanical Description
- Isolate Thermal Loads available for offset by a CHP Unit
 - Seasonal (space heating)
 - Daily Profiles of Thermal Loads (i.e. domestic hot water)
 - Constant Loads (i.e. process)
- CHP Installed and Maintenance Costs
- CHP System Detail
 - Make/Manufacturer/Type
 - kW, Heat Rates, Thermal Output (type and quantity)
 - Parasitic Loads
 - Methods of Control
- Hourly modeling: Total Pre- vs. Post-CHP and resulting changes in:
 - Facility Fuel Use and breakdown (Fuel to CHP unit, Boiler Fuel Savings, other uses)
 - Facility kWh including any exporting of CHP power produced
 - Facility kW

Emerging Technologies – Solid State Lighting

Custom SSL Technology Initiative (ENERGY STAR® & DLC)

- ❑ *Energy Star is currently working on two more qualifying SSL product categories. In the meantime, Design Lights Consortium will be creating a SSL product qualifying list for products not yet covered under the Energy Star criteria. The DLC product list potentially can be used to offer prescriptive or custom incentives based on each Utility Efficiency programs. Please see the link below to have your interested manufacturers submit their SSL product data.*
- ❑ **Website:** <http://designlights.org>



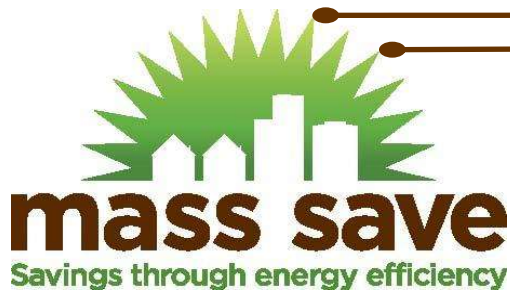


Emerging Technologies – Solid State Lighting

Energy Star

Now lists over 1250 fixtures (downlights) and nearly 300 “integral” lamps (screw-in; plug-in)

Be careful, some of the products are listed as “residential” only and may not be eligible for commercial rebates



Emerging Technologies – Solid State Lighting

DesignLights Consortium

Over 19 different categories not covered by Energy Star

Over 500 products covered.

Mass Save is planning to add prescriptive rebates for high/low bay, parking lights, wallpacks and others.



Thank You

Contact Info:
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781-501-3689