NEWMOA
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Utility Incentives

MA, RI, NH, VT, ME, CT, Long Island NY, Gas in NYC

New construction and gas in Upstate NY.

Existing construction electric coming to upstate NY

Utilities and Efficiency

Incentives

- Gas and Electric
- All but municipal electric companies have them
- Incentives pool is doubling in MA and RI!!

Technical support

- Identify opportunities
- Co-fund energy studies and project budgets

Renewables vs. Efficiency

- **Mass. Technology Collaborative handles Renewables**
- **Efficiency is more cost effective. Start here!**

How about a 5 year solar PV payback!

Get your Share

Massachusetts approx.

$80 million for 2009 for Efficiency

How do the Incentives Work?

General Insights

1. **Gas and electric not always from the same utility**
2. **No incentives from municipal electric companies**
3. **A customer may get only the gas or electric incentive**
4. **Gas and electric are determined quite differently**
5. **Gas incentives generally easier to determine**
6. **Electric incentives more lucrative**

Gas Incentives

Prescriptive

- Steam traps
- New boilers
- Pipe insulation

Custom

- Examples: Heat recovery, boiler controls, ventilation rate reductions)
- Simple $1.00 per therm saved (RI is $1.50, NH is $2.25 per therm saved)

Incentives for high efficiency equipment

Furnaces, up to $500

Condensing unit heaters, up to $500

Infrared heaters, up to $500

Steam boilers, up to $700

Direct fired heaters, up to $2,000

Hydronic boilers, up to $5,000

Condensing boilers, up to $15,000

Visit www.thinksmartthinkgreen.com for more detail

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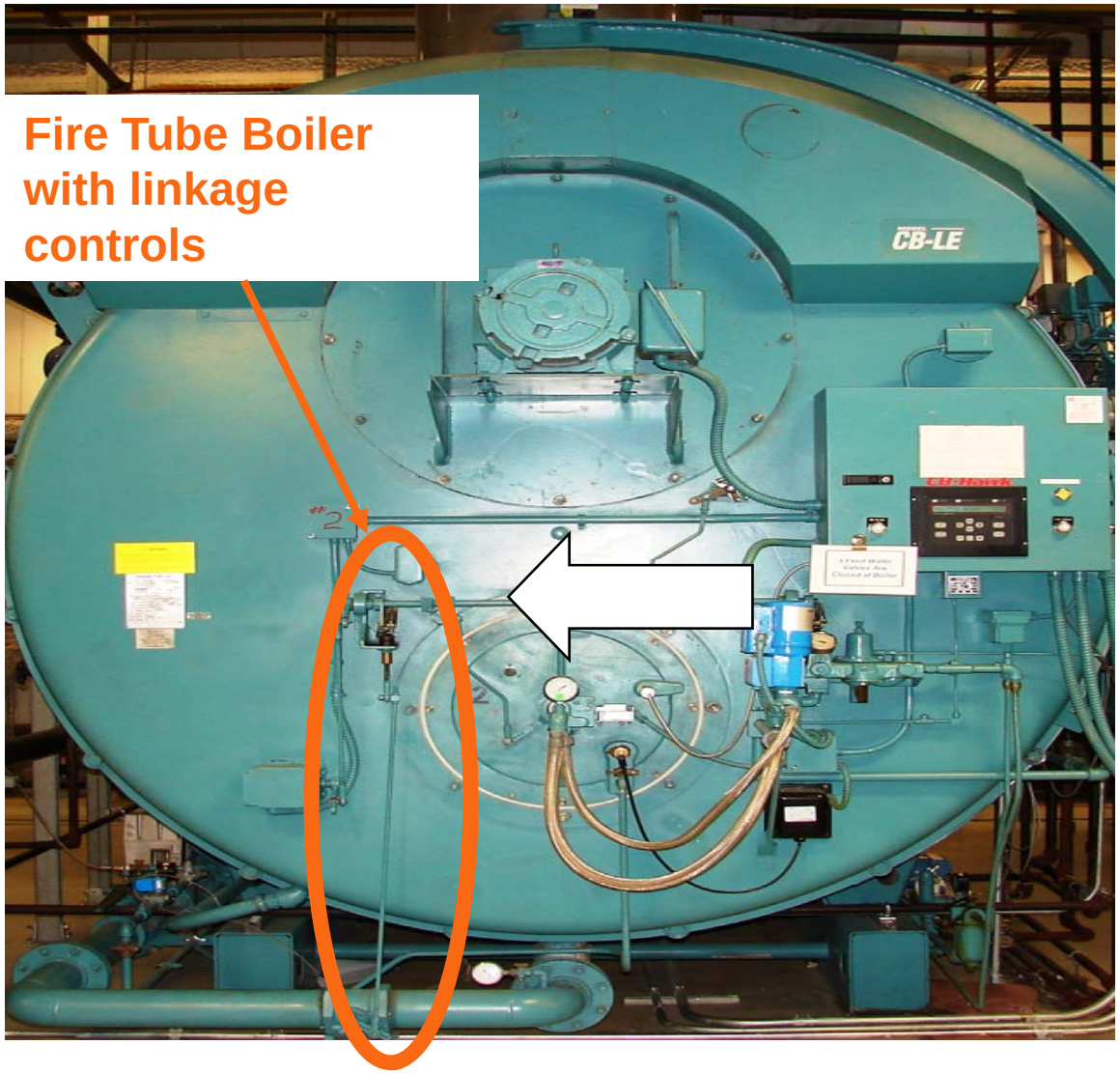
Efficiency Improvements for large boilers



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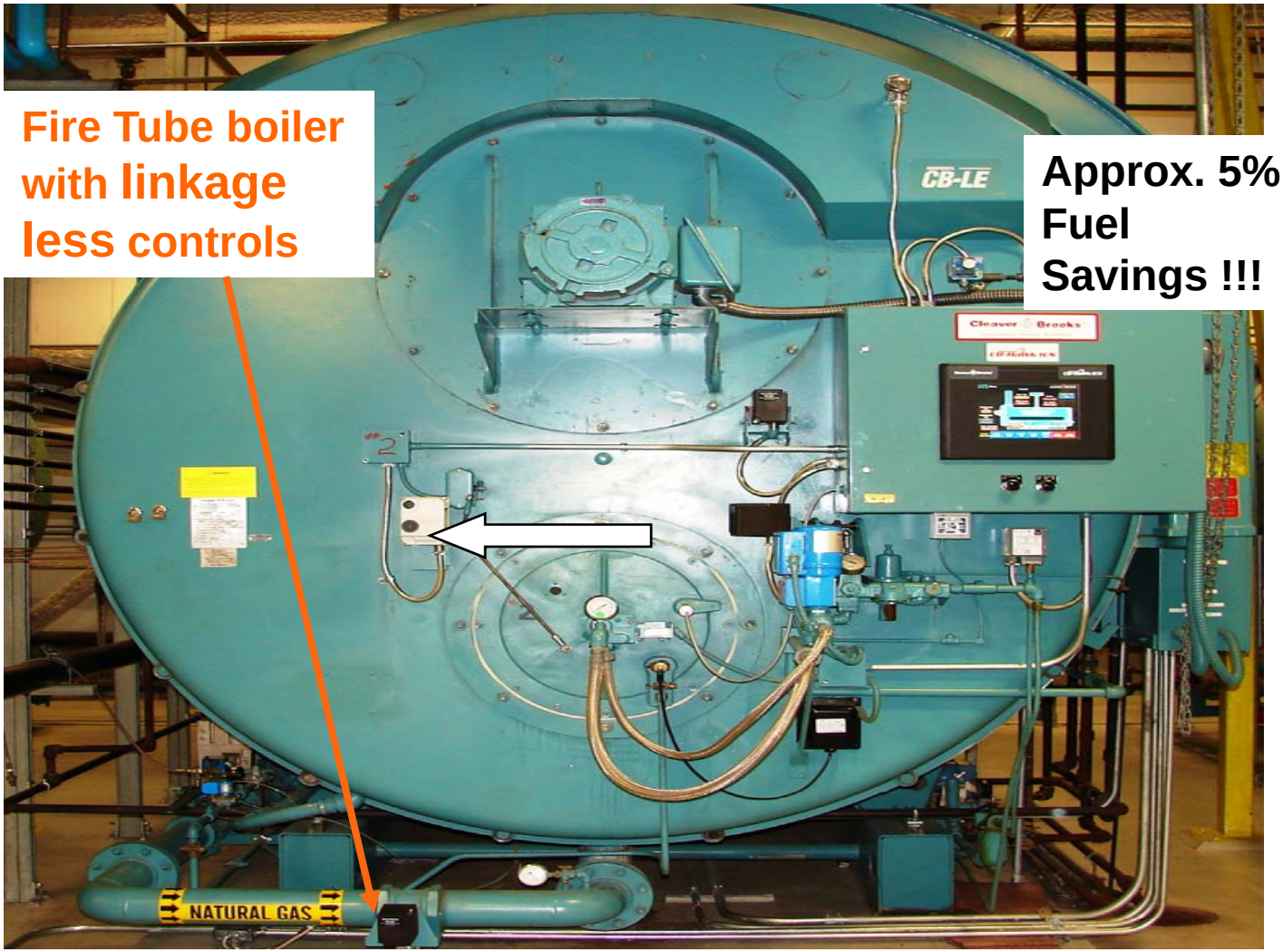

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Laboratory

Solar Duct

http://solarwall.com/en/products/solarwall-air-heating/solarduct.php

- Cost approx
  - $70/ foot the ballasted version
  -

- solar heating system that heats ventilation air
- uses all-metal collector panels
- individual units are 6’ by 4’ and each produces 1000 watts of thermal energy
- length of the duct work is project specific

Electric Incentives

Prescriptive

- Lights
- VFD's on fans and pumps

Custom

- Ventilation improvements
- Controls
- Hood upgrades

Custom Incentives: Electric

Cost Basis for determining incentives:

Retrofits / Energy Initiative Program

Project cost is all design and construction costs except sales tax

National Grid Custom Incentive Tracks for Retrofit

Program	Incentive as % of project cost	Special Requirements
Basic	**45%**	
Comprehensive Electric	**50%, 55%, 60%**	**Reduce Electric Use by; 25%, 20% or 25%**
Comprehensive Chiller	**80%**	**Requires a full compliment of measures including a chiller upgrade and all lighting must meet our efficiencies standards**
Lab or other 100% fresh air HVAC systems	**60%**	**Reduce ventilation volume (CFM) by 20% or more. (limited time offer)**

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Custom Electric Incentives: Payback Cap

- **Projects must meet minimum cost benefit tests (roughly 8 to 10 year payback)**
- **Maximum of $750,000 /year for a single customer site**
- **Customer CUSTOM Incentives always have a Payback Limit**
- **Capped at a 1.5 year payback except for comprehensive chiller at 1 year**

Electric Efficiency CUSTOM Incentives: Impact of 1.5 year payback cap

If there is no gas incentive, customer pays a minimum of the 1.5 times the projected annual energy savings (National Grid only, NSTAR has no payback lower limit)

Example:	
Project Cost /Incremental Cost	$100,000
Electric savings	$50,000
Customer cost (1.5 x $50k)	$75,000
Incentive	$25,000

In this case incentive is capped at 25% vs. 45%

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Examples

Parlex:

- Free cooling
- No moving parts
- Paid 100% with gas and electric incentives

Tenant issue from noisy chiller

Lab ventilation safety

- Better efficiency consistent with better lab hood operation

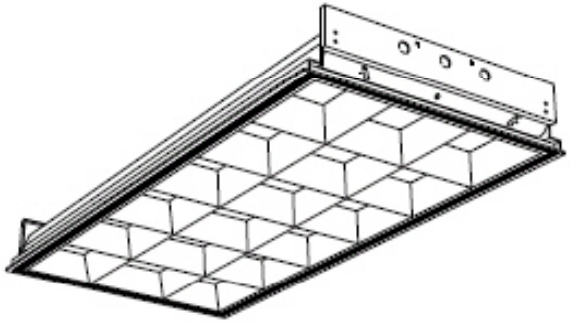
High Performance Hood conversion

- Paybacks 1.5 years or less

Accelerated Lighting

- **Applications by September 1**
- **Installation by December 1, 2009**
- **Incentives nearly doubled**
- **We provide complete Turnkey service**

Is it Free? Parabolic Fixture Upgrade



KILL YOUR PARABOLICS!!

18 cell, 3 lamp parabolic fixture

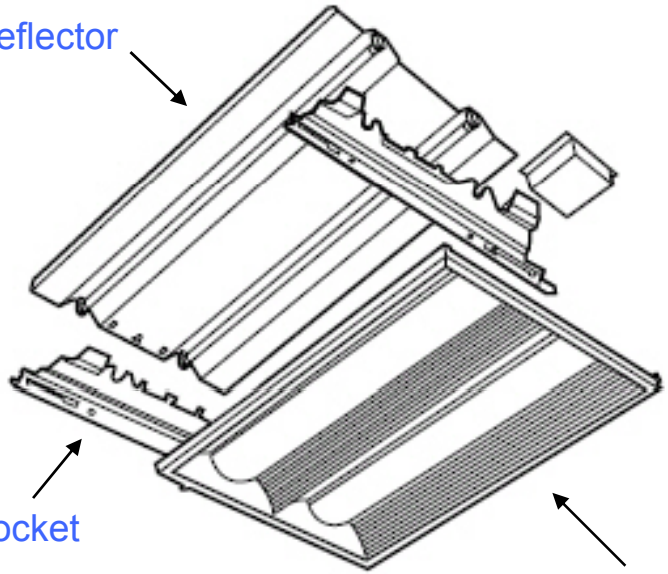
- 2’x2’ or 2’x4’

- **Obsolete design concept (No more CRT’s)**
- **Dark gloomy wall and ceiling appearance**
- **Outdated styling**
- **Uneven light distribution**

Save $21/year

Quick low cost conversion kit
High Efficiency Low Glare

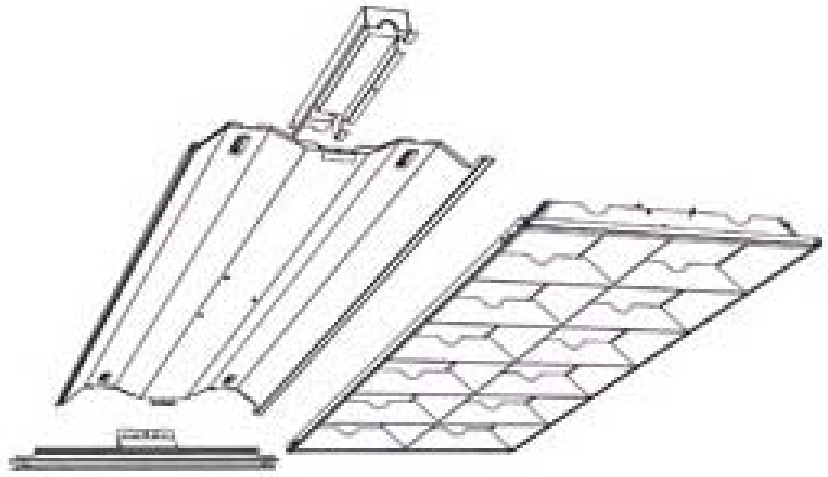
Lense type 1



2RT5R 2' x 2' Relight 2 Lamp

Efficiency: 84.8%

Lense type 2



Efficiency: 85.8%

2' x 4'
2 Lamp
T5, T5HO, or T8

Incentive Amount Per Fixture: ***$114***

Applications Due: **September 1, 2009**

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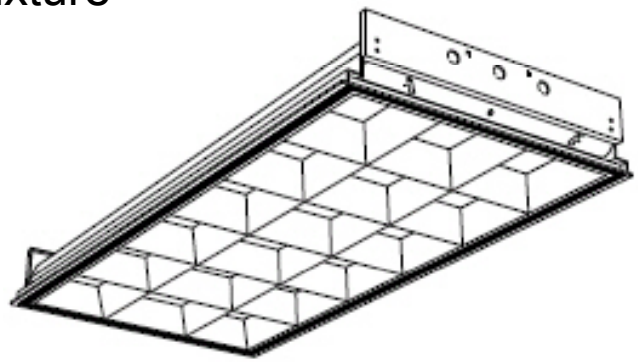
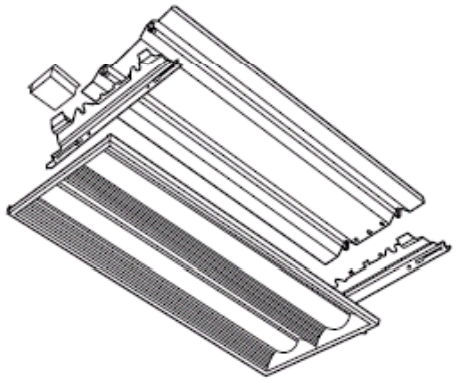
Lighting

FROM 18 cell, 3 lamp parabolic fixture



TO 2 Lamp Advanced Glare Reducing Diffuser Retrofit Kit



Warehouse

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“I have higher priorities than saving energy”!

Leverage Energy incentives to accomplish higher priorities

1. **Efficiency may be a side benefit**
2. **What are you replacing or upgrading already?**
3. **What HVAC / process challenges do they need money to address?**
4. **What new equipment or expansion of facilities are you planning?**

How much does a customer get!

Electric:

- **Caps may apply: Cap of $750,000 per customer per year. (Nat. Grid)**
- **Fixed / Prescriptive Programs**
  - Lighting
  - Variable speed drives
  - Energy Management systems
  - Air compressors (single compressor systems)

How much does a customer get!

Electric Efficiency Custom Program

- **Typical is up to 45% of installed cost.**
  - Never below a 1.5 year payback on electric savings (National Grid only)
  - Almost anything that saves electricity
  - Requires an approved energy study and budget
  - Get utilities involved early!

Best of Commercial Industrial Efficiency

- **Replace HID lighting fixtures with Fluorescent (save 40% plus)**
- **Install occupancy sensors on lighting in storage warehouses**
- **Install window film**
- **Install water side economizers**
- **VFD's on cooling towers**
- **VFD's to replace of differential pressure valves**
- **Change constant flow to variable flow pumping (HW, CHW, CW)**
- **Process cooling with CHW instead of CW**

Best of Commercial Industrial Efficiency

- **Excessive ventilation: Use sensors of spot solutions**
- **Heat recovery (process heat or air compressors for space heating)**

Compressed Air: Best of the Best

"No Brainers" you'll find

- Air compressors in air conditioned spaces (80% of power used is heat)
- Compressed air used when a blower is adequate
- LEAKS!
- Compressors left on 7x24
- Water cooled compressors cooled with chilled water.
- The most efficient of 2 compressors on stand by

Training

- **All should have Fundamental knowledge of compressed air**
- **Training through Massachusetts Energy Efficiency Partnership**
  - Compressed Air Basics
  - MAEEP.org
- Building Operator Certification

Existing Manufacturing
Sample opportunities for utility incentives

Variable ventilation rates

- VFD fans
- Worker presence sensors for ventilation
- VOC or Carbon Monoxide sensors

Add spot ventilation to lower general ventilation

Heat recovery from ventilation systems

Low pressure drop air filters

Solar wall Solar Duct to preheat ventilation air

Existing Manufacturing

Leverage Efficiency incentives for EH&S or production benefits

- **Healthier safer process may well be more efficient**
- **Use utility incentives to fund potentially 45% or more of process change with EH&S as a "side" benefit.**
- **Electric utility pays up to 45% plus gas incentives**
- **Potential for payback of 1.5 years or less.**

Existing Lab Buildings
Ventilation System Opportunities

Reduced unoccupied ventilation rates

Simple rebalancing and reset for new uses

High performance hood conversions

- (40% to 50% lower cfm)
- No variation, fewer malfunctions from VAV
- Paybacks in 3

“No Vent” Carbon filter storage cabinets/ hoods.

Thank you

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