

# Energy Management Planning and Shrinking Budgets



2010

# Introduction

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1. *Thank you*
2. *Credits!*
3. *My Opinion*
4. *Q&A*



# Why do we need an EMP?

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May 29, 2010

## The Boston Globe

### **Menino says energy rates to climb Wants to look at alternatives**

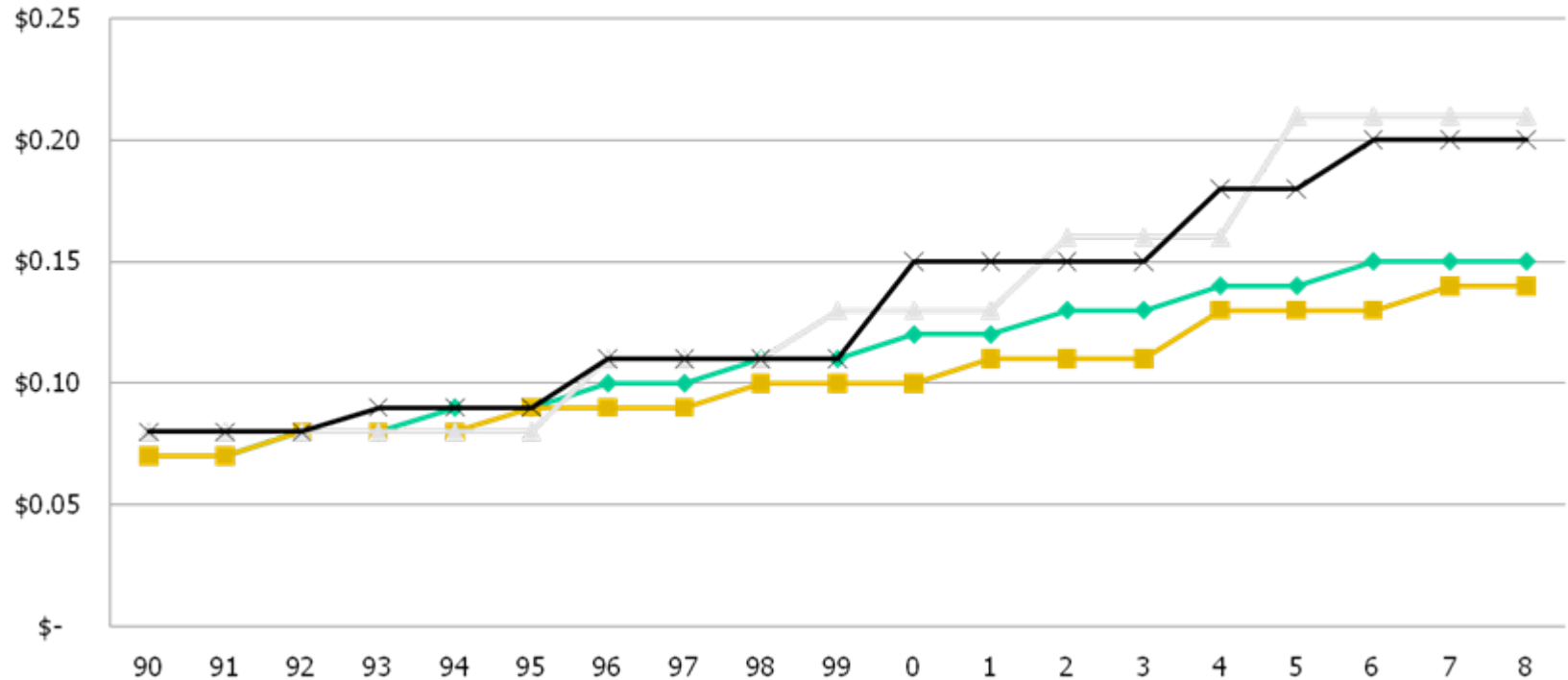
By Robert Downs

In a strongly worded letter sent to city energy committee and the Public Utilities Commission, Mayor Thomas M. Menino said the current level of activity surrounding energy efficiency is not enough to stave off upward spiraling energy costs. He went on to state **increases of 25% over the next decade** are likely.

# Why do we need an EMP?



## Electric Costs per kwhr



Colored lines are local utility rates.

# Why do we need an EMP?



Annual U.S. Natural Gas Wellhead Price



Source: U.S. Energy Information Administration

# Why Energy Planning?



What's new?



# Energy Planning

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First and foremost: *Turn it off!*



Steven Chu meeting with President Barack Obama

# First: Train your Building Operators!



[www.theboc.info/](http://www.theboc.info/)



# Next: Utilize Free Resources

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## *O&M Best Practices*

[www.eere.energy.gov/femp](http://www.eere.energy.gov/femp)

# More Free Resources

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## *COMcheck*

[www.energycodes.gov/comcheck/ez\\_download.stm](http://www.energycodes.gov/comcheck/ez_download.stm)

# More Free Resources

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## *Motor Master*

[www1.eere.energy.gov/industry/bestpractices/software.html](http://www1.eere.energy.gov/industry/bestpractices/software.html)

# More Free Resources

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## *Cool Roofs*

<http://www.ornl.gov/sci/roofs+walls/facts/CoolCalcPeak.htm>

## *Air Conditioning*

[www.alliantenergy.com/docs/groups/public/documents/pub](http://www.alliantenergy.com/docs/groups/public/documents/pub)

## *Variable Speed Drives*

[www.alliantenergy.com/docs](http://www.alliantenergy.com/docs)

# More Free Resources

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## *EPA Energy Star Building Portfolio Manager*



# WIIFM?

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Portfolio Manager – *make your boss look good!*



# BD#1 – Tune up your building



## Applies to:

- New buildings
- Re-commissioning existing buildings
- Continuous Commissioning as part of O&M.



# BD#2 – Incandescent Bulbs



# BD#3 – T5's and HPT8's in Gyms, Rinks

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# BD#4 – Occupancy Sensors



Note: Isolated metered savings = 100 kwhr per year

# BD#5 – Utility Programs

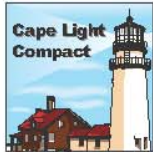


# Multi-Administrator Application



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](http://www.capelightcompact.org)  
[efficiency@capelightcompact.com](mailto:efficiency@capelightcompact.com)

**nationalgrid**  
The power of action.™

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



NSTAR  
One NSTAR Way, SW360  
Westwood, MA 02090  
Tel: 781-441-8592  
[www.nstar.com](http://www.nstar.com)  
[efficiency@nstar.com](mailto:efficiency@nstar.com)



Unitil  
325 West Road  
Portsmouth, NH 03801  
Tel: 1-888-301-7700  
[www.unitil.com](http://www.unitil.com)  
[efficiency@unitil.com](mailto: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.wmeco.com](http://www.wmeco.com)  
[efficiency@wmeco.com](mailto:efficiency@wmeco.com)

## GAS Program Administrators



Bay State Gas  
300 Friberg Parkway  
Westborough, MA 01581  
Tel: 1-800-232-0120  
[www.baystategas.com](http://www.baystategas.com)  
[efficiency@baystategas.com](mailto:efficiency@baystategas.com)



Berkshire Gas  
115 Cheshire Road  
Pittsfield, MA 01201  
Tel: 1-800-944-3212  
[www.berkshireregas.com](http://www.berkshireregas.com)  
[efficiency@berkshireregas.com](mailto:efficiency@berkshireregas.com)



New England Gas Company  
P.O. Box 911  
Fall River, MA 02722  
Tel: 1-508-324-7811  
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[efficiency@sug.com](mailto:efficiency@sug.com)

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[efficiency@unitil.com](mailto:efficiency@unitil.com)



**For more information, please contact your Program Administrator(PA) at:**

**CLC – [efficiency@capelightcompact.org](mailto:efficiency@capelightcompact.org)**

**National Grid – [efficiency@us.ngrid.com](mailto:efficiency@us.ngrid.com)**

**NSTAR – [efficiency@nstar.com](mailto:efficiency@nstar.com)**

**Unitil/FG&E – [efficiency@unitil.com](mailto:efficiency@unitil.com)**

**WMECO - [efficiency@wmeco.com](mailto:efficiency@wmeco.com)**

**Bay State Gas – [efficiency@baystategas.com](mailto:efficiency@baystategas.com)**

**Berkshire Gas – [efficiency@berkshiregas.com](mailto:efficiency@berkshiregas.com)**

**New England Gas – [efficiency@sug.com](mailto:efficiency@sug.com)**

# BD#6 – CMMS / EMS System



# BD#7 – Gas IR Heat

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# BD#7 – Gas Boilers

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Vs



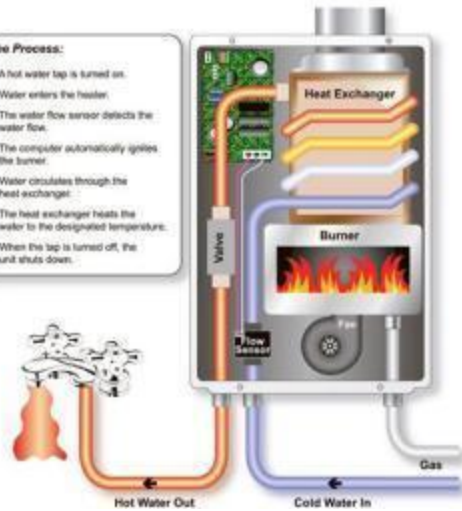
# BD#8 – Gas Hot Water



## How Does a Tankless Water Heater Work?

### The Process:

1. A hot water tap is turned on.
2. Water enters the heater.
3. The water flow sensor detects the water flow.
4. The computer automatically ignites the burner.
5. Water circulates through the heat exchanger.
6. The heat exchanger heats the water to the designated temperature.
7. When the tap is turned off, the unit shuts down.



# BD#9 - Motors

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## Motors:

- Don't buy the cheapest!
- NEMA Premium Efficiency
- [www.MotorUp.com](http://www.MotorUp.com)
- Call your electric utility!
- Great intern job



# BD#10 – Drives

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aa053639 images.google.com



# BD#11 – Filters

## Filters:

- Don't buy the cheapest!
- Locate and change them
- HEPA filters
- NAFA - National Air Filtration Association
- Fiberglass filter  $MERV < 1$
- Pleated filter  $MERV > 6$



# DB#12 - Air Compressors



A few notes from Jeff Wright...

1. Audible leaks - \$1,500
2. ¼" leaks - \$5,000
3. Add VSD and expansion tank – save 30 to 50% of energy
4. Roughly \$1,000 per HP



# BD#13 – Field Trip

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Take a field trip with your boss



# What the...?



# What the...?

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# What the...?

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# What the ...?



# What the ...?

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# Thank you!

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# Questions?



# Contact info

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