

# City of Boston's Sustainability Policy Initiatives

## Challenges, Opportunities, and Best Practices

*EPA Green Power Partnership Webinar*  
October 15, 2009

Maverick Gardens, Boston Housing Authority, 33 kW Photo Voltaic System



### Jacob Glickel

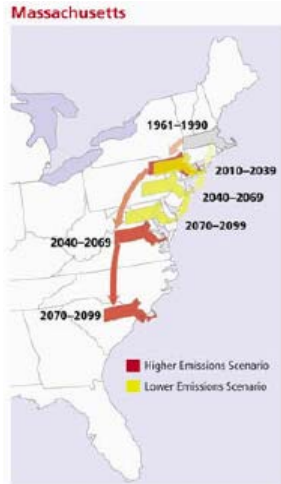
City of Boston, Office of the Mayor  
Environmental Department  
Boston City Hall, Room 805  
Boston, MA 02201  
617.635.3850  
Jacob.glickel@cityofboston.gov



THOMAS M. MENINO  
MAYOR



## Motivation: Climate



Union of Concerned Scientists



## City of Boston Climate Action Plan

2000: Boston joins ICLEI—Cities for Climate Protection

2005: U.S. Mayors Climate Protection Agreement:  
*Kyoto Protocol targets*

2007: Executive Order Relative to Climate Action:  
**Greenhouse Gas Emissions reduction goals:**

- 7% below 1990 levels by 2012
- 80% below 1990 levels by 2050

2009: Renew Boston  
Mayor's Climate Action Leadership Committee

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Image MassGIS, Commonwealth of Massachusetts EOA  
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City of Boston  
2009  
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## City of Boston Sustainability Initiatives

- Green Building Task Force
- Green Affordable Housing
- Executive Order on Climate Action
- Solar Boston
- Renew Boston (ARRA Funds)
- Climate Action Leadership Committee

### Development of Boston's Green Building Policy



everyone  
benefits  
from green  
building...



- 1999:** Earth Day Green Building Charrette
- 2000:** [A Building That Teaches](#) (Report)
- 2002:** [George Robert White Environmental Conservation Center](#)
- 2003:** [Policy Panel: Economics of Green Buildings](#)
- 2003-2004:** [Mayor's Green Building Task Force](#) Convenes
- Nov. 2004:** Mayor Announces Three Year Implementation Plan
- June 2006:** \$2 million Green Affordable Housing Program Announced
- Jan. 2007:** [Private Development Green Building Zoning—LEED Certifiable](#)
- April 2007:** Executive Order Relative to Climate Action  
[Public Development Requirement—LEED Silver Certified](#)

# Green Building Action Plan

- All private projects over 50,000 square feet must be LEED “Certifiable”
- All public projects must be LEED Silver certified
- 10 million square feet of LEED construction is currently in the pipeline.



John Hancock Building



Brigham & Women's Hospital

# Green Affordable Housing Program

- Department of Neighborhood Development (DND)
- \$2 million from Massachusetts Technology Collaborative
- 140 kW on 240 units of housing
- All housing must now be:
  - PV ready
  - LEED Silver certifiable
  - ENERGY STAR or equivalent
- Over half of current Boston capacity is cited on affordable housing



1460 DOT Ave.



7 Sussex St.



## Solar Boston Goals



- Evaluate barriers to market growth for PV and solar water heating (SWH) based on Green Building model
  - Financial (incentives, costs)
  - Technical
  - Administrative (codes, permitting)
  - Informational
- Build Market Baseline and Map the City
- Identify top sites and create marketing strategy for both PV and Solar Thermal
- Develop roadmap for large-scale market growth and large-scale purchases
- Integrate work of Solar Boston with Renew Boston
- Facilitate project development on an ongoing basis



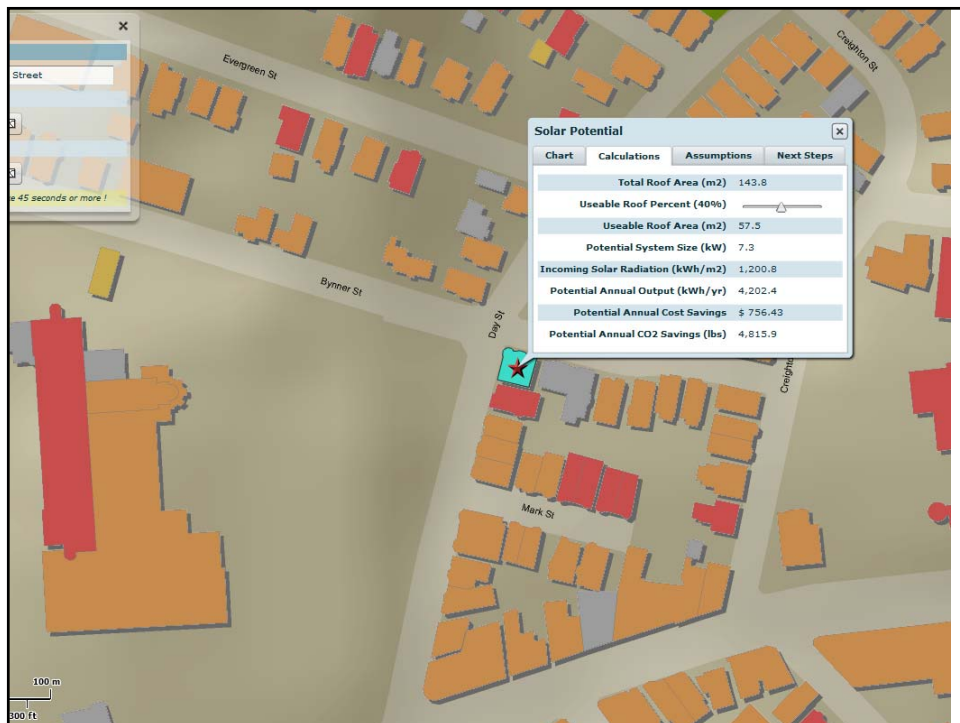
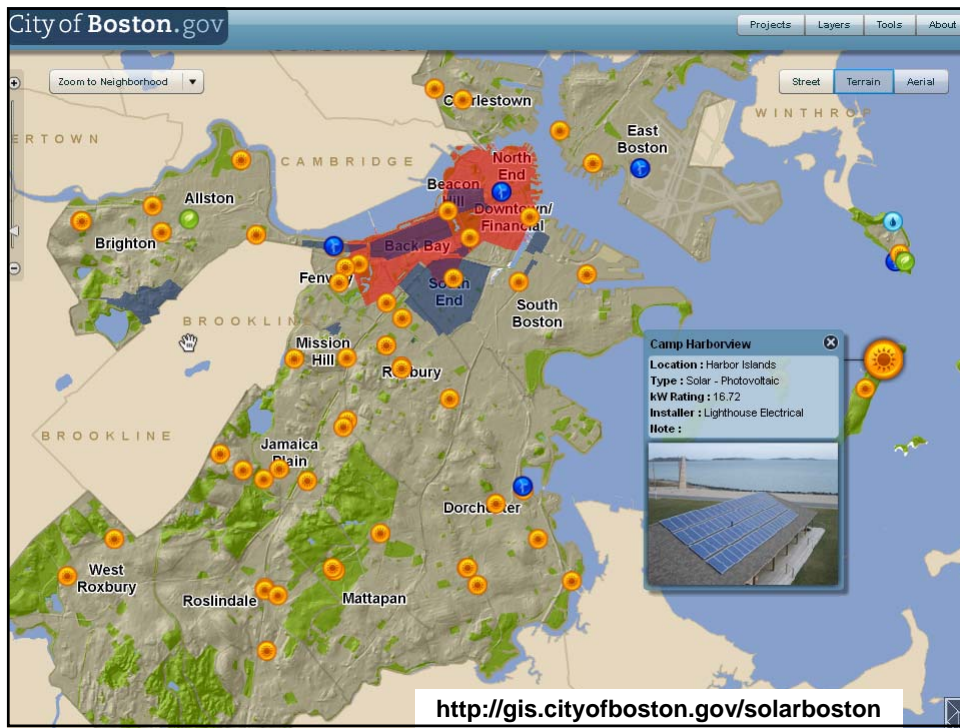
Williams Building, 28 kW (NREL PIX 08466)



North Coast Seafood, 118 kW



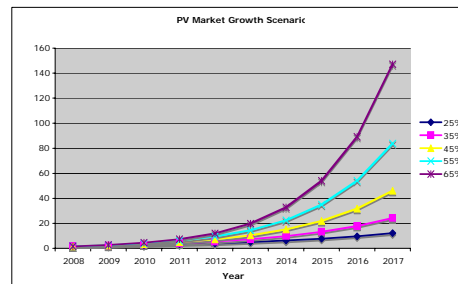
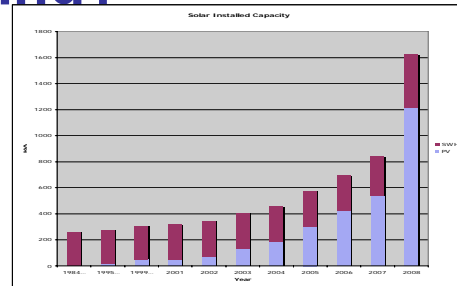
Fresh Hair, 144 sq. ft., Alternative Energy LLC



# Where are we? Where are we Going?

## Market Growth

- Installed capacity increased over 300% from 2006-2008
- 480 kW to 1.8 MW of PV and solar hot water heating
- 50% average annual PV market growth rate (2002-2007)
- 47.8% average annual growth (PV and SWH) necessary to meet Mayor's goal of 25 MW by 2015



## Current Solar Initiatives

- 500 kW of PV in the Pipeline for Municipal Projects
- PV train the trainers
- Solar water heating initiatives
  - 2-Day installer training in September
    - Demand for more SWH training
  - 17 kW system installed at Fenway Park
  - 19 kW on Public Health Commission, Long Island
- Examine bulk purchase and finance options (we want Marshfield!)
  - Solar Roxbury: solar bulk purchase and energy efficiency

# Lessons and Surprises

- 3<sup>rd</sup> party financing is more challenging than expected
- Energy efficiency service delivery needs one-stop shopping
- Solar City program creates space to...
  - Leverage funds
    - \$50,000 grant in SWH funds
    - Training (RETScreen, codes, installers)
    - Student teams (WPI, KSG, Tufts)
  - Silo bust
  - Create fundamental institutional change
- Complexity of public procurement underappreciated
- Cities need to be creative with funds even in states with rebates
  - 16 kW on Mayor's Camp Harborview funded through donations
  - 8 kW on Dudley Village funded through green power funds and donations
  - School projects funded through green power funds and grants



# Renewable Energy

Currently 12% of City's bulk electricity purchase comes from green power

Wind Energy Zoning Provision, *Article 88, Boston Zoning Code*

Boston Public Schools has RFP out on construction of 4 wind turbines on school property

Schools has 6 MW of installed CHP capacity

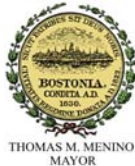


## Renew Boston Vision



### Renew Boston will:

- (1) provide **one-stop shopping** for Boston residents and businesses interested in energy efficiency and alternative energy work on existing buildings in Boston (webpage/call center intake)
- (2) organize provision of **energy efficiency and alternative energy services**
- (3) coordinate provision of **financing** of energy efficiency and alternative energy services
- (4) coordinate **education and outreach programs** to connect services with businesses and residents
- (5) coordinate and track connection of businesses and residents with **auditors and contractors; monitor and verify** contractors' work
- (6) coordinate connection between the **Boston Public Schools** and **green collar workforce development programs**
- (7) develop **GIS/information technology platform** to support outreach strategies and monitor and verify installations for energy efficiency and greenhouse gas emissions reductions
  - Build on success of Solar Boston Map
  - Integrate Customer Response Management (CRM) and Boston About Results (BAR) performance management



## Energy Efficiency and Conservation Block Grant

EECBG Authorized by Energy Policy Act of 2007



### AMERICAN RECOVERY AND REINVESTMENT ACT

**\$6,506,200** directly allocated to City of Boston

### Highlights:

- **Energy Efficiency Programs for Existing Homes, Multi-Family Buildings and Small Business**
  - EECBG funds: **\$4 million**; Potential funds leveraged: **\$10.3 million**
- **Municipal Solar Installation on Archives**
  - EECBG funds: **\$400,000**; Potential funds leveraged: **\$545,000**
- **Fund a Municipal Energy Office**

## Renew Boston Pilot

Announced June 24, 2009

### **\$200,000 Renew Boston Energy Efficiency Pilot Program**

- **Empowerment Zone Green Job Creation project (\$100,000)**
  - Boston Connects, Inc. and Next Step Living, Inc.
  - 8-14 Empowerment Zone residents hired as energy auditors and auditors' assistants
  - Create residential energy savings within EZ communities.
- **Corporate Charitable Contribution (\$100,000)**
  
- **160 homes (88 gas, 72 oil)**
  - 60-120% median income residents
  - Pilot work completed within 5 months

## Next Steps

- \$1.3M Solar Readiness Grant
  - In partnership with Office of Emergency Preparedness
  
- Renew Boston will continually seek additional grant funding from the Federal, State and Utilities
  
- Monitor Massachusetts Green Communities Act and other new legislation for new opportunities

***“Our green agenda will improve our environment and public health, stimulate our growing clean tech economy, and create jobs. Each of these initiatives speak to the core values of Bostonians.”***

**– Mayor Thomas M. Menino**



**THANK YOU**

**Jacob Glickel  
City of Boston  
Environment Department  
(617) 635-3850  
[jacob.glickel@cityofboston.gov](mailto:jacob.glickel@cityofboston.gov)  
[www.cityofboston.gov/climate](http://www.cityofboston.gov/climate)**