Utility Efforts to Promote Energy Efficiency

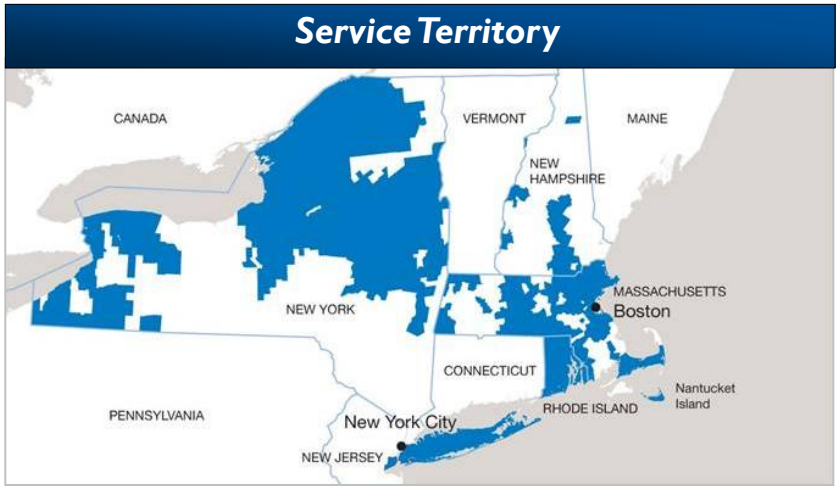
Global Energy Efficiency Workshop
March 6-13, 2010

Outline

- Overview of National Grid USA
- Background on Energy Efficiency in Massachusetts
- Program Planning and Approval Process
- Benefit/Cost Analysis
- 2010 Program Budget
- Program Design Goals
- Program Overview
- Final Thoughts

Overview of National Grid USA

- One of the largest investor owned energy companies in the world
  - $24 billion market cap
- US operations include:
  - 4.4 million electric customers*
  - 3.4 million gas customers
  - 4,200 MW of fossil fired generation under contract to LIPA



- Corporate Responsibility
  - Commitment to reduce company-wide greenhouse gas emissions by 80% by 2050
  - Rated as a "Platinum Company" in the Business in the Community 2006 Corporate Responsibility Index and a "Global Top 10" company out of those with significant global operations

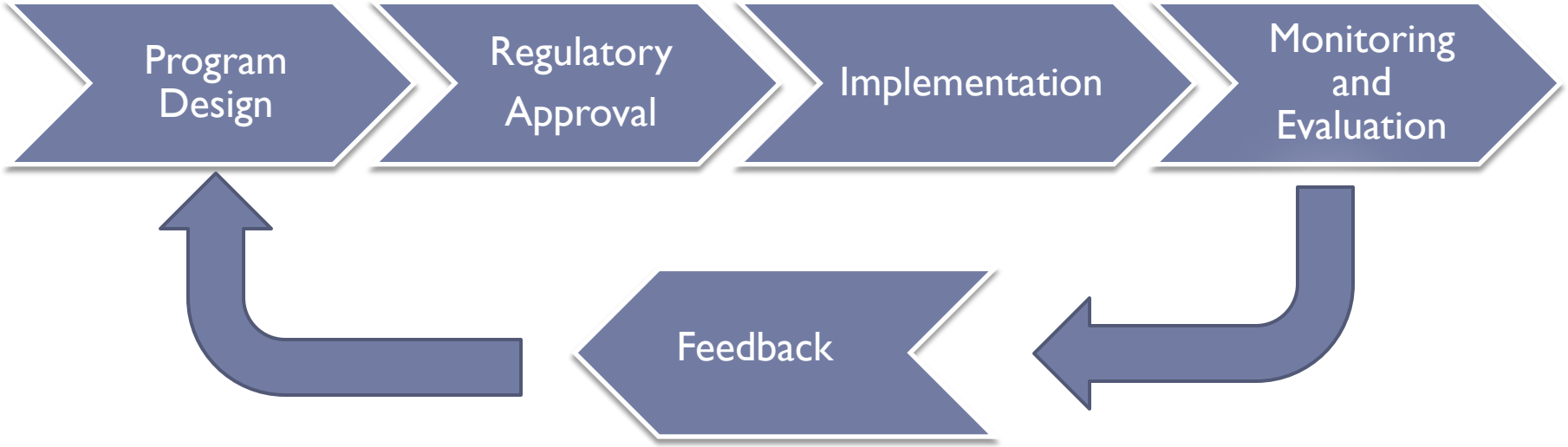
** Includes 1.1 million customers of the Long Island Power Authority served under a long-term service contract*

Background on Energy Efficiency Efforts

- National Grid first initiated large-scale energy efficiency programs in the late 1980's
- Massachusetts electric subsidiary has been expanding and improving these programs consistently over time
- Through 2009, utilities in Massachusetts invested $3 billion and delivered 90 thousand GWh of energy savings
- In 2008, Massachusetts enacted legislation to significantly ramp up energy efficiency efforts
  - Aggressive efforts make efficiency the "First Fuel"
  - Intent is to capture all energy efficiency opportunities that are cheaper than buying power from power plants
  - Expect to meet 30% of 2020 energy needs through efficiency
  - Utilities and other stakeholders are working together through a new Energy Efficiency Advisory Council
  - Program funding has been expanded – System benefits charges, carbon allowance auction proceeds, and regional energy market revenues
  - More than $1billion to be invested over the next three years
  - For full plan, see: http://www.ma-eeac.org/docs/DPU-filing/ElectricPlanFinalOct09.pdf

Energy Efficiency Planning and Approval Process

- Programs are designed and approved in a multi-step process
- Current plans are developed jointly with other utilities and interested parties
- Regulator has recently approved a three year plan for the period 2010 thru 2012
- Monitoring and evaluation results inform program design and support shareholder incentive calculation



Benefit Cost analysis determines program offerings

Benefits

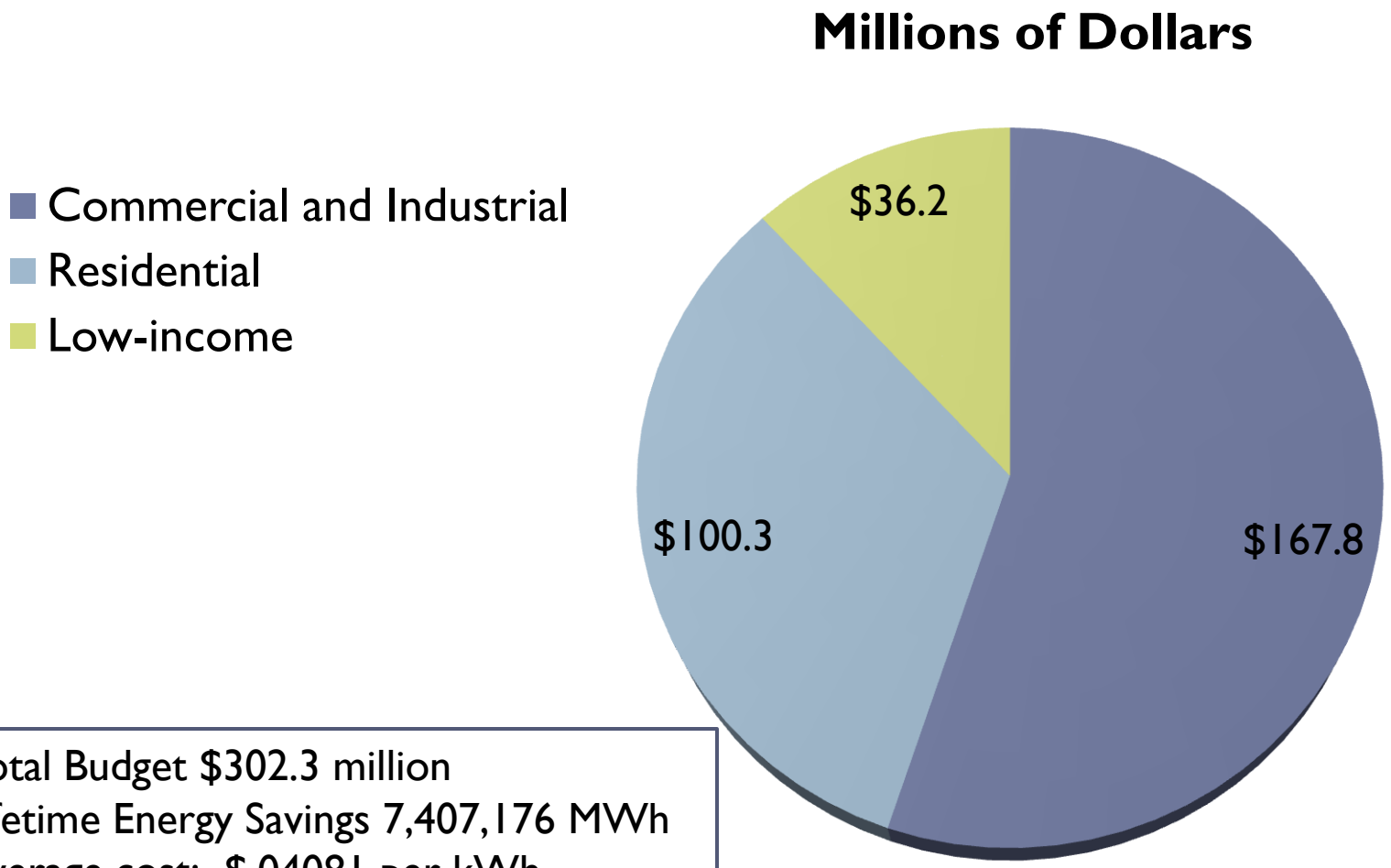
- Value of energy savings
- Electric system benefits

Costs

- Implementation costs
- Evaluation costs
- Rebates
- Shareholder incentives
- Taxes
- Customer costs

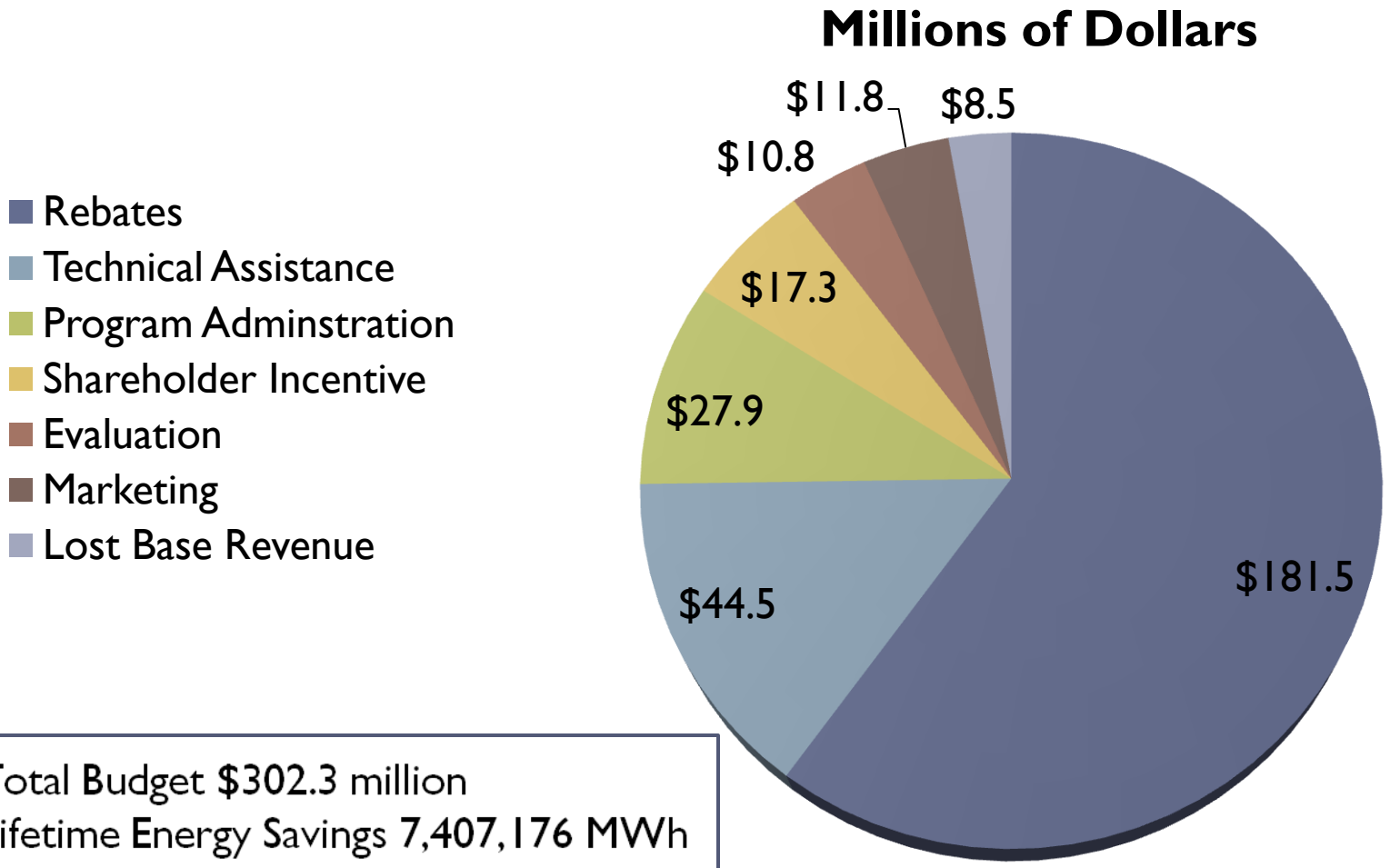
- Benefit/Cost Ratio is calculated over the useful life of the energy efficiency measure
- Overall, BCR for MA 2010 program is 3.53
  - Individual programs range from 6.56 (C&I New Construction) to 1.24 (Residential Cooling and Heating Equipment)

Massachusetts Program Budget (2010)



Total Budget $302.3 million
Lifetime Energy Savings 7,407,176 MWh
Average cost: $.04081 per kWh

Massachusetts Budget by Component



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Program Design Goals

- Avoid lost opportunities
- Provide a simple application process
- Serve all customer classes
- Efficient delivery
- Provide verifiable savings
- Transform markets

Program Overview

- Programs are designed to reach each customer class
  - All customers contribute to the cost of the program
- Much of the focus is on new construction and major renovation
  - Incremental costs are lower in these cases
  - Failure to reach these projects results in "Lost Opportunities"
- Rebate amounts can be determined in advance (prescriptive) or on a case by case basis (custom)

Market	Target		Rebate Type	
	New Const.	Retrofit	Prescriptive	Custom
Residential	✓	✓	✓	
Small C&I		✓	✓	
Large C&I	✓	✓	✓	✓

Residential program

- Target end uses include:
  - Building shell measures
  - Duct and air sealing
  - HVAC quality installation
  - Energy Efficient lighting
- Programs delivered through:
  - Retailers
  - Builders
  - Program Vendors
  - Trained contractors
- Close collaboration on low-income household program with local Community Action Program agencies

Small Commercial and Industrial program

- Program criteria
  - Under 200 kW load
- "Hassle-free" for customers
  - Customer signs contract
  - Company selected vendor installs energy efficiency equipment
  - Company pays for 70% of cost
  - Customer has option to spread 30% cost share over 24 months on electric bill, with no interest
- Vendors selected through competitive bidding process
- Pre and Post installation inspections at 20 to 30% of jobs

Large Commercial and Industrial program

- Available to all commercial and Industrial customers
  - Municipal customers receive higher rebates
- Marketed by Company employees
- Focus on New construction and Major retrofits
  - New construction rebates up to 70% of equipment cost (1.5 year payback)
  - Major retrofit rebates up to 50% of equipment costs (2 year payback)
- Two approaches to rebates
  - Prescriptive – savings and rebates predetermined; must install approved equipment
  - Custom – engineering analysis of energy savings; work with customer's design firm and vendors
- Only measures exceeding local codes and standards subsidized
- Pre and post installation audits

Need to monitor rebates over time*

Standard Incandescent

Retail Price	$1.00
Net Cost	$1.00

Compact Fluorescent

Retail Price	$5.00
Less Rebate	-$4.00
Net Cost	$1.00

Properly designed subsidies can remove market barriers

* All price and rebate figures are illustrative only.

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Properly designed subsidies can remove market barriers

Retail Cost	$4.00
Less Rebate	-$4.00
Net Cost	$0.00

Subsidies can become uneconomically large as market prices change

* All price and rebate figures are illustrative only.

Final thoughts

- Programs in Massachusetts have become more comprehensive and sophisticated over time
- Lighting retrofits can provide quick wins
  - "Low hanging fruit"
- Building code and appliance efficiency upgrades can help transform the market
- Over time, there will be more emphasis on alternative ways to finance energy efficiency
  - Market based solutions
  - More third party involvement
- More opportunities exist to consolidate gas and electric efficiency efforts

Questions?

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