Deeper Savings
EEAC Meeting
November 12, 2014
Outline

• Definition of “deeper savings”
• Deep Energy Retrofit Evaluation Findings
• National Grid Deep Energy Retrofit Example
• Plan for Statewide Offering for Deeper Energy Savings Measures
• Depth of Savings in Retail Lighting
• Deeper Savings in Lighting for Home Energy Assessment
• Early Heating Replacement Rebates
• Community Efforts and Efficient Neighborhoods+®
• Deep C&I Examples
What does “Deeper Savings” mean?

Heating Systems and Insulation?

Passive House with 10 inch walls for new construction? Or deeper energy measures?

More lighting in homes?

There are lots of ways to get to 10-50% of savings per home, and much of that depends upon the home and the residents.
It’s a Balancing Act

Deeper Versus Wider
Quick Numbers
• Pilot pipeline:
• 118 customers
• 2010 completions:
• 12 completions
• Average time to complete:
  6-24 months
• Primary reasons for nonparticipation: project cost and project complexity

Evaluation
Recommendations & Actions

• Research lowering cost and monitor cost-effectiveness (pilot = not cost effective)
  Action: Evaluation and Implementation cross-team effort
• Partial deep retrofits
  Action: Implementing deeper energy measure options rather than whole house
• Deep (but not as deep) retrofits
  Action: Increasing insulation implementation (e.g. pre-weatherization removing barriers!)
12 Dartmouth Way, Newbury, MA

Attributes

• Built 1950
• 2,747 square feet
• 2-stories
• Oil Heat

Measures

• R60 Roof
• R40 Walls
• R20 Found. Walls
• R40 Overhanging Floors
12 Dartmouth Way, Newbury, MA

Incremental Costs
• $55,000

Incentives
• $23,700

Duration
• 10+ Months

Projected Savings (oil)
• 1,758 Gallons/year
Plans for Deeper Energy Measures

Eligible Measures
- Wall Insulation $3.50/sq ft
- Floor Over Garage $3.00/sq ft
- Cathedral Ceiling $3.00/sq ft

Process
- Occupy 1-4 family home and work with a qualified contractor
- Get pre-approval with existing insulation value
- Mid-point inspection
- Completion and Rebate Processing

Eligible Measures: Wall Insulation $3.50/sq ft, Floor Over Garage $3.00/sq ft, Cathedral Ceiling $3.00/sq ft.
Trends in Retail Lighting

CFL/LED MA Sale Trends
- Both CFLs and LEDs still trending upwards
- LEDs will increase, but still opportunities for CFLs

Bulb Shelf Stocking Trends
- Halogens have doubled
- Incandescents have declined
- Room to grow, but more CFLs in stock than LEDs at this point
Pricing Trends for ENERGY STAR®

- Range in pricing is from $5-11/bulb
- Some upward pricing for specialty lamps (BR40, BR30 and globes)

- Range in pricing is from $20-60/bulb
- Some upward pricing for specialty lamps (PARs, BR30) but others are trending down

Plans for 2015 and Outlook for 2016-18
- Continue to monitor pricing and stocking trends (how many and what types)
- Pursuing additional LEDs but still assessing CFL demands (need to speak to customer requests)
Aggressive Growth in Residential Direct Install LEDs*

- PAs have aggressively pursued increasing direct install of LEDs
- Identified opportunity and released collaborative statewide bulk procurement RFP in March, 2014
- PAs will continue to monitor LED market/cost and pursue increasing LED installations

*Note: HES Program Data
Early Heating Uptake 2012 - 2014 YTD and Projections

Enhanced incentives for boilers over 30 years old and furnaces over 12 years old

Limited time offer where customers must call May-September

2014 YTD showing an increase in participation, typical hockey stick effect for this offering
Enhanced Offerings to Go Deeper

Enhancements Include:
- Greater incentives for insulation
- Whole House Rebates
- Pre-weatherization
- Whole house LEDs (in 2014)
- Early Retirement bonus for refrigerators
- Common area lighting incentives
- EnergySavvy online assessment: targeted marketing

Yellow = Efficient Neighborhoods+® Round 1
Blue = Efficient Neighborhoods+ ® Round 2
Green = Past Community Efforts
Orange = Municipal Territories
Old Castle Stone Products

• Customer
  • Agricultural lime producer in Lee, MA. Produces many variations of lime and package sizes ranging from homeowner sized bags to bulk containers.

• Project Summary
  • Partnership between Old Castle, The Berkshire Gas Company, and the Western Massachusetts Electric Company to reduce production related energy costs.

• Need
  • Consumer demand driving need for substantially increased production on a very tight time frame
  • Existing equipment could have met production goals utilizing 24 hour per day operation but would increase energy costs substantially

• Solution
  • Integrated approach including engineering analysis and review of both gas & electric opportunities
  • Single incentive offer specifying implementation of both gas & electric measures required for incentive eligibility
  • New gas powered thermal dryer and 500 HP variable frequency drive (VFD) motor control

• Results
  • Project Costs: $1,850,000
  • Incentives: $400,000
  • Energy Savings: 2.2 Million kWh and 60 Thousand Therms
  • Cost Savings: Approx. $390,000 ($40,000 gas and $350,000 electric)
Stop & Shop

• Overview
  • Scope: 44 stores in 36 different towns since 2012
  • Increases of 38% and 42%, respectively in 2013 and 2014 (thru Aug.)

• Comprehensiveness Metrics
  • Savings per store: 431% increase from 55,000 KWh to 292,000 KWh
  • Savings per project: 351% increase from 40,000 KWh to 181,000
  • Savings mix: increase in refrigeration savings from 42% of total to 58% of total

• Major project categories:
  • Advanced refrigeration controls -- floating head and suction pressure (FHSP), anti-sweat heater (ASH)
  • Motor Controllers on Electronically Commutated (EC) Motors on Freezer and Cooler Units
  • LED case lighting
Appendix
Current and Future State for Lighting in Home Energy Services

**Before Direct Install RFP**

- For all sockets with incandescents
- Up to 2 per home

**After Direct Install RFP**

- For all sockets with incandescents
- Unlimited
- Up to 8 or one fixture
- Up to 5 for non-dimmable applications
- No cap on dimmable applications up to 60w equivalent
Important Considerations

- Important considerations prior to complete exit of CFLs
  - Costs
  - Missed cost effective savings opportunities
  - Socket application

### Retail Example

<table>
<thead>
<tr>
<th>Bulb Description</th>
<th>PA Incentive</th>
<th>Consumer Pays</th>
</tr>
</thead>
<tbody>
<tr>
<td>900 lumen Spiral CFL</td>
<td>$1.40</td>
<td>$2.19</td>
</tr>
<tr>
<td>800 lumen LED A-Line</td>
<td>$5.00</td>
<td>$6.99</td>
</tr>
</tbody>
</table>

### Direct Install Example

<table>
<thead>
<tr>
<th>Bulb Description</th>
<th>PA Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED A Lamp 60W Equiv</td>
<td>$7.95</td>
</tr>
<tr>
<td>CFL Spiral 60W Equiv</td>
<td>$1.10</td>
</tr>
</tbody>
</table>

- LED buy down costs much higher than incremental savings
- Consumer purchase price may drive customers to less efficient option than CFL (Halogen/Incandescent)
- LED caps/home allow for high use socket penetration
- For lower use sockets, CFL provides energy savings at a much lower cost
Aggressive Growth in Residential Multifamily Direct Install LEDs*

- Multi-family included in the statewide bulk LED procurement

*Note: Multifamily Program Data for Northeast Utilities and part of National Grid.