

RESIDENTIAL OVERVIEW

10 June 2014

SUMMARY



- ▶ **Residential results are strong**
 - Maintaining this strength of results in the future will require more of the same and more of more
 - Ongoing opportunities for continuous improvements, especially to inform 2016-2018
- ▶ **This overview only (barely) scratches the surface of a very large body of ongoing work**
 - Stay tuned for more (evaluation results, future topical presentations to the Council, and more)
- ▶ **Persistent theme of value of data**

RESIDENTIAL EVALUATIONS IN PROGRESS

| Study | Expected Completion Date |
|--|--------------------------|
| Ductless Mini-Split Heat Pump Assessment | 6/2014 |
| Behavioral Program Persistence Study | 6/2014 |
| Multifamily Process | 7/2014 |
| HEHE Impact Evaluation | 10/2014 |
| Residential Customer Profile Study | 11/2014 |
| HES Program Delivery Assessment | 3/2015 |
| Cool Smart Impact Evaluation | 5/2014 |
| HEAT Loan Process Evaluation | 6/2015 |
| Residential Market Effects Study | 6/2015 |
| 23 others (including low income and cross-cutting) | Various |

2013 RESIDENTIAL SPEND AND BENEFITS

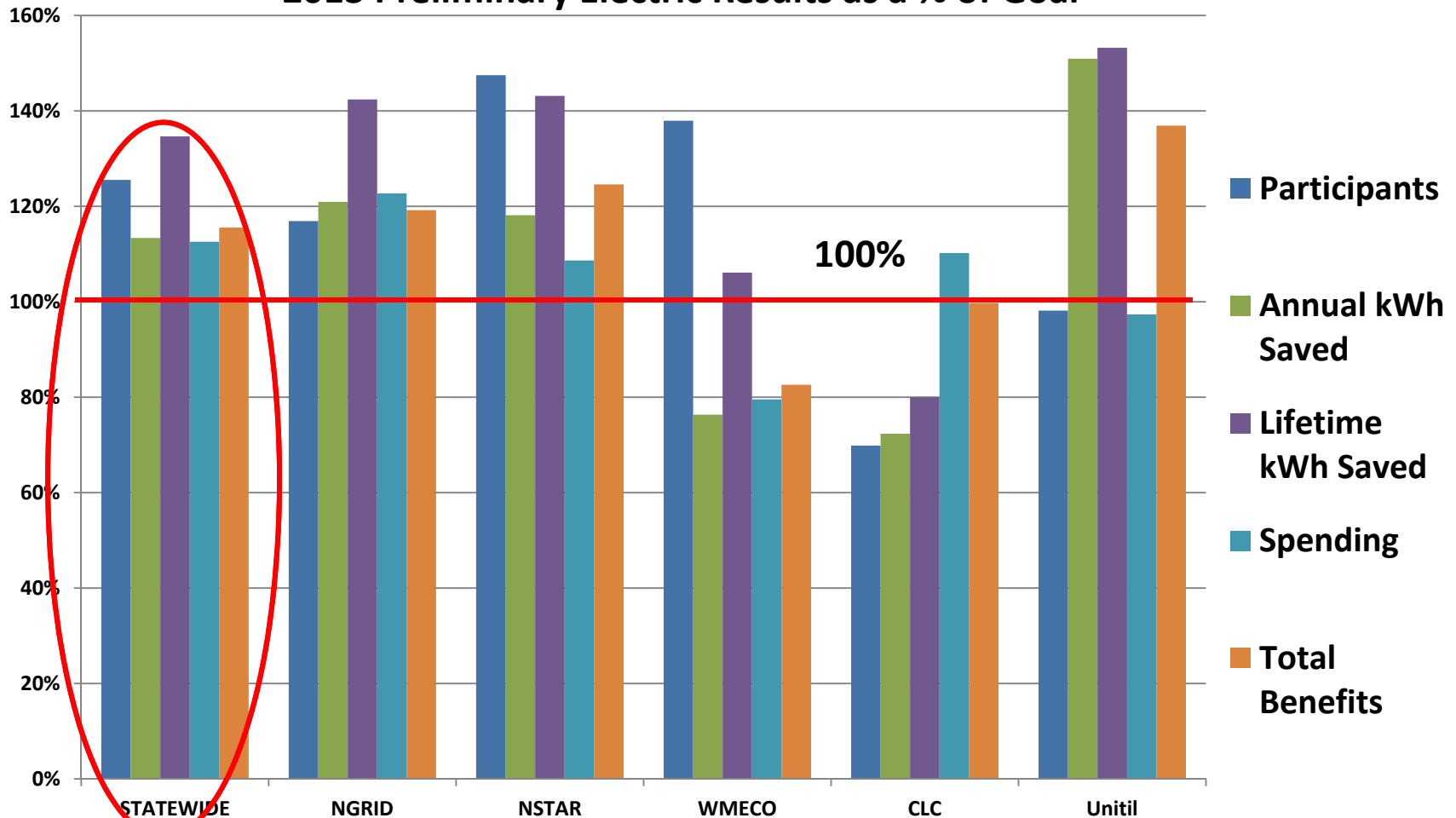


| | Electric | Gas | Total |
|-------------------------------|----------------------|----------------------|----------------------|
| Total Res Sector Spend | \$173,108,148 | \$87,388,639 | \$260,496,787 |
| Whole House Program | \$107,242,897 | \$61,162,077 | \$168,404,974 |
| Residential Products Program | \$46,265,743 | \$24,021,547 | \$70,287,290 |
| Hard to Measure | \$19,599,509 | \$2,205,016 | \$21,804,525 |
| Total Benefits | \$758,348,027 | \$229,715,388 | \$988,063,415 |

From 2013 Q4 YTD preliminary results

ELECTRIC ACHIEVEMENTS

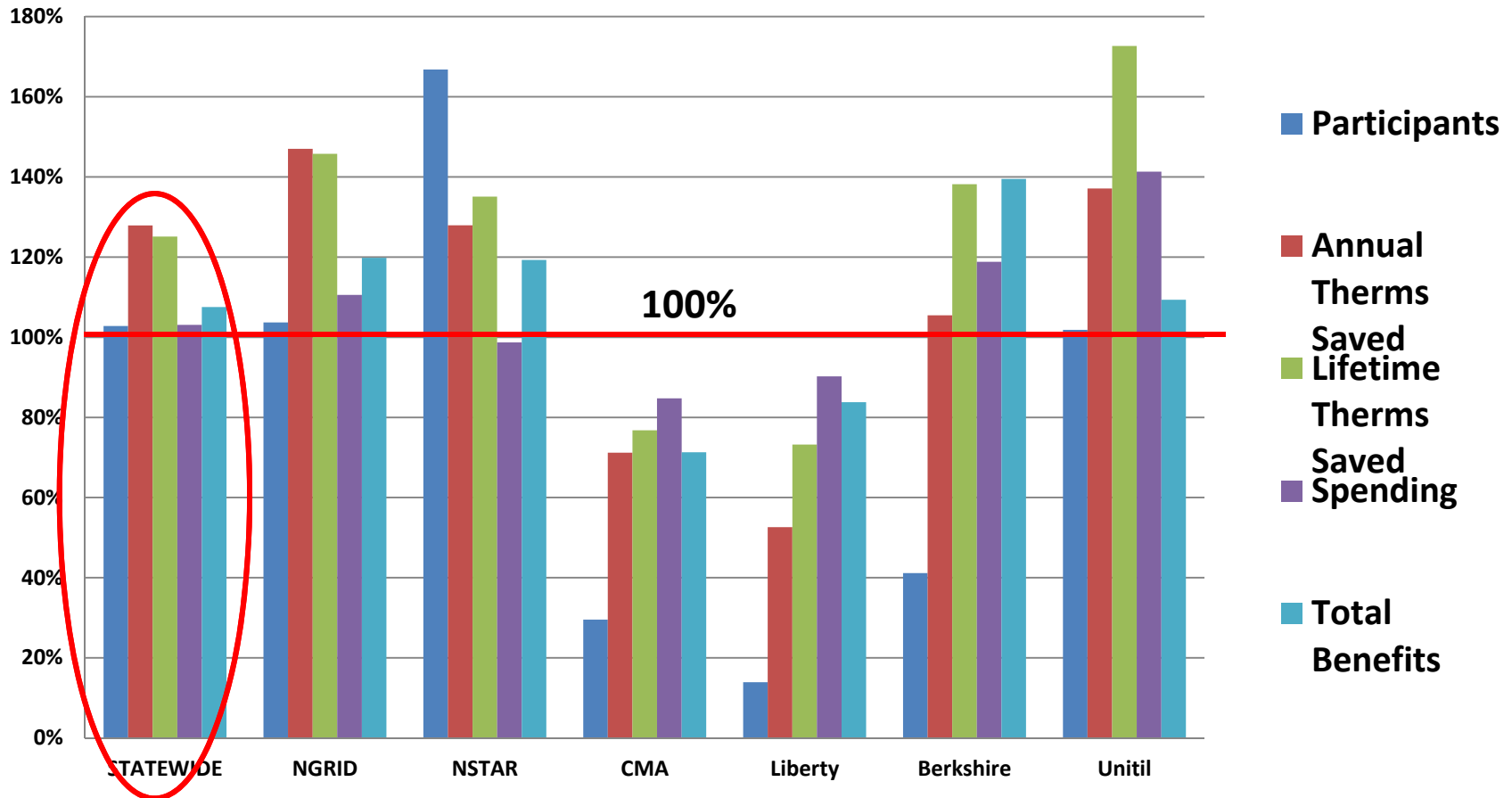
2013 Preliminary Electric Results as a % of Goal



GAS ACHIEVEMENTS



2013 Preliminary Gas Results as a % of Goal



PARTICIPATION



► What we know

- Sector, program, and initiative level participation
 - 2013 prelim. statewide res sector electric: 2,712,407 (126% of goal)
 - 2013 prelim. statewide res sector gas: 552,782 (103% of goal)

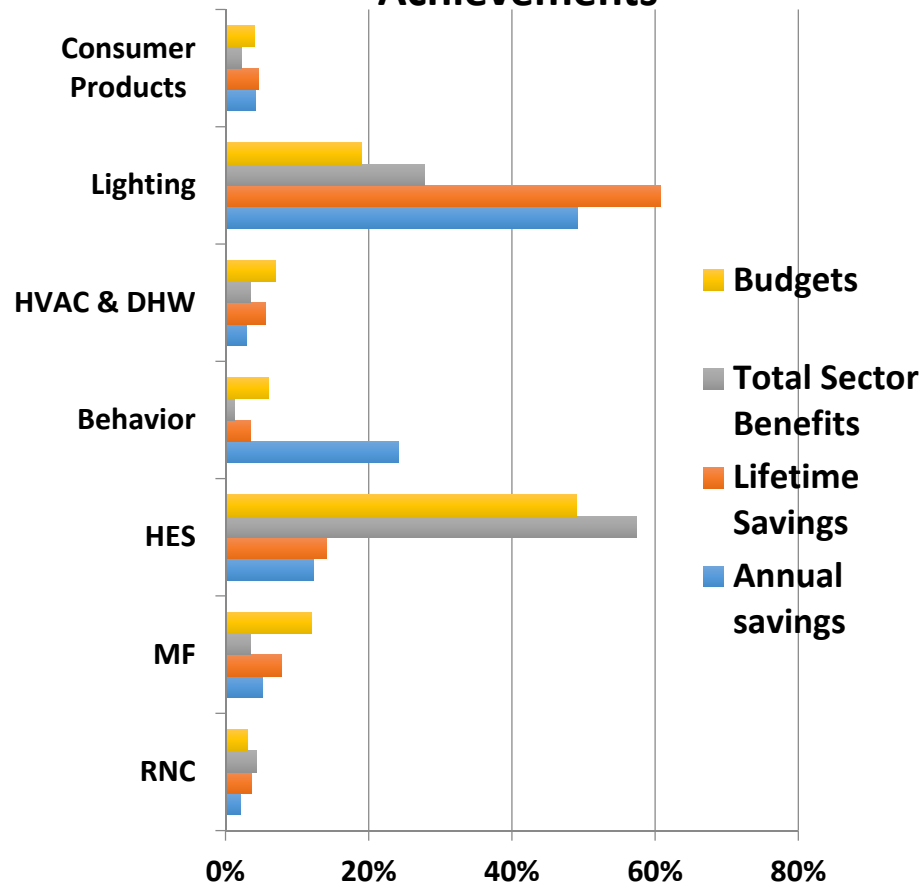
► What we don't know (yet)

- Extent of overlap in participation numbers
 - Gas vs. electric
 - Participation in multiple initiatives
 - The consultants believe this could largely be solved by assigning unique site IDs
- Renter vs. owner participation
- Geographic nature of participation

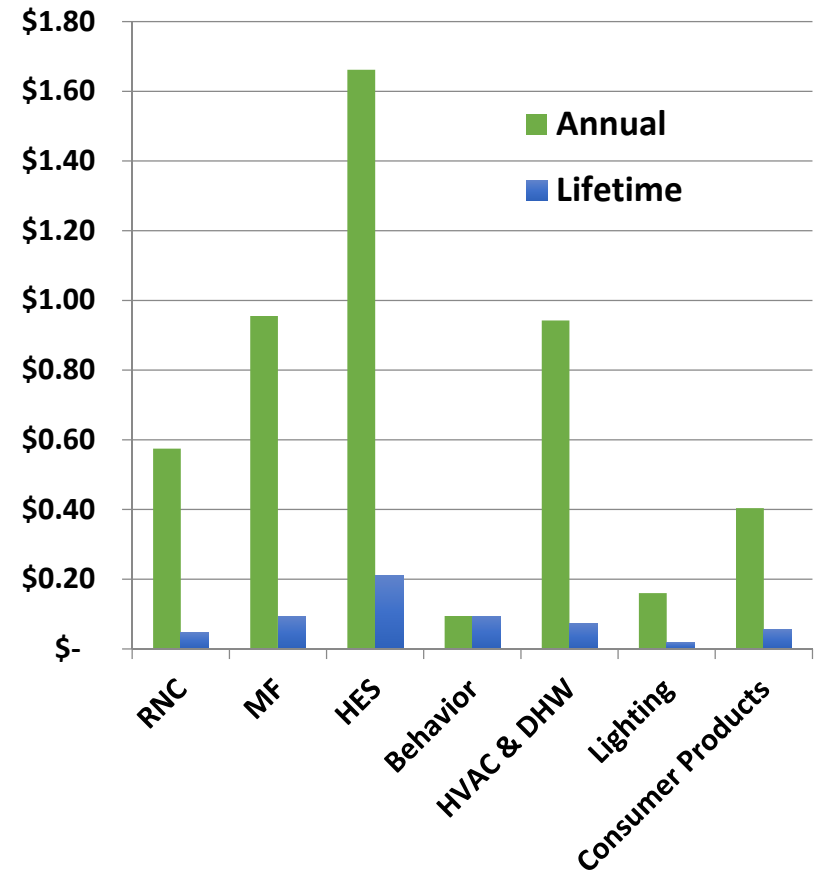
ELECTRIC INITIATIVES



Relative Contribution to 2013 Achievements



Cost (\$) Per Saved kWh

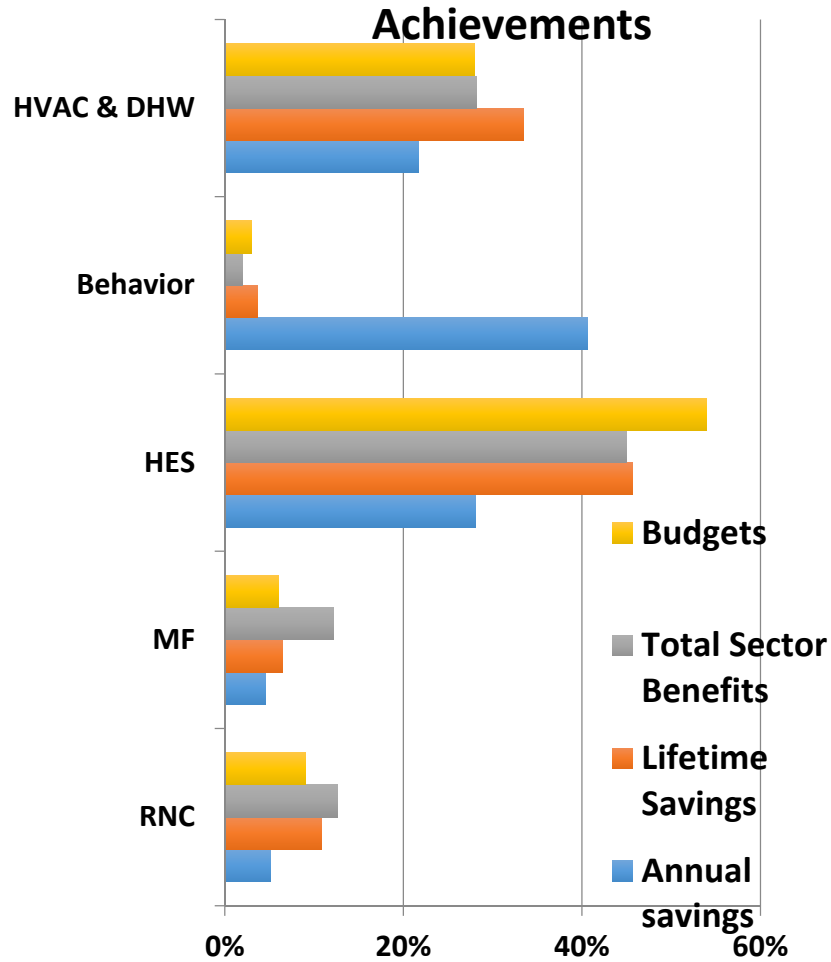


2013 prelim. Q4 data; HTR excluded
Residential Overview

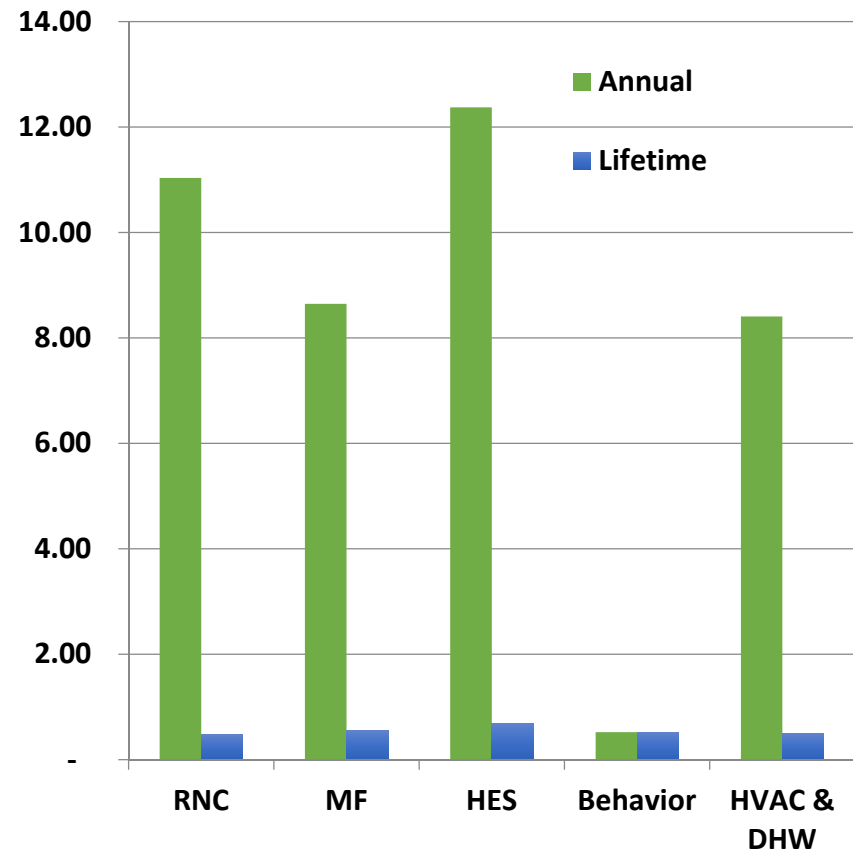
GAS INITIATIVES



Relative Contributions to 2013 Achievements



Cost (\$) Per Therm Saved



2013 prelim. Q4 data; HTR excluded

ACHIEVEMENTS:

NUMBERS AND THE STORY BEHIND THEM

| | HVAC & DHW (elec) | HES (elec) | HES (gas) |
|-------------------------|-------------------|------------|-----------|
| Participants | 145% | 98% | 118% |
| Annual savings | 188% | 139% | 134% |
| Lifetime savings | 175% | 127% | 126% |
| Spend | 159% | 111% | 110% |
| Total benefits | 144% | 112% | 110% |

2013 prelim. Q4 data

► Heat Pump Water Heaters

- Leveraged manufacturer and retailer partners for promotion and training
- Exceeded planning assumptions for new technology
- Strong incentive

► HES

- Ongoing marketing efforts to create demand
- Encompassed many sub-initiatives (e.g., EN+, early boiler replacement)
- High level of QC
- HPC component maturing

BEHAVIOR/FEEDBACK



- ▶ **Behavior stands out as an area with additional potential**
 - 2013 statewide achievements: Gas 120%, Electric 91%
 - Cost effective
 - Important contributor to annual savings, less so for lifetime
- ▶ **Individual 2013 PA results**
 - Several PAs did not meet their behavior/feedback goal or didn't offer a behavior program
 - 498,000 Therms and 12,337 MWh of missed planned annual and lifetime savings
- ▶ **Several new behavior programs will be introduced in 2014**
- ▶ **Combined electric/gas reports are challenging, but offer value to customers**
- ▶ **Promising behavioral innovations merit closer consideration**
 - E.g., behavioral savings for communicating thermostats

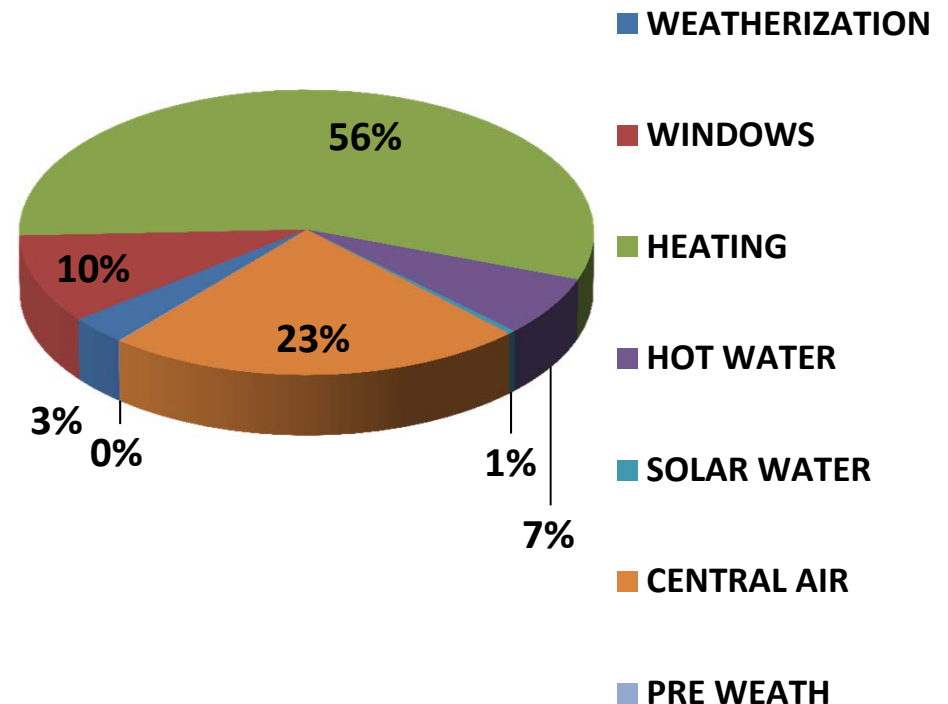
HEAT LOANS: 2013 PROGRAM ACTIVITY



► Over 9,000 HEAT loans

- Total value: \$88.4 million
- Avg. loan value: \$9,700
- Total value of interest buydown: \$13.9 million
- Avg. interest buydown: \$1,500

HEAT Loans by Measure



Source: EFI

EFFICIENT NEIGHBORHOODS+



- ▶ **Draft evaluation completed in early May**
- ▶ **Preliminary conclusions**
 - Lift in audits, measure installation and savings for targeted populations
 - Securing renter participation still challenging
- ▶ **PAs continue to discuss results and refine their 2014 offerings**
 - What outreach methods and messages were most effective?
 - Will there be program modifications?
- ▶ **Final evaluation will be complete by end of June**

ON-LINE AUDIT TOOL LAUNCHED

(SOFT LAUNCH IN MARCH 2014)

- ▶ **Quick and easy on-line audit tool for consumers**
- ▶ **Powerful lead generation tool**
 - Enables segmenting customers into most effective program channels
 - Enables high impact, low cost, targeted marketing
- ▶ **Sharing of customer appliance and end-use inputs between gas/electric PAs enabled**
- ▶ **Possible applications for behavioral initiatives**
- ▶ **Preliminary results from soft launch:**
 - 1900 visitors
 - 1500 on-line audits
 - 600 HEA candidates
 - More results to come...

The screenshot displays the user interface of the online energy audit tool. At the top, it features logos for 'mass save' (with the tagline 'Save through energy efficiency'), 'nationalgrid', and 'NSTAR' (with the tagline 'HERE WITH YOU. HERE FOR YOU.'). Below the logos is a green progress bar. The main content area is titled 'Your Energy Profile' and includes a gauge showing energy efficiency levels from 'LESS EFFICIENT' to 'MORE EFFICIENT'. A callout box states: 'Your home in Boston, MA can use energy more efficiently. \$3,250 POTENTIAL 3-YEAR SAVINGS'. A prominent orange button reads 'Save Energy Now!'. Below this, there is a section for 'Your Customized Action Plan' with a dropdown menu set to 'Schedule a no-cost in-home energy assessment'. A pie chart shows the breakdown of savings: Heating (largest), Electronics & Lighting, and Water Heating. A list of recommendations includes: 'Upgrade attic insulation', 'Seal air leaks in your home to increase efficiency and comfort', 'Consider upgrading to high efficiency heating equipment', and 'Use an advanced power strip'. A legend on the right identifies the pie chart segments: Water Heating (blue), Electronics & Lighting (orange), and Heating (grey).

DEEPER SAVINGS



► Depth of Savings Performance Indicators proposed for Council consideration in April 2014

- Help set goals and define success
- Measure and communicate progress
- Assess where and how to adjust program design and delivery
- Quantify expenditures needed to achieve program goals

► To be discussed with the PAs in coming months

| Indicator | Purpose | Data Type Needed |
|----------------------|---|--|
| Energy Use Reduction | Quantify the range of what is achievable, establish baseline to understand relative depth | Project counts, energy savings predictions, energy consumption |
| Comprehensiveness | Identify possible gaps in service and relative level of effort needed to achieve greater comprehensiveness | Cross-program tracking by site, measures installed |
| Cost Efficiency | Establish baseline and track relative costs to produce goals, identify opportunities to optimize spending for greatest impact | Costs, savings, participant counts |

STATEWIDE DATABASE



- ▶ **Site-level data are needed**
 - Establish a meaningful definition of “depth”
 - Benchmark the comprehensiveness of services toward capturing all cost-effective energy savings
 - Track progress toward those goals cost efficiently

- ▶ **MSD is a significant first step**

- ▶ **A request to the DPU is pending**

| DATA TYPES NEEDED |
|--|
| Measure Data <ul style="list-style-type: none">• Measures installed and frequency |
| Project Data <ul style="list-style-type: none">• Leads, audits, improved homes• Unique site tracking |
| Energy Savings Data <ul style="list-style-type: none">• Estimated energy savings• Actual energy savings (usage data) |
| Cost Data <ul style="list-style-type: none">• Spending by category (e.g., marketing, incentives, general admin, QA/QC) |