MA ENERGY EFFICIENCY ADVISORY COUNCIL

→ CONSULTANT TEAM

EEAC EM&V BRIEFING

▶ September 9, 2014

www.ma-eeac.org

EM&V: CURRENT STATUS

- **Focus in 2014 has been on implementing the 2013-2014 EM&V plan delivered last October**
- **53 studies are now in progress**
- **By stage:**
  - Planning: 14
  - Implementation: 32 (many have interim reports)
  - Final Reporting: 7
- **Most recent Gantt chart is posted on EM&V section of website**
- **Studies are being completed, and new ones being added, all the time**
- **Many of the studies with widest stakeholder interest are still in progress, but we do have many interesting results to report**

EM&V: OVERALL ASSESSMENT

- **Strengths**
  - A huge volume of work in underway
  - Stakeholder outreach and engagement has been bolstered
  - The collaborative framework is generally working well
- **Weaknesses**
  - Study implementation and reporting delays are increasingly common
- **Opportunities**
  - PA staffing levels have ramped up
- **Threats**
  - 2013 Annual Reports saw the first instance of a non-consensus ex-post savings claim by the PAs since the current framework began in 2009
    - Residential furnace baseline issue

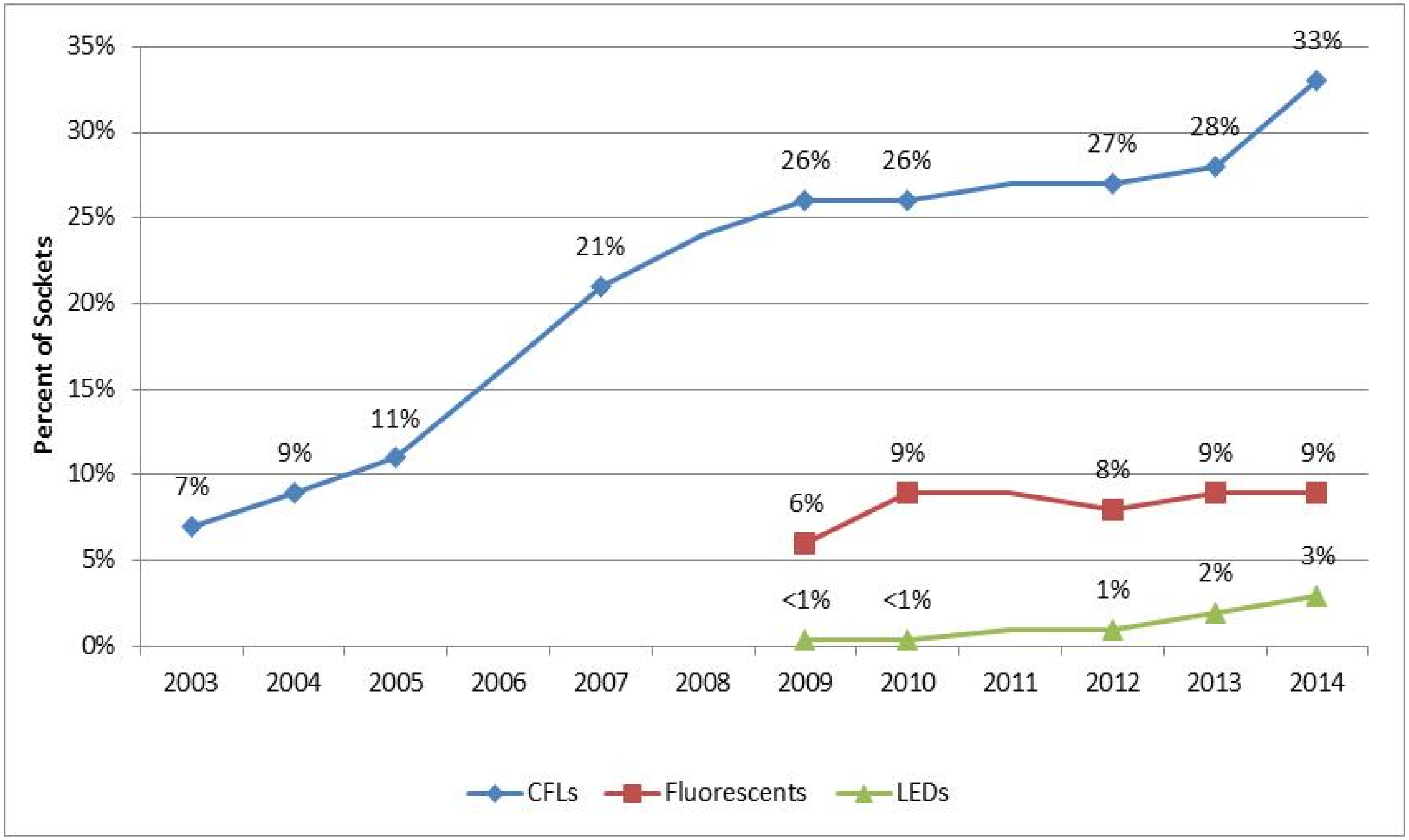
RECENT STUDY RESULTS: INTRODUCTION

- Increasing average lag time between first and final drafts of EM&V reports means large number of reports currently in the draft stage
- We therefore draw heavily on draft results
- However, we take care to present only results not expected to change
- Not only can we only scratch the surface of recent results, we can only scratch the surface of the surface

RECENT STUDY RESULTS: STUDIES TO BE REVIEWED TODAY

- **Residential**
  - Lighting Market Assessment Study
  - Lighting Market Lift Study
  - Efficient Neighborhoods + Study
  - Code Compliance Study
  - Minisplit Participant Survey
- **Both Sectors**
  - Umbrella Marketing Study
- **Non-Residential**
  - End-User General Population Survey
  - Customer Profile Study

RESIDENTIAL LIGHTING:
BREAKING THROUGH THE EFFICIENT SATURATION PLATEAU AT LAST?



RESIDENTIAL LIGHTING: SO WHAT'S GOING ON?

- **We don't know yet for sure, but several other residential lighting EM&V activities that are due for completion soon should help to explain**
  - Saturation studies in comparison states
  - Upstream interviews
  - Net-to-gross study
- **In the meantime, a personal hypothesis:**
  - Surge in efficient saturation may be due to interaction between EISA (Federal bulb standards) and MA program
  - EISA has been getting phased in by stages
  - Stage affecting 60 watt-equivalent bulbs (by far the biggest category) just took effect 1/1/2014
  - As 60 watt bulbs start to disappear, MA program may be successfully channeling people away from EISA-compliant halogens

RESIDENTIAL LIGHTING MARKET LIFT PILOT EVALUATION

- **Pilot effort involved a negotiated agreement with a retail chain to compensate it only for demonstrated lift in CFL market share**
- **Lift based on comparison of sales trends between chain stores in MA and two other states**
- **Concept is to align retailer's interests with those of the program**
- **While some lift was achieved, process evaluation results suggest there are many challenges surrounding this approach**
  - Limited up-front retailer interest
  - Lengthy negotiations
  - Very time-consuming for all parties
  - Retailers (including the participating one) now appear to be strongly opposed, believing approach transfers too much risk to them

EFFICIENT NEIGHBORHOODS PLUS®
(EN+) STUDY

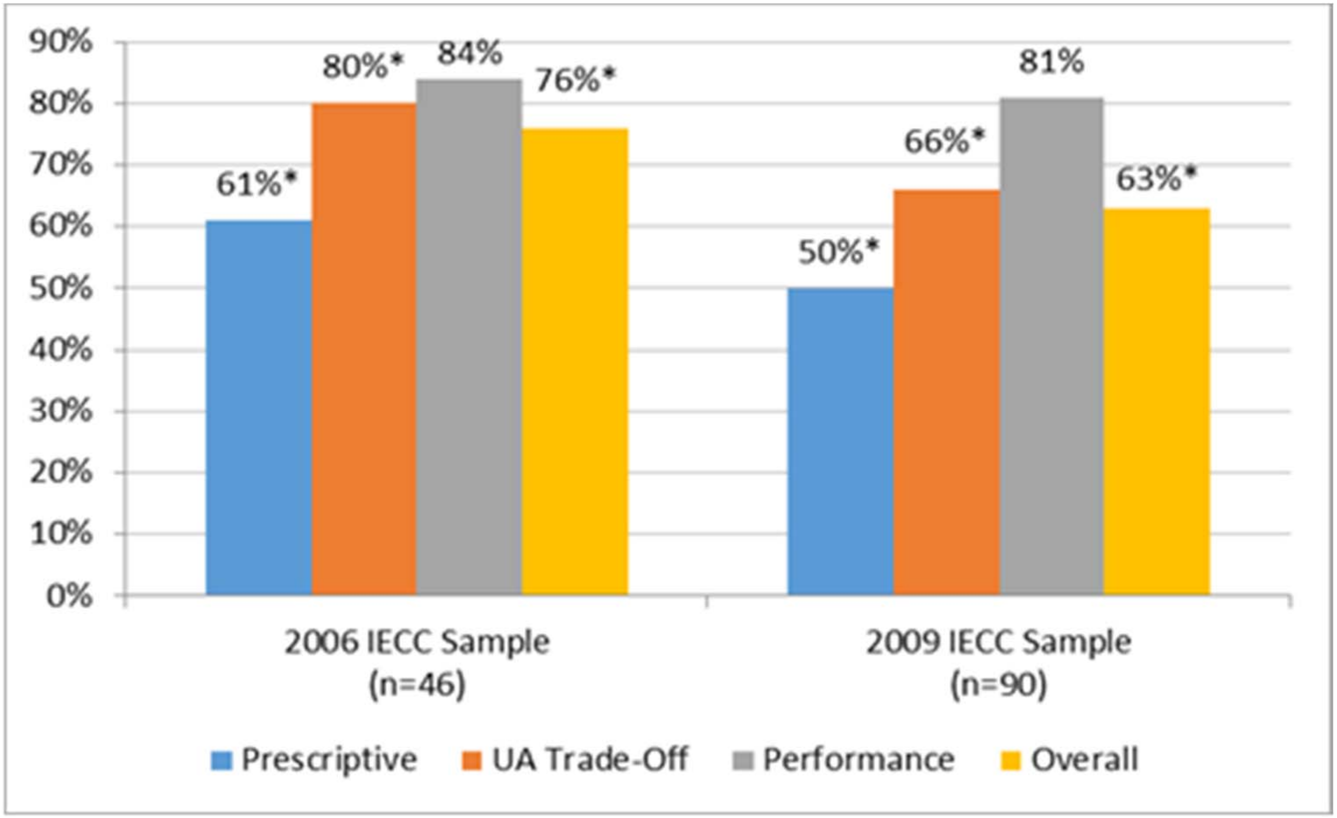
- **Designed to engage hard-to-reach customers with enhanced version of HES**
- **Targeted neighborhoods with a high concentration of single-family households with 61-100% of median income**
- **Used a variety of custom marketing and outreach tactics, and also included enhanced incentives**
- **Evaluators helped PAs select target communities with targeted characteristics**
- **Evaluation employed matched comparison communities, using a pre/post test/comparison quasi-experimental design**
  - This means looking at the difference in pre/post trends between test and comparison communities
- **Outcomes examined included:**
  - Energy assessments
  - Completed projects
  - Energy savings

EN+ APPEARS TO HAVE BEEN A SUCCESS STORY

- ► 74% of electric savings and 84% of gas savings of the EN+ Core initiative would not have been achieved under the standard HES program
- ► 69% of all energy assessments and 76% of all projects completed through the EN+ Core initiative would not have happened under standard HES
- ► Another way of putting this: EN+ generated 3 to 4 times as many assessments and projects, and 4 to 6 times as much savings as the standard HES program would have in the same communities
- ► EN+ communities had higher conversion rates (ratio of projects to assessments) than comparison communities
- ► Community targeting successful in increasing participation among low to moderate income customers
- ► Less successful in reaching more rental customers
- ► Follow-up research on incremental costs is in progress

RESIDENTIAL CODE COMPLIANCE:
A SAVINGS OPPORTUNITY?

Average Compliance by Compliance Path



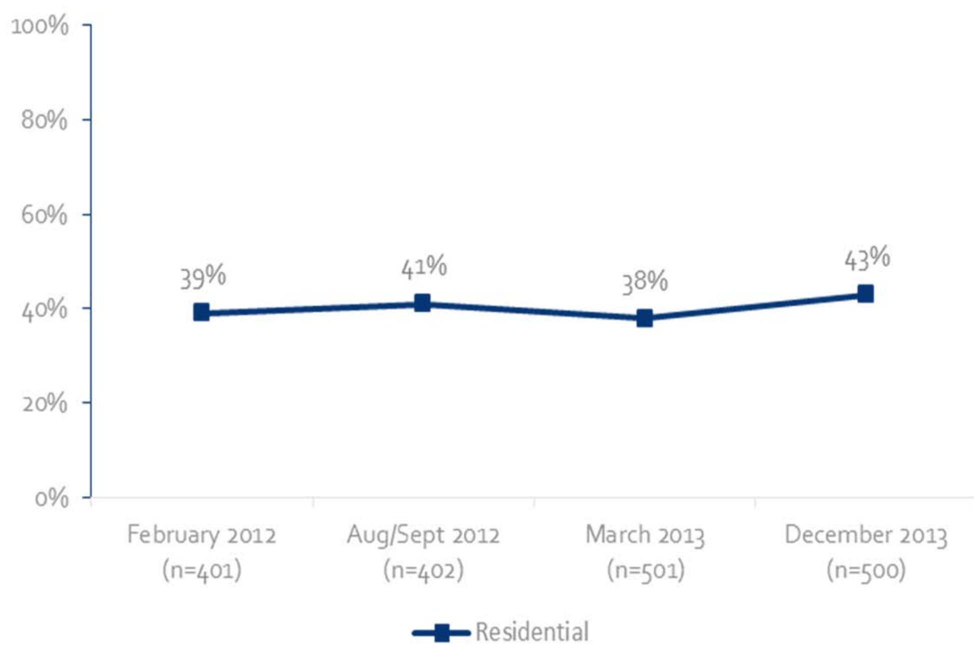
MINISPLIT PARTICIPANT SURVEY

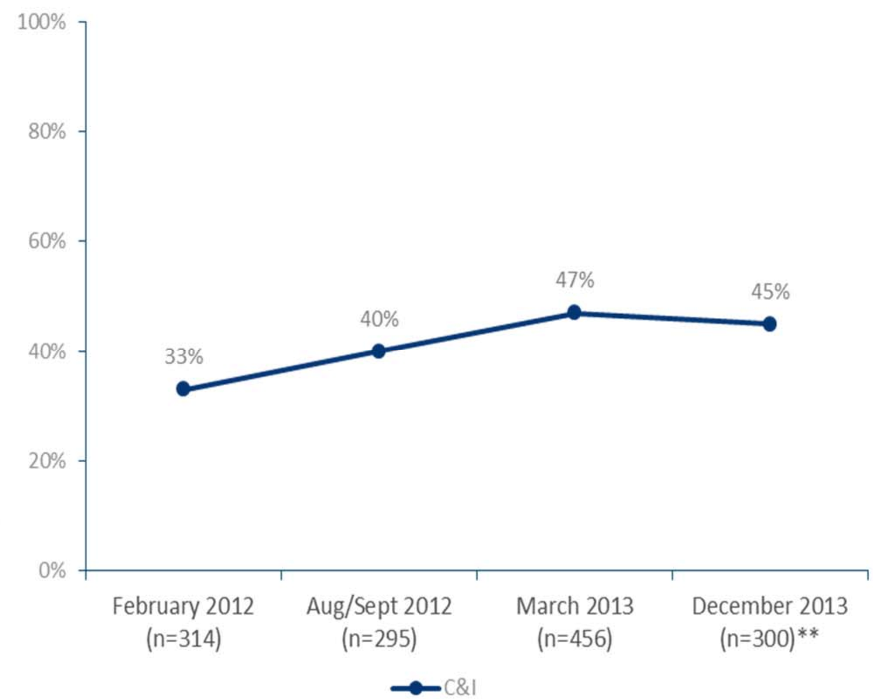
- **MiniSplits are increasingly popular, but we have limited understanding of why they are bought, how they are used, or how they perform**
- **Participant survey was done to help inform these issues, as well as to inform a subsequent field monitoring study**
- **Some top-level findings:**
  - MiniSplits are bought mainly to improve comfort
  - Majority of MiniSplits are installed in areas that previously had no cooling
    - Many such purchasers probably would otherwise have bought a RAC
  - ¾ of participants use for both cooling and heating, ¼ for cooling only
    - Usage for heating is primarily supplemental
    - Many participants have oil as primary heating source
  - Participants are generally satisfied with cooling performance, but heating performance gets mixed reviews
  - Determining baseline is challenging
- **Major field monitoring study is now underway**

UMBRELLA MARKETING STUDY

- **Previous umbrella marketing studies tracked awareness, familiarity and attitudes of Res and Non-Res customers toward the MassSave brand**
- **Latest study was more ambitious, examining:**
  - All three statewide brands (MassSave, GasNetworks and CoolSmart)
  - Both end-users and contractors
  - Potential for confusion resulting from multiple brands
- **Findings in a nutshell:**
  - End-user awareness of MassSave appears to have plateaued
    - However, among those aware, some indicators of familiarity are up
  - At present, little evidence that multiple brands are causing confusion
    - Contractors:
      - Awareness of MassSave almost universal
      - Distinct associations for MassSave vs GasNetworks/CoolSmart
    - End-users:
      - Awareness of Gas NetWorks and CoolSmart very low

UMBRELLA MARKETING STUDY: TWO YEARS OF TRACKING RESULTS ON END-USER AWARENESS OF MASSSAVE





C&I CUSTOMER TELEPHONE SURVEY

- **Surveyed a random sample of 943 C&I customers to get a better understanding of:**
  - Energy efficiency practices
  - Business characteristics
  - Decision-making processes
  - Equipment holdings
- **This study interacts closely with many others**
  - A 2nd phase, now in progress, involves on-site visits to 800 customers
  - Several other C&I studies are drawing on the telephone survey results
- **Possible topic for future public webinar**

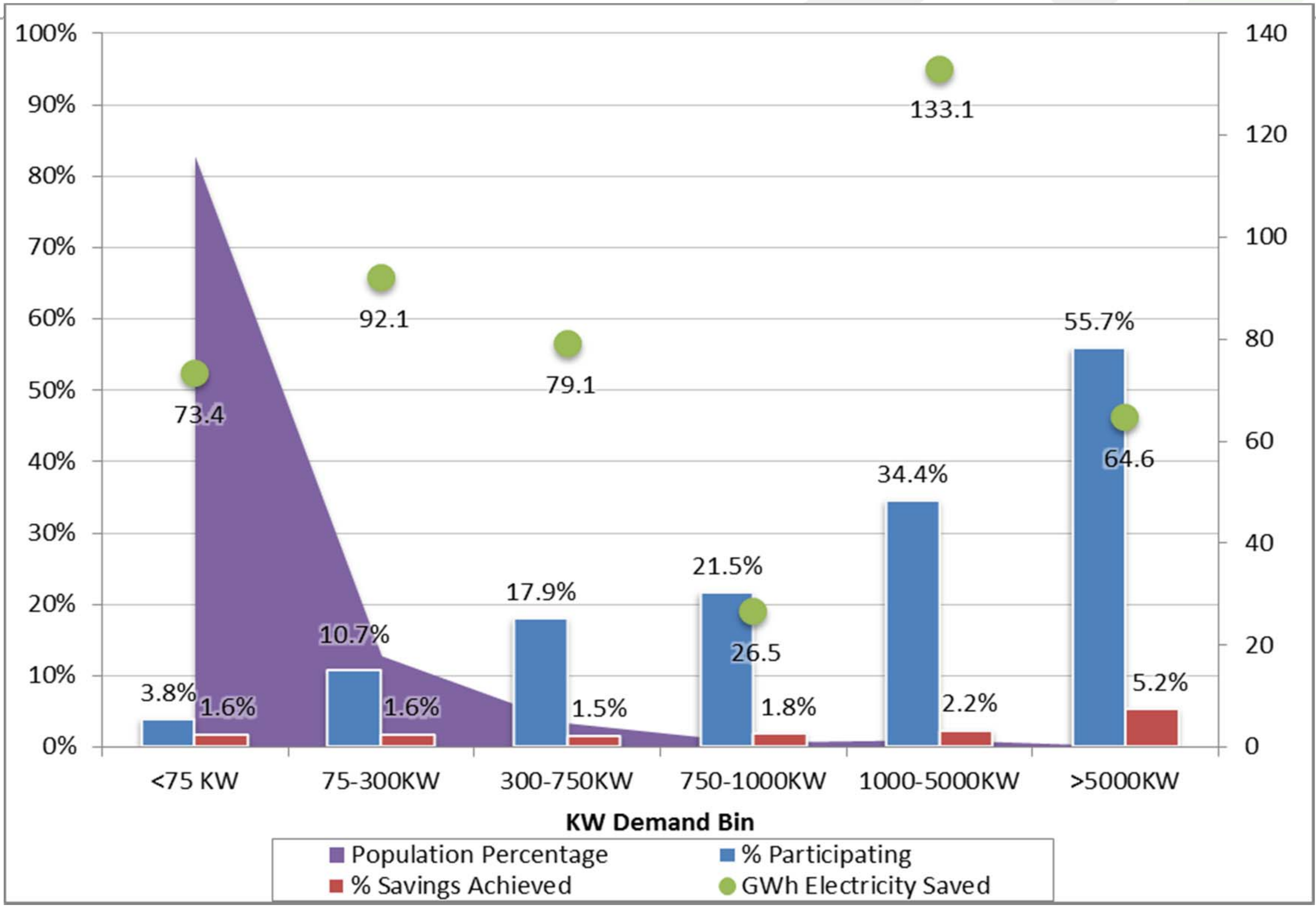
C&I CUSTOMER TELEPHONE SURVEY: SOME SAMPLE FINDINGS

- **Engagement with PAs:**
  - Respondents accounting for 43% of total kWh usage rarely or never engage with IOUs when making energy related improvements.
  - Nearly 40% of customers are not aware of programs
  - 60% of respondents making recent EE investments report not receiving an incentive
- **Use of Financing:**
  - 77% of respondents rarely or never use outside financing for improvements.
  - Financing available to most customers, but reluctant to use it for EE projects.
- **Leasing:**
  - 65% of program participants who lease their space operate under a leasing agreement wherein the tenant is responsible for the utility bills
- **Business types most likely to have undertaken recent renovations:**
  - Warehouses, Lodging, Retail
- **Audits:**
  - 24% of end-users have had one

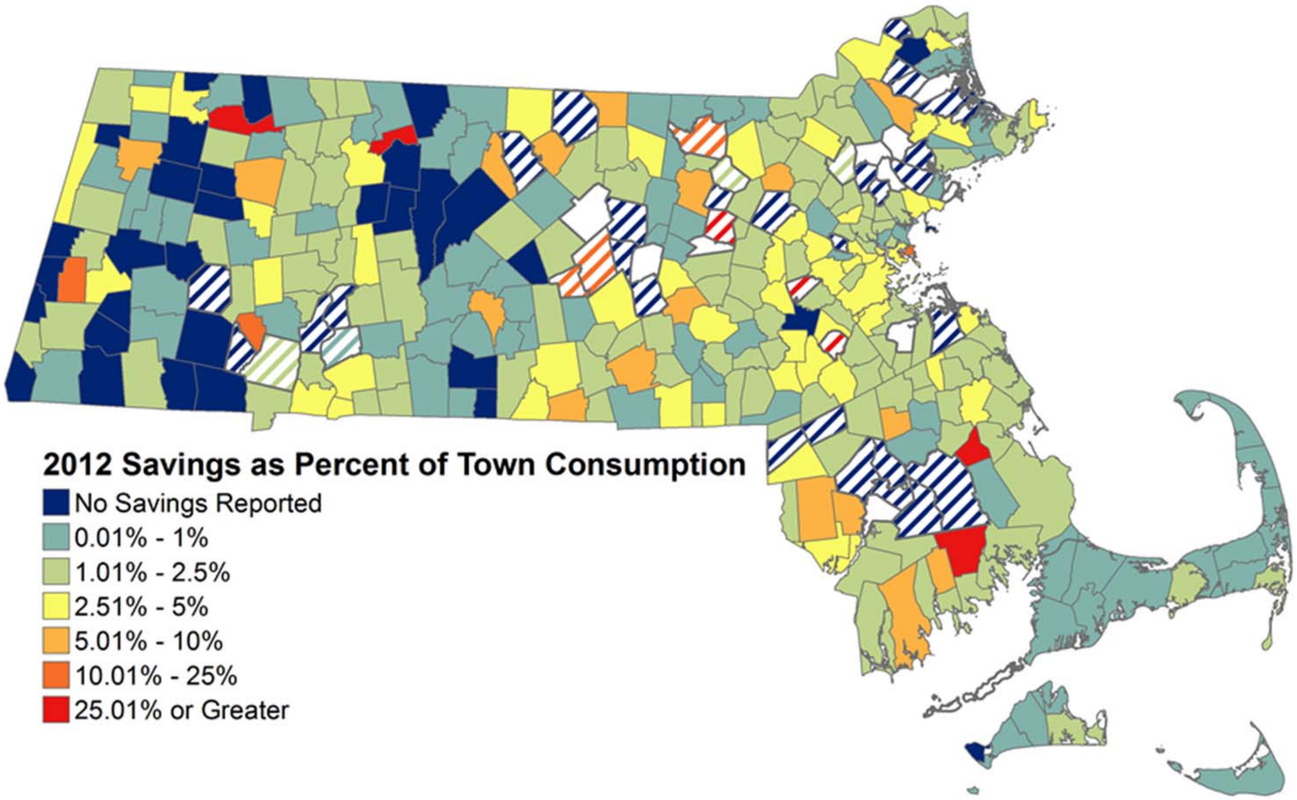
PY2012 NON-RESIDENTIAL CUSTOMER PROFILE STUDY

- **Please consider joining upcoming webinar presented by lead contractor, 2:00-3:00 ET Tuesday September 16**
- **Because of the webinar, only a quick sampler of findings today**
- **Second in a series of annual studies; first one looked at PY2011**
- **Comprehensively explores statewide trends and patterns in participation, savings and other key outcomes**
- **Draws extensively on unified statewide databases of participants and the overall population of C&I customers**

C&I CUSTOMER PROFILE STUDY: OUTCOMES BY SIZE CLASS, ELECTRIC



C&I CUSTOMER PROFILE STUDY: GROSS ELECTRIC SAVINGS % BY TOWN



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Thanks!

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