**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?

![Graph showing the adoption rates of different lighting types from 2003 to 2014. The graph indicates the percentage of sockets occupied by CFLs, Fluorescents, and LEDs over the years. The adoption rates for CFLs increase steadily from 7% in 2003 to 33% in 2014. Fluorescents show a slight increase from <1% to 9% in the same period. LEDs begin with <1% in 2009 and reach 2% in 2014.](image-url)
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

![Bar Chart]

- 2006 IECC Sample (n=46):
  - Prescriptive: 61%*
  - UA Trade-Off: 80%*
  - Performance: 84%*
  - Overall: 76%*

- 2009 IECC Sample (n=90):
  - Prescriptive: 50%*
  - UA Trade-Off: 66%*
  - Performance: 63%*
  - Overall: 81%
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

![Graph showing outcomes by size class for electric customers.](image)

- Population Percentage
- % Participating
- % Savings Achieved
- GWh Electricity Saved
C&I CUSTOMER PROFILE STUDY: GROSS ELECTRIC SAVINGS % BY TOWN
Thanks!

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