EEAC EM&V BRIEFING

September 9, 2014
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
Average Compliance by Compliance Path

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: 66%
- Overall: 63%
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

- Residential:
  - February 2012: 39%
  - Aug/Sept 2012: 41%
  - March 2013: 38%
  - December 2013: 43%

- C&I:
  - February 2012: 33%
  - Aug/Sept 2012: 40%
  - March 2013: 47%
  - December 2013: 45%
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 2\textsuperscript{nd} 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

[Bar chart showing outcomes by size class, with percentage participation and savings achieved for different kW demand bins.]
C&I CUSTOMER PROFILE STUDY: GROSS ELECTRIC SAVINGS % BY TOWN
Thanks!

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