

ENERGY

Mid-Sized C&I Customer Needs Assessment

Massachusetts Evaluation Management Committee
Public Webinar

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4/03/2014

Agenda

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 - Goals and objectives
 - Background – Why did we do this?
 - Overview of approach
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- Study details
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Contact information

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Overview of Study: Study goal and objectives

- *Research goal:*
 - Understand the extent to which current program offerings effectively serve the needs of Mid-size C&I customers, and whether new program offerings or variations of existing program offerings would better serve Mid-size customers.

- *Study objectives:*
 - Determine how Massachusetts PAs currently address Mid-size C&I customers;
 - Estimate program participation rates for the largest, smallest, and Mid-size C&I customers;
 - Identify and describe the population of Mid-size C&I customers across PAs;
 - Compare the experience of small, mid-size, and large program participants;
 - Perform gap-analysis/needs assessment for participants and non-participants; and
 - Recommend ways that the PAs could better serve these Mid-size C&I customers.

Overview of Study

What is it and why did we do this study?

What is the study about?

- This study provided an extensive analysis of the segmentation and marketing strategies of C&I customers by customer size, as defined by the electric demand.
- We used a combination of in-depth interviews, data mining, and customer surveys to:
 - Establish criteria for segmenting customers by size;
 - Investigate whether different customer segments and sub-segments were optimally served;
 - Explore possible reasons for identified patterns in the level of service; and
 - Determine whether the data support the identified reasons for differences in the level of service received.

What was the motivations for doing the study?

- This study was designed to examine whether mid-size C&I customers, or sub-segments of mid-size customers were being optimally served by existing energy efficiency program.
- There is a perceived gap in service to mid-size customers who are:
 - Too large for the Direct Install Program, but
 - Too small for PAs to have a dedicated account representative
- We wanted to see if this was true, if so, why and what can be done to improve service.

Overview of Study: How did we do it?

Stage I Research: PA and implementation contractor in-depth interviews

1. *Conducted interviews* – Conducted in-depth interviews with implementation staff and contractors to understand:
2. *Segmented customers* – Used interview results to segment PA 2011 C&I billing and tracking data

Stage II Research:

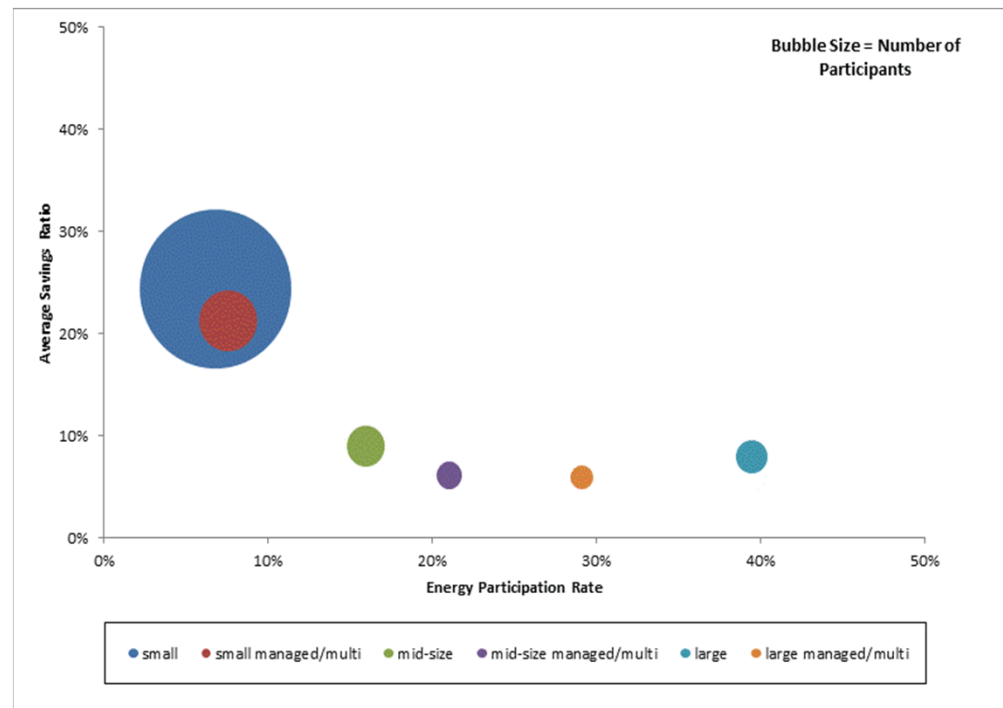
1. *Mined billing and tracking data*
 - Applied customer segmentation criteria to PA C&I billing, tracking , and account management *data*
 - Explored overall and measure level participation rates or savings ratios of mid-size, large, and small C&I customers
2. *Identified possible underserved segments* – Identified size segments and sub segments (industries and other segments) with relatively low participation and savings rates
3. *Investigated likely causes for overall trends*
 - *Stage II In-Depth interviews* – Used in-depth interviews to possible explanations for trends in data
4. *Looked for evidence to support or refute identified explanations provided by the interviews*
 - *More data mining* – Looked at measure level participation and savings rates overall, and by sub-segment
 - *Customer survey* – Survey of over 800 C&I customers segmented by industry and size category

Overview of Study

What did we find?

- PA's use a variety of techniques to segment and market to C&I customers by size – Demand is most common criteria.
- Mid-size customers have neither high participation rates of large customers nor high savings ratios of small customers – Suggesting a possible gap in service.

Average savings ratio by company size vs. participation rate



- Mid-size customers require more comprehensive solutions but face a number of cash flow and technical constraints that limit the effectiveness of existing programs to meet their needs.

Study Details

- Stage I Research
 - Approach
 - Results
- Stage II Research
 - Approach
 - Results
- Recommendations and limitations:

Stage I Research:

Whom did we interview, what did we ask, and why?

Whom did we interview?

- PA implementation staff – (7 PAs)
- Direct install contractors – (8 Implementation contractors)

What did we ask?

- Marketing strategies by size, industry, and other segmentation characteristics
- Criteria for segmenting customers by size
- Experience serving different size customers
- Potential sub-segments of customers whose needs are not optimally served
- Effectiveness of marketing approaches at serving mid-size customer

Why did we do this?

- Establish criteria for segmenting PA billing and tracking data for data mining and survey work
- Establish preliminary hypotheses to explore in data mining and primary research

Stage I Results:

Many differences in PA marketing strategies

Electric/Gas PA	PA Name	Factor Influencing Account Segmentation										Customer Segmentation Criteria and Marketing
		Tracking Level			Peak Demand	Energy Usage	Rate Class	PA Account Representation	Chains and Franchises	Municipal Accounts	Dual Fuel Accounts	
		Track Accounts to Unique Customers	Customer Level Tracking									
PAs with both Electric and Gas	National Grid		x	x			x	x	x			<ul style="list-style-type: none"> -Accounts with 300-750 kW peak demand -Accounts assigned representatives on an account by account basis based largely on industry and load factor' - Accounts 300 to 500KW assigned to a PEX contractor. Accounts 500 to 750 KW assigned an internal sales representative. -Customers with more than five accounts or a corporate parent are considered national accounts and assigned an account representative -Municipal accounts are assigned and account representative
	NSTAR		x	x	x		x	x	x			<ul style="list-style-type: none"> -Accounts with 300-750 kW peak demand -Accounts assigned to an account group and given opportunity to use directed to project expiditers. -Customers with multiple accounts have demand aggregated. If demand is between 300-750 kW, the customer is treated as mid-size. -NSTAR segments this demand category into quartiles based on energy consumption for marketing. -Municipal accounts are assigned to an account group'
	Unitil											
PAs with electric only	CLC											Does not classify accounts as mid-size.
PAs with gas only	Berkshire Gas	x		x								-For gas programs, no specific segmentation or marketing. Incentives are the same for all customers.
	Columbia Gas											<ul style="list-style-type: none"> -For gas energy efficiency programs, mid-sized customers consume less than 40,000 - 250,00 therms per year. - CET acts as a supplemental vendor for some mid-sized customers, Mid-sized customers are served by PA account reps and CET.
	New England Gas	x			x	x	x					<ul style="list-style-type: none"> -Large gas accounts are in rate classes G42 or G52 -Large gas accounts consume more than 3,000 therms per year -No specific marketing to mid-size customers

Stage I Research Results: Segmentation criteria

PA strategies varied considerably – We settled on the following definitions:

- *Small, unmanaged, non-chain/non-franchise* – These customers have peak demand of less than 300 KW, do not have a PA provided account representative, and have five or fewer accounts.
- *Small, managed or chain/franchise* – These customers have peak demand of less than 300 KW. They either have a PA provided account representative and/or have more than five accounts.
- *Mid-size unmanaged, non-chain/non-franchise* – These customers have peak demand between 300 and 750 KW. They do not have a PA provided account representative and have five or fewer accounts.
- *Mid-size, managed or chain/franchise* – These customers have peak demand of between 300 and 750 KW. They either have a PA provided account representative and/or have more than five accounts.
- *Large, unmanaged, non-chain/non-franchise* – These customers have peak demand above 750 KW. They do not have a PA provided account representative and have five or less accounts.
- *Large, managed, chain/franchise* – These customers have peak demand greater than 750 KW. They either have a PA provided account representative and/or have more than five accounts.

Stage II Approach:

Data mining – Applied customer segmentation criteria to existing billing, tracking, and account management data to calculate three different participation rates and the electric savings ratios for this analysis:

- *Account Participation Rate* – Number of participants within a customer segment / the total number of customers in that segment;
- *Demand Participation Rate* – Sum of peak demand for all participants in a segment / the sum of peak demand for all customers in the segment;
- *Energy Participation Rate* – Sum of total yearly KWh usage for all participants in a segment / the sum of total yearly KWh usage for all customers in the segment;
- *Electric Savings Ratio* – Sum of total yearly KWh saved for all participants in a segment / Sum of total yearly KWh usage for all participants in the segment;

In-Depth interviews – Conducted in-depth interviews with specific customer sub-segments and market actors to identify themes regarding the level of service to mid-size customers

- *PA Staff*– Account managers and sales representatives who service mid-size customers;
- *Project expeditors* – 3rd-party contractors to assist smaller mid-size customers (roughly 300 to 500 KW) who do not have dedicated account representatives.
- *Dual fuel customers*– Large gas small electric customers;

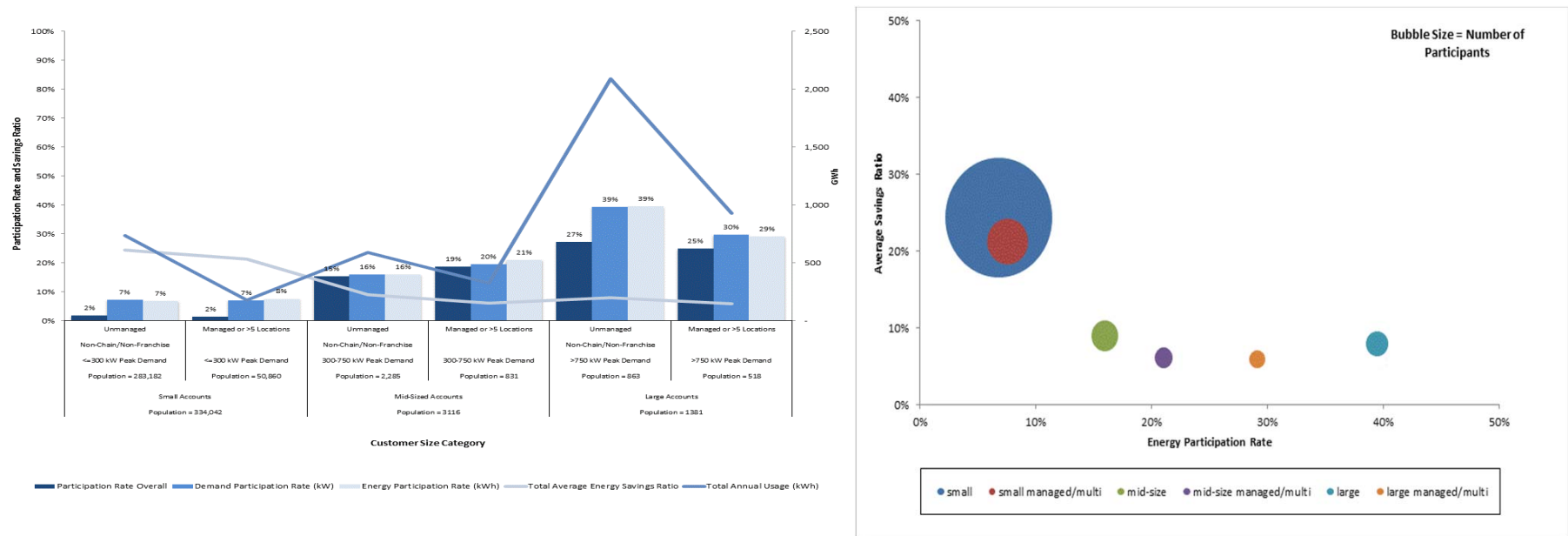
Customer survey – Survey of over 800 C&I customers segmented by industry and size category

- Used to identify measure level gaps in program support
- Examine differences in program awareness, support and customer needs

Stage II Results:

Differences in the level of service to customer size segments

Comparison of participation rates and savings ratios by segment



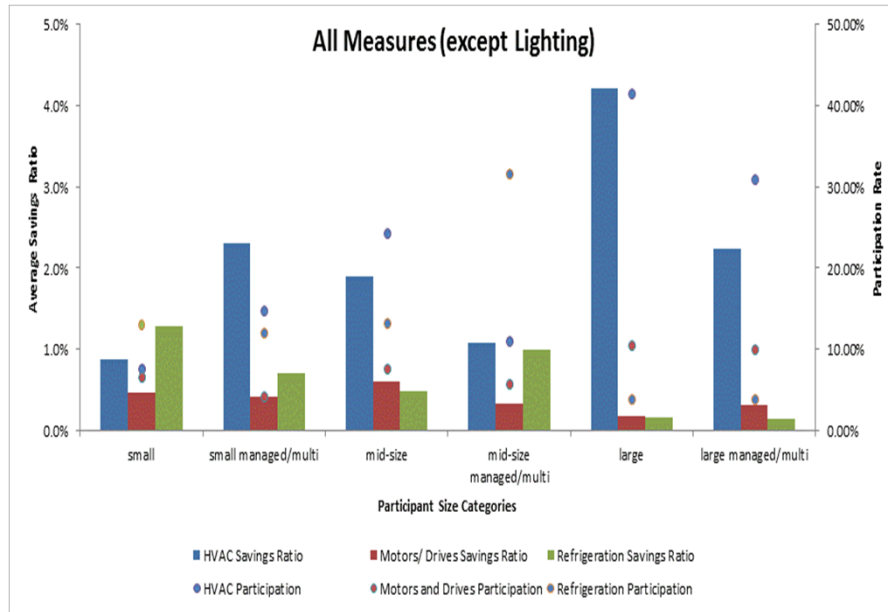
- *Small customers* – Participate infrequently (i.e. have a low participation rate, but they achieve relatively high percentage savings when they do participate.
- *Large customers* – participate more frequently, but achieve relatively low percentage savings when they participate.
- *Mid-sized customers* – achieve neither the high participation rates of large customers, nor the high savings rates of small customers.

Stage II Results:

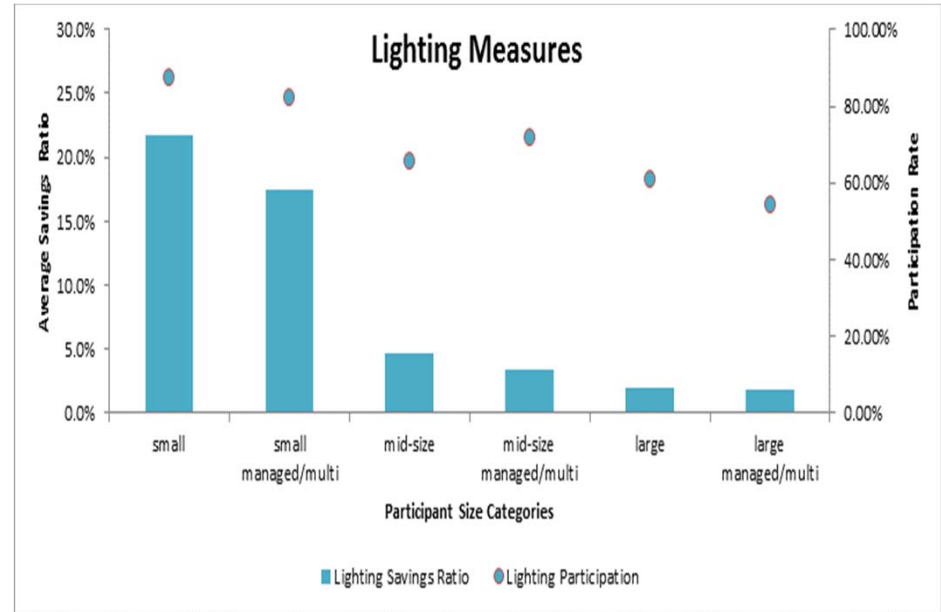
Explaining differences in performance by size segment

Mid-size customers require more complex solutions than small customers

Average savings ratio and participation rates by measure and customer size segment (non-lighting measures)



Average savings ratio and participation rates by measure and customer size segment (lighting measure only)



- *HVAC* – Mid-size customers have relatively low savings ratio and participation rates from HVAC measures compared to large customers.
- *Refrigeration* – Mid-size customers lower savings ratios than small customers but higher than large customers, which may indicate that refrigeration is an important measure category for mid-size customers.
- *Motors and drives* – Mid-size customers have the highest savings ratio but relatively low participation rates.
- *Lighting* – Mid-size customers have much greater penetration in lighting measures than in non-lighting.

Stage II Results: Explaining differences in performance by size segment Cost and cash flow constraints

PA Help by Size (Participants and non-participants)

What PA could do to help overcome barriers to EE	Small (<300 KW)		Mid-size(300-750 KW)		Large (>750 KW)	
	Non-managed / non-franchise (n=573)	Managed / franchise (n=51)	Non-managed / non-franchise (n=109)	Managed / franchise (n=39)	Non-managed / non-franchise (n=78)	Managed / franchise (n=36)
Rebates or cash incentive	51%	56%	70% *	84% *	61%	83%
Incentives covering more than one system	51%	57%	65% *	76% *	58%	72%
Technical advice	50%	60%	64% *	31% *	58%	77% ‡
On bill financing	42%	49%	51% *	32%	36% ‡	33%
Low/no interest financing	39%	31%	33%	20%	30%	29%
Access to financing	33%	28%	32%	19%	21% ‡	18%

All values are statistically significantly greater than 0 at a 90% confidence level.

* Statistically significant difference (90% confidence level) between small and mid-sized segments. Non-managed/non-franchise were compared to Non-managed/non-franchise, and Managed/franchise were compared to Managed/franchise.

‡ Statistically significant difference (90% confidence level) between mid-sized and large segments. Non-managed/non-franchise were compared to Non-managed/non-franchise, and Managed/franchise were compared to Managed/franchise.

Survey results indicate when asked what the PAs could do to help their organization overcome the barriers to implementing energy efficiency projects:

- Most mid-size firms mentioned rebates or cash incentives, incentives covering multiple systems, or on-bill financing;
- Technical advice was also commonly mentioned;
- Low interest financing, or access to financing in general, were less commonly mentioned.

Stage II Results:

Explaining differences in performance by size segment

Available engineering expertise

There are a limited number of contractors sufficiently trained in comprehensive solutions

(Mostly a large PA issue but increased access to trained contractors could also benefit the smaller PAs)

- There are too few contractors sufficiently trained in comprehensive
- Many mid-size businesses use non-PEX firms to specify work
- Need for increased marketing and training to energy services professionals already selling in the market to:
 - Inform them of the benefits of specifying energy efficient technologies and
 - Resources available when servicing mid-size customers.

Mid-size customers are less profitable for contractors to pursue

- Low potential energy savings/low payback.
- Custom engineering study cost prohibitive.
- Attracting more qualified firms to address mid-size customer needs will require reducing the cost barriers to qualifying comprehensive projects, enabling firms to remain price competitive.

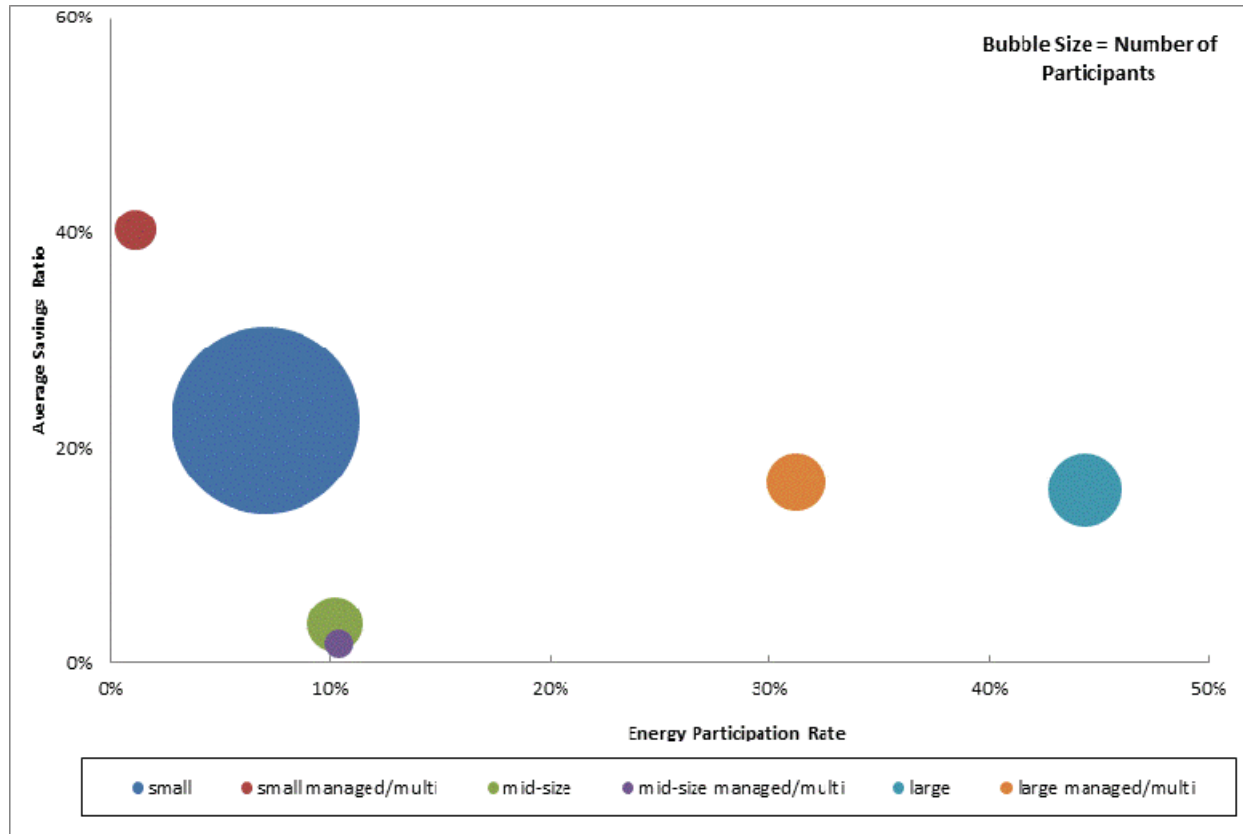
Stage II Results: Summary

- Does the evidence suggest that mid-size customers are not optimally served?
 - Yes – mid-size customers have neither high participation rates nor high savings ratios.
 - This is particularly true for non-lighting measures.

- Why?
 - The research suggests that customers require more comprehensive measure solutions
 - However, it is expensive to service these customers
 - ✓ Solutions are more complex
 - ✓ Cash flow is a concern
 - ✓ Payback is low
 - ✓ Number of customers too high for PAs to do serve directly,
 - ✓ Insufficient number of engineering firms trained in comprehensive energy efficient solutions
 - ✓ Cost to qualify projects is high, cutting into engineering firms' margins
 - ✓ Non-PEX contractors offer solutions that are not energy efficient at a lower price

Industry level Results (e.g. Healthcare)

Average savings ratio by company size vs. participation rate:
Healthcare

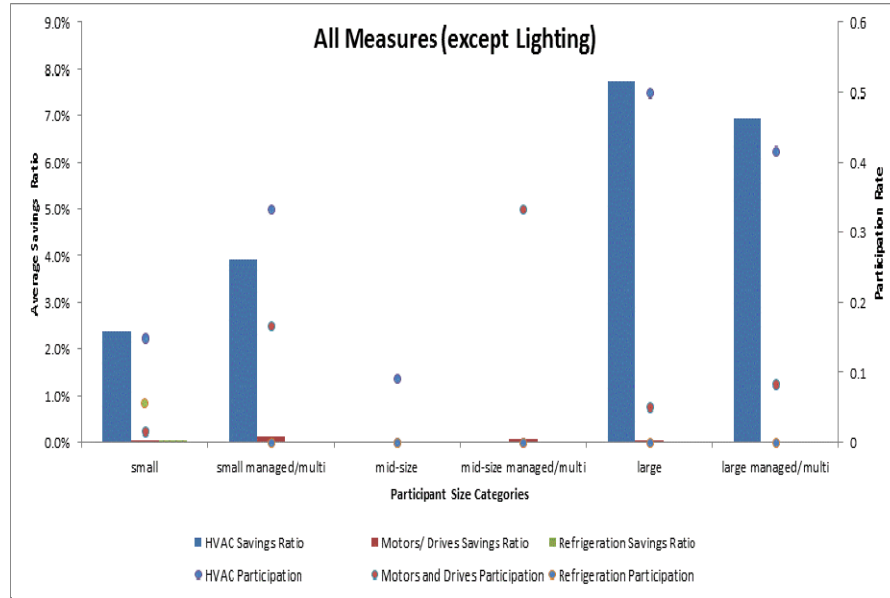


Survey results report:

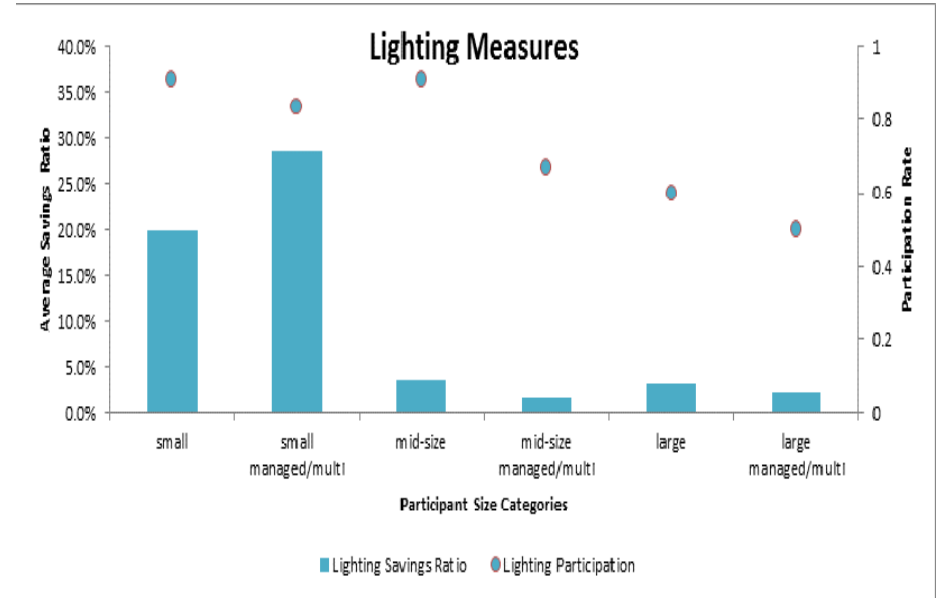
- Energy savings are not enough to justify spending limited capital improvement budgets on efficiency, appears to be a major barrier preventing mid-size healthcare customers from installing energy efficiency.
- Mid-size healthcare are unlikely to have energy managers or written policies about the purchase of energy using equipment

Industry level Results (e.g. Healthcare)

Average savings ratio and participation rates by measure and customer size segment (non-lighting measures): Healthcare



Unrealized potential savings and realized savings by measure and customer size segment (lighting measure only): Healthcare



- The data show that mid-size healthcare facilities received little more than lighting in 2011.

Recommendations and limitations

Recommendations

- *Increase recruitment and training of energy services firms able to provide comprehensive solutions*
- *Develop a statewide process for qualifying and coordinating energy services firms to provide comprehensive solutions*
- *Lower capital and administrative costs for mid-size customers and/or contractors to improve payback and margin on energy efficiency investment*
- *Increase multi-measure (comprehensive) program offerings*
- *Continue to improve marketing strategies for mid-market*
- *Support energy services firms by obtaining qualifying information*
- *Improve processes for linking multiple accounts to customers and across fuel type*
- *Standardize approaches to classifying and marketing to multi-account customers*

Limitations

- The ability to effectively link accounts to customers limits our ability to develop standardized definitions of customer size and restricts the analysis to electric customers
- These results are based on analysis of a single year (2011) of billing and tracking data, so the effects of a customer participating over multiple years will not be reflected in the analysis.

Communication

- *Communicated results to C&I management committee on March 7*
- *Communicate out to counsel and interested stake holders on April 3*

Questions or comments, please contact Ralph Prahel or Kim Crossman

Mid-Size Customer Needs Assessment

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