

2016-2018 Three-Year Electric & Gas Energy Efficiency Plans Planning Workshops

Briefing Documents for C&I Workshop #2 February 17, 2015

Prepared by DOER, the Massachusetts PAs, Raab Associates and
the EEAC Consultants



Table of Contents

Section 1 – Small Business	3
Section 2 – Behavioral & Engagement Programs.....	5
Section 3 – Commercial Real Estate	8
Section 4 – Hockey Stick Pattern.....	11

SECTION 1 – SMALL BUSINESS

DEFINITION

Throughout the 2013-2015 Three Year Energy Efficiency Plan, the Small Business Retrofit program (often called the Direct Install (DI) Program) has been targeted toward smaller C&I customers with a combined average monthly demand of 300 kilowatts (kW) or less, excluding municipal and national or large franchise customers who generally have more sophisticated energy services procurement processes.¹

The Small Business offering has generally included incentives of up to 70% of project costs for specific types of eligible measures addressing lighting, refrigeration, domestic hot water, and some HVAC controls, with the option to finance the remainder for up to 24 months. Small business customers are also eligible to participate in other C&I New Construction and Retrofit offerings, for instance when they are replacing a failed boiler or HVAC unit or on a custom project like weatherization if the project meets the cost effectiveness screening.

BACKGROUND

Massachusetts PAs have successfully provided energy efficiency services to thousands of Small Business customers in some form for at least 20 years, making a number of improvements to the Program over that period of time. Program origins go back to the 1990s, when the turnkey “direct install” model was developed to customers with less than 50 kW peak electricity demand. In keeping with the continual focus on evolving and improving the Program, with the 2010-2012 Three-Year Plan² the PAs began integrating electric and gas programs and providing seamless, single-point-of-contact services while expanding eligibility to customers with less than 300 kW peak demand.

Today, the Small Business program continues to provide turnkey services implemented by vendors subcontracted by individual electric PAs. The Small Business program provides free energy audits of participants’ businesses, recommendations for efficiency measures, incentives, and financing options. The vendors install or subcontract the installation of measures, then invoice the electric PAs for the incentive amounts. Electric PAs then invoice gas PAs for the cost of incentives associated with any gas measures installed.

Statewide, the diverse customer base eligible for the Small Business Program includes more than 218,000 unique customers with the vast majority using less than 10,000 kWh, or less than a typical single family home.³ Small Business eligible customers represent 96% of C&I PA accounts and 42% of all C&I usage.

Small Business eligible customers comprise a diverse range of segments including mall offices, retail, food sales & service, small wholesale and non-profit entities. Examples of small business customers include everything from car dealerships, full service restaurants, and independent grocery stores to standalone banks or credit unions and churches. The range of end uses found in small businesses is generally more limited than larger customers and is often dominated by lighting with HVAC and water heating being the dominant gas end uses. Additional end uses can include refrigeration, food service, and plug loads.

It is important to also note that all Small Business eligible customers are electric customers but all are not necessarily natural gas PA customers, especially west of Route 495. It is estimated that roughly 137,000 gas accounts are eligible while approximately 80,000 accounts statewide receive a delivered fuel of some sort

¹ Three Year Energy Efficiency Plan 2013-2015, pg. 191

² 2010-2012 Massachusetts Joint Statewide Three-Year Electricity Energy Efficiency Plan. October 2010.

³ US Energy Information Administration, <http://www.eia.gov/tools/faqs/faq.cfm?id=97&t=3>, Updated January 10, 2014

Small Business

February 12, 2015 C&I Workshop #2 - Implementation

(e.g., oil, propane) to satisfy their thermal needs.

ENERGY EFFICIENCY ADVANCEMENT OPPORTUNITIES

The Small Business program has successfully enabled thousands of customers to significantly reduce their electric and/or gas energy costs through participation in this program over the past several years. The PAs recognize that a forward-looking strategic approach may better optimize the services provided through this program. The forthcoming Small Business Process Evaluation, currently in draft form, suggests there remain opportunities to build upon the success of this program and to understand how best to package turnkey energy efficiency services to further expand customer participation. This evaluation found that relatively few gas measures are being installed through this program. The study also found that 89% of the electric savings come from lighting, with another 6% from refrigeration for food service customers. This leaves significant room in the Small Business initiative for non-lighting measures.

The program continues to strive towards offering a comprehensive turnkey approach for customers. There remains an opportunity to consider whether implementation strategies, technologies, or building diagnostics – already successfully applied to medium/large C&I or residential program offerings – are transferable to this customer class or a portion thereof. To this end, there may be opportunities to improve upon customer participation rates, particularly among the very large portion of small business eligible customers whose total energy usage and mix of end uses is similar to that of a residential customer. Consideration could be afforded to Main Streets or the Home Energy Services residential program model as a viable implementation strategy for these customers. Similarly, expansion of the prescriptive menu of services to custom offerings, particularly natural gas measures such as hot water, insulation and HVAC optimization, should also be considered. One limitation of the turnkey approach is the challenge that engaged and enthusiastic small businesses encounter in attempting to access comprehensive efficiency information, including upgrade opportunities and incentive information related to custom projects, because DI vendors only identify measures included in that program.

KEY QUESTIONS

Some key questions for the Council to explore during the workshop include:

- What implementation strategies, end-use technologies, or services may be offered to complement the effectiveness of this program enabling greater reach?
- What are the potential benefits and program impacts of defining the various strata of small business eligible customers? Would segmenting small business customers this way lead to increased participation, greater gas/electric integration and coordination, etc.?
- What are the new approaches the PAs are considering and do they meet these goals discussed in this workshop?

NEXT STEPS FOR CONSIDERATION FOR DRAFT PLANS

- Investigate potential for various program implementation approaches to serving the various strata of small business eligible customers.
- Determine which implementation strategies, technologies and building diagnostic capabilities are transferable and effective for serving Small Business customers.
- Expand prescriptive menu of services to better advance natural gas energy efficiency opportunities and non-lighting electric measures.

SECTION 2 – BEHAVIORAL & ENGAGEMENT PROGRAMS

DEFINITION

Historically, efficiency programs have focused on financial incentives to encourage customers to purchase energy efficient equipment. Incentives are typically offered to offset the higher cost of an efficient piece of equipment relative to a standard efficiency alternative. However, customer behavior is also a determinant of energy use. There are multiple types of engagement programs that seek to achieve energy savings, including behavioral programs and Strategic Energy Management (SEM).

Behavioral programs attempt to influence behavior and attitudes to encourage reductions in energy use. These programs typically provide feedback on energy usage, alone or in combination with other marketing techniques, to encourage behavioral changes at home or in a commercial or industrial setting including, but not limited to, operations and maintenance practices.

Strategic Energy Management is similar to behavioral programs in that both actively engage the customer, but is different in that its focus is on individual customers, rather than groups of customers typically included in behavioral programs or their control groups. The Consortium for Energy Efficiency defines SEM as, “taking a holistic approach to managing energy use in order to continuously improve energy performance, by achieving persistent energy and cost savings over the long term. It focuses on business practice change from senior management through shop floor staff, affecting organization culture to reduce energy waste and improve energy intensity.”⁴⁻⁵ SEM may sometimes be regarded as the management and sales form of continuous energy improvement (CEI), which is more often regarded as an engineering tool. Hereafter in this document, these terms will be used interchangeably.

BACKGROUND

Behavioral programs are increasingly being used as a means to achieve energy savings in the residential sector. These programs typically divide homes into a control group and a treatment group, with the treatment group receiving information on how to reduce energy use. If the information is effective, the treatment group changes their behavior and use less energy than the control group does. One estimate states that behavioral savings are cost effective and achievable for 88% of Massachusetts households are eligible to save; totaling a potential 441 GWh.⁶ This 441 GWh is equivalent to 39% of the total Massachusetts savings for 2013.⁷

Commercial and industrial behavioral programs are not as commonly deployed to achieve energy savings as in the residential sector. ACEEE has studied some successful commercial behavioral efforts to determine the common elements; the results are outlined in a report called Greening Work Styles.⁸ This paper finds that behavioral programs in government, utility, office and hospital buildings can reduce energy use between 4 and 20%, but there are little cost or evaluation data available to determine the cost-effectiveness of these programs.

Programs in the Pacific Northwest have found success with SEM/CEI programs that provide guidance to large industrial customers to make their manufacturing process more efficient on energy per unit of production basis. These programs can include funding for an energy manager, engineering assistance to create a regression model describing the energy use of the process, and training for employee engagement. The purpose of the program is to teach the employees how to identify and act on opportunities to save energy through changes in operations

⁴ http://library.cee1.org/sites/default/files/library/11283/SEM_Minimum_Elements.pdf

⁵ http://library.cee1.org/sites/default/files/library/11282/Industrial_SEM_Initiative.pdf

⁶ <https://www.aceee.org/files/proceedings/2014/data/papers/5-284.pdf>

⁷ <http://www.mass.gov/eea/docs/doer/energy-efficiency/eeac-annual-report-2013.pdf>

⁸ <http://www.aceee.org/sites/default/files/publications/researchreports/b121.pdf>

Behavioral & Engagement Programs February 12, 2015 C&I Workshop #2 - Implementation

and maintenance practices as well as through capital upgrades. Energy Trust of Oregon, Bonneville Power Administration, and Puget Sound Energy are realizing 15 to 25% of all C&I savings from these types of projects.⁹ An added benefit to SEM programs is that companies tend to implement significantly more traditional capital projects once engaged in a SEM program. Bonneville Power Administration has seen the number of capital projects more than double and the savings from capital projects triple after customers enroll in a SEM program.¹⁰ Pilot programs with smaller industrial customers (1 to 7 million kWh annual use) are also proving to be cost effective.¹¹

SEM/CEI programs can incorporate the ISO 50001 standard for energy management into the program for companies that are large enough to bear the cost and have the interest in becoming certified.¹² ISO 50001 establishes a methodology for the measurement and documentation of energy use, and requires improvement to maintain certification.¹³ A US Department of Energy program, Superior Energy Performance (SEP), recognizes the achievements of companies through the Energy Performance Pathway that are ISO 50001 certified and have documented 5%, 10% or 15% savings over a three year period. Companies that have been managing energy for a longer period of time can earn recognition through the Mature Energy Pathway.¹⁴

The Massachusetts PAs engage their largest customers by a MOU process. Pilot behavioral efforts with some of these customers have achieved poor results and a conclusion that behavioral programs may too resource-intensive for the resulting benefits.¹⁵

The Massachusetts PAs provide incentives for Building Operator Certification (BOC)¹⁶. From the BOC website, "BOC saves money by improving the energy efficiency of heating and cooling systems, and enabling operators to be proactive in complying with environmental regulations affecting facility operations and maintenance."¹⁷ The Massachusetts PAs claim savings as the result of providing Building Operator Certification training, so there is precedent for claiming savings due to an anticipated change in behavior. Savings are claimed based on an evaluation that determines the amount of savings resulting from improved operations and maintenance on a per square foot basis in the facilities managed by the training attendees.¹⁸

ENERGY EFFICIENCY ADVANCEMENT OPPORTUNITIES

Educational institutions like colleges and boarding schools can be good candidates for behavioral programs. A study of Dartmouth and Brooks School found energy savings of up to 10% from behavioral changes in dormitories as the result of real time energy use feedback.¹⁹ The feedback included a cartoon polar bear that showed distress at high energy use, combined with competitive rankings of the participating dorms. UMass Amherst has run annual behavioral competitions for their students, known as the Green Games, from 2012 through 2014 in partnership with Johnson Controls.²⁰

⁹ http://swenergy.org/publications/documents/Utility_SEM_programs_03-2013.pdf

¹⁰ http://swenergy.org/publications/documents/Utility_SEM_programs_03-2013.pdf Page 7 Table 3

¹¹ http://aceee.org/files/proceedings/2013/data/papers/4_011.pdf

¹² http://aceee.org/files/proceedings/2013/data/papers/5_078.pdf

¹³ <http://www.iso.org/iso/home/standards/management-standards/iso50001.htm>

¹⁴ <http://energy.gov/eere/amo/sep-and-iso-50001-certification-process#how-to-qualify>

¹⁵ Feedback from NSTAR Jan 20, 2015

¹⁶ <http://www.theboc.info/ne/ne-schedule.html>

¹⁷ <http://www.theboc.info/ne/ne-schedule.html>

¹⁸ <http://www.theboc.info/w-energy-savings.html> & <http://www.energymaine.com/docs/bocfinalreportdelivered.pdf>

¹⁹ http://neukom.dartmouth.edu/docs/lorieloeb_unplugorthepolarbeargetsit.pdf

²⁰ <https://www.umass.edu/sustainability/get-involved/green-games>

Behavioral & Engagement Programs February 12, 2015 C&I Workshop #2 - Implementation

The report “Powering Down: Behavior-Based Energy Conservation in K-12 Schools” by the U.S. Green Building Council examined the energy savings and persistence of five public school case studies achieving 20 to 37% savings using behavioral strategies across 4-6 years.²¹ Pilot programs run by the Massachusetts PAs have been engaging schools through programs such as the See the Light Energy Toolkits.²²

As noted above, SEM/CEI is a strategy implemented in the Pacific Northwest and more utilities are adopting these programs across North America. Efficiency Vermont is implementing a pilot CEI program that expands the eligible customer base to include institutions (a college and a hospital) as well as manufacturers.

On the other hand, there remain significant barriers to implementing behavioral and SEM/CEI programs. These barriers include lack of verifiably cost effective savings, uncertainty about measurement and persistence of energy savings, a lack of local program implementers and contractors and/or customer staff to manage the behavioral programs. Efficiency Vermont is leading a group called the North East Regional CEI Group, with participation of a dozen utilities in the US northeast and Canada, to try to overcome some of these barriers and education program administrators and evaluators on the east coast.²³

KEY QUESTIONS

Some key questions for the Council to explore during the workshop include:

1. Should a distinction be drawn between programs that only seek to change customer behavior and programs that combine behavior and longer term energy efficiency engagement (SEM/CEI)?
2. Are C&I behavioral and/or SEM/CEI programs cost-effective and a good fit for Massachusetts? If not, under what circumstances can they become cost-effective?
3. What are the implementation barriers for behavioral and SEM/CEI programs? Are there certain types of customers that would be better suited to these programs?

NEXT STEPS FOR CONSIDERATION FOR DRAFT PLANS

- Investigate successful behavioral programs to determine the critical elements for success and their cost-effectiveness.
- Research SEM/ CEI programs to determine their applicability, cost effectiveness, and the effort required to implement in Massachusetts.
- Evaluate the potential savings from behavioral and/or SEM/CEI programs

²¹ http://www.centerforgreenschools.org/Libraries/Resources_Documents/Behavior-based_Efficiency.sflb.ashx

²² <http://www.energytoolkits.com/ngrid/>

²³ https://www.ceeforum.org/system/files/private/11254/11437/EVT.CEI_CEE_Winter_Meeting_FINAL_ForWebsite.pdf slide

SECTION 3 – COMMERCIAL REAL ESTATE

SECTOR DESCRIPTION

According to the Massachusetts Commercial Real Estate Survey Analysis report, “The Massachusetts commercial real estate (CRE) market is comprised of a diverse mix of customers that vary by building type with different energy end uses. It includes office buildings ranging from small single-tenant buildings to large multiple-tenant high-rise buildings, restaurants, warehouses, and retail businesses that run the gamut from standalone establishments to large-scale shopping malls. Discovering opportunities for energy efficiency programs in CRE requires an understanding of the relationships between property owners, managers, and tenants.”²⁴

BACKGROUND

The CRE sector has been identified as a significant opportunity for energy efficiency savings but one with many barriers to address, including multiple actors and split incentives between building owners and tenants. Interest in addressing these barriers is growing and is supported by actions and studies by a number of groups. For example, the PAs sponsored a Point 380 Market Opportunity study completed in 2012 that identified CRE (office in particular) as a prime target for energy savings in the near future.²⁵ To capitalize on these potential savings, the PAs’ 2013-2015 Energy Efficiency Plans include development of a roadmap to better serve the CRE sector.²⁶ During this timeframe, the Cities of Boston²⁷ and Cambridge²⁸ adopted building energy disclosure ordinances that apply to commercial properties, with Boston’s ordinance also requiring an energy action or assessment every five years. Lastly, the Buildings Subcommittee of the Massachusetts Global Warming Solutions Act Implementation Advisory Council has encouraged the Commonwealth to supplement its efforts to reduce the GHGs emitted by the CRE sector. Each of these independent actions point to significant support for engaging with the CRE sector to increase its energy savings.

The Commercial Real Estate Working Group (CRE WG) was formed to identify barriers and opportunities to create market-based solutions that enable energy efficiency investments in the CRE sector. The CRE WG was convened by a diverse group that includes the Massachusetts Department of Energy Resources, Northeast Utilities (now Eversource Energy), National Grid, A Better City, the Massachusetts Association of Realtors, The City of Boston, Meister Consulting and the Massachusetts Energy Efficiency Advisory Council Consultants.

The work of the CRE WG is being conducted in 4 phases. These include a review of CRE efficiency programs and interviews with 16 Boston CRE owners and managers representing 32% of Boston’s CRE square footage. As a result of this research work, four strategies to address barriers in the CRE sector were identified and include:

1. turnkey delivery model for small and mid-size CRE customers,
2. pre-packaged options for CRE customers,
3. introducing “energy efficiency leases” with key CRE owners and asset managers, and
4. promoting “dashboards” and building labeling to increase energy awareness and transparency.

²⁴ This EM&V report is in draft form as of Feb 6, 2015, and draft results are being cited in this briefing document. Councilors may request a draft version of this report – please contact EEAC Consultant C&I lead George Lawrence. Please note the draft reports should not be shared outside of the Councilor’s organization. Final report is anticipated in Q1 2015.

²⁵ <http://ma-eeac.org/wordpress/wp-content/uploads/Market-Opportunity-Analysis-Project-Overview-EEAC-Rev3-2.pdf>

²⁶ http://ma-eeac.org/wordpress/wp-content/uploads/ExhibitCompact_1StatewideElectricandGas_ThreeYearPlan_110212.pdf
see numbered page 215

²⁷ <http://www.cityofboston.gov/eeos/reporting/>

²⁸ <http://www.cambridgema.gov/CDD/zoninganddevelopment/sustainablebldgs/buildingenergydisclosureordinance.aspx>

Commercial Real Estate February 12, 2015 C&I Workshop #2 - Implementation

The four strategies were vetted by roundtable discussions with CRE market actors in a focus group format. Discussions were held with large owners and tenants, and individual interviews were conducted with small owners. Based on the outcomes of roundtable discussions, a roadmap document is being prepared that will summarize the work of the CRE WG, propose market-based strategies for programs that will address the barriers identified in the CRE sector, and propose items for further review (short-term and long-term).

Simultaneously, National Grid and NSTAR (now Eversource Energy) introduced a new initiative called Sustainable Office Design in 2014 as a means of delivering integrated technical solutions to the leased commercial office market. The initiative's goal is to increase penetration of utility-delivered savings in the leased office tenant improvement sector. Specific strategic elements of the new program are to:

1. Achieve higher savings by moving beyond simple prescriptive lamp and ballast approaches to system-based/integrated design solutions.
2. Provide an enhanced service to this market sector with newly crafted features aligned to the needs of the building management / tenant improvement market.
3. Offer a predictable incentive at \$1.00 per square foot (sf) of leased space (net of common areas) for qualifying light fixtures and controls projects
4. Execute quick 1-month turnaround timeline for application review

ENERGY EFFICIENCY ADVANCEMENT OPPORTUNITIES

There are three sources for identifying opportunities in the CRE sector: 1) the work of the CRE Working Group, 2) the Market Sector Profile for the Office sector²⁹, and 3) the forthcoming Massachusetts Commercial Real Estate Survey Analysis.

Findings from the CRE WG Interviews:

- 90% of leases pass on energy costs to tenants
- 97% of those interviewed formally track energy use
- EE upgrades based on periodic system review, costs for upgrades and payback period
 - Many upgrades implemented when use starts
 - Owners tend to be decision makers
 - 5 year or less payback preferred (3 years seems more likely)
- **Barriers**
 - Lack of knowledge of EE opportunities and incentives
 - Wait time to identify and hire engineering firms that are often not acceptable to both Owner/Managers and PAs
 - Time and cost to conduct feasibility studies for non-prescriptive measures
 - Tenants ability to monitor and realize the benefits of EE due to lease structure
 - Expected length of the lease
- **Potential Solutions**
 1. Pre-packaged suites of energy efficiency options drew interest from both owners and tenants as a viable way to increase energy efficiency upgrades in buildings, but require careful planning to be most effective. These prepackaged options could include lighting, HVAC and other measures. Streamlined incentive paperwork and incentive payments would be helpful.
 2. Increase engagement with tenants. Energy tracking and dashboards are useful to both owners and

²⁹ <http://ma-eeac.org/wordpress/wp-content/uploads/Office-Buildings-Market-Sector-Profile-Final-Report.pdf>

Commercial Real Estate February 12, 2015 C&I Workshop #2 - Implementation

tenants. CRE actors want to know how they compare to other buildings, tenants would like to see programs offering equipment and performance incentives together, and both owners and tenants are interested in behavioral programs.

3. Perform outreach to building managers and owners. Work with the owners to incorporate energy efficiency into retrofits or tenant fit-out. During major retrofits and fit-outs work with customers to ensure HVAC equipment is properly sized by providing sizing guidelines as well as O&M plans to ensure the system continues to operate optimally in the future.
4. Target marketing to CRE businesses based on building vintage. The CRE study found that the majority of energy consumption occurs in building built before 1990. Furthermore, 65% of the pre-1990 buildings had not undergone a renovation within the past five years. Older buildings that have not undergone more recent renovations or equipment upgrades may offer opportunities to capture energy savings.
5. Currently, energy efficiency leases do not appear to be a viable tool to improve efficiency in building spaces, given strong landlord reluctance to change current lease structures. This would need to be a longer term market-transformation opportunity.
6. Leveraging the role of account managers. The study showed that of the CRE businesses considering energy efficiency investments, a large proportion had PA account managers. Account managers can continue to play a critical role in working with CRE businesses to communicate program information and to assist them in navigating the participation process.
7. Speak to real-estate professionals in their own language. Talk about return on investment and internal rates of return, not just energy savings.

KEY QUESTIONS

Some key questions that the Council may want to explore during the workshop include:

- What are the most effective existing PA outreach strategies and programs to reach owners, managers and tenants in the CRE sector?
- What would be the most effective supplemental strategies and programs to reach owners, managers, and tenants in the CRE sector?
- Is there a role for dashboards, building labeling, or software screening tools to identify buildings with high usage so they can be targeted for increased attention?

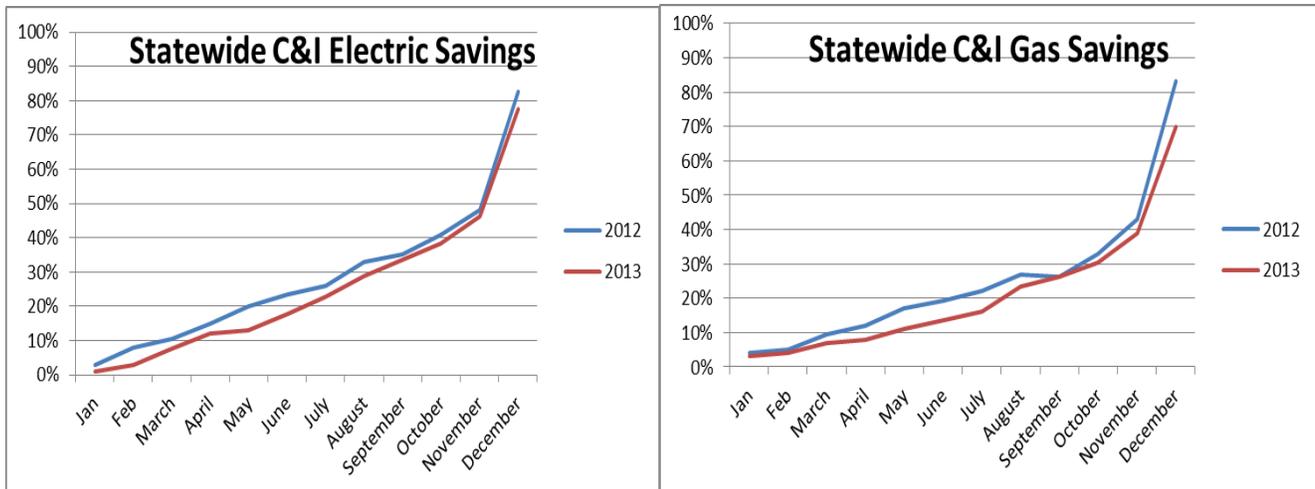
NEXT STEPS FOR CONSIDERATION FOR DRAFT PLANS

- Implement recommendations from CRE Working Group Roadmap, Massachusetts Commercial Real Estate Survey Analysis and Office Market profile report and other supplemental strategies
- Expand Sustainable Office Design program features, including streamlined review and incentives, to technologies beyond lighting
- Explore market transformation opportunities

SECTION 4 – HOCKEY STICK PATTERN

DEFINITION

The “Hockey Stick” describes the pattern of savings throughout the course of a calendar year in which a significant portion of a given year’s savings occur in the final months of the year. The charts below shows this pattern in the Massachusetts C&I programs in both 2012 and 2013.



BACKGROUND

The Hockey Stick pattern is common among energy efficiency programs, including those run in Vermont, Rhode Island and New York, among others. In many ways, it is similar to the pattern of revenue recognition wherein many companies recognize a larger percentage of their annual revenues in the quarter immediately preceding their fiscal year-end. Savings are recorded or claimed when a project is finished and the application for incentive paperwork is submitted by the customer and processed by the PAs or a PA post-installation inspection verifies the project is complete.

Concerns about the hockey stick pattern include:

- An increase in activity to close and claim savings in December takes time and resources for both the customers and PA/subcontractor personnel. Such a concentrated effort in a short time period is at risk of significant impact if events such as winter storms cause conflicts.
- As can be seen in the chart above, the magnitude of the savings claimed in December can be more than one-third of the total annual savings. Leaving such a large portion of annual savings to so late in the year makes communication around planning difficult and limits the amount of time available to make changes in implementation if the savings are lagging behind goals. The PAs have insights into the “pipeline” of projects that are likely to represent savings in the fourth quarter, however the EEAC council does not have access to these same insights. These challenges are likely to be exaggerated in the third year of any three-year plan in which savings goals for the first two years have not been met.
- The data indicating whether the PAs are able to achieve their three-year goals for 2013-2015 will not be available until February of 2016, past the time for the current three-year planning process

Hockey Stick Pattern February 12, 2015 C&I Workshop #2 - Implementation

for 2016-2018. This discrepancy hinders insights into the magnitude of potential impacts from the hockey stick pattern.

ENERGY EFFICIENCY ADVANCEMENT OPPORTUNITIES

Several strategies³⁰ could be explored to alter the hockey stick pattern:

- Negotiate incentives that provide some additional benefit for the customer if the project is completed before the fourth quarter of the year. Customers may have budget or work cycles that would align well with efforts to close projects in the first through third quarters.
- Develop “limited time” offers that create a sense of urgency to complete a project earlier in the calendar year.
- Use vendor and PA staff incentives that emphasize activity in the first three quarters of the year to smooth the workflow.

KEY QUESTIONS

Some key questions for the Council to explore during the workshop include:

1. Is the Hockey Stick pattern a problem? Would a more even flow of projects result in improvements in total savings in any given year or over the course of a three-year plan?
2. What approaches have been tried, how effective have they been, and are there other potential options that should be tried?

NEXT STEPS FOR CONSIDERATION FOR DRAFT PLANS

- Determine if the Hockey Stick pattern is an issue and decide how much attention it warrants
- If it is an issue, decide what approaches to try to mitigate the effect.

³⁰ <http://ma-eeac.org/wordpress/wp-content/uploads/CI-Achieving-Greater-Savings-Earlier-in-the-Year.pdf>