



March 4, 2015

REPORT #E15-308

Commercial Real Estate Participant Cohorts Market Progress Report

Prepared by:
Cadmus Group
720 SW Washington St,
Portland, OR 97205

Northwest Energy Efficiency Alliance

PHONE

503-688-5400

FAX

503-688-5447

EMAIL

info@neea.org

Table of Contents

Executive Summary	1
1 Introduction.....	6
1.1 Study Objectives	7
1.1.1 Establish the Presence of SEM Adoption by the CRE Cohorts	7
1.1.2 Estimate 2013 Savings	7
1.1.3 Determine the Savings Rate for the MPP Cohorts	7
2 Methodology	8
2.1 Establish the Presence of SEM.....	8
2.1.1 Reviewing SEM Progress Documentation	8
2.1.2 Designing the Surveys and Scoring Methodology	9
2.1.3 Conducting the Surveys	12
2.1.4 Analyzing the Survey Results	13
2.1.5 Comparing the SEM Adoption Level Estimates to Survey Results.....	14
2.2 Estimate 2013 Energy Savings	14
2.2.1 Overall Savings by Cohort	14
2.2.2 Energy Savings by SEM Adoption Level	17
2.3 Estimate the Energy Savings Rate for the MPP Firms	17
3 Findings.....	19
3.1 Establish the Presence of SEM.....	19
3.1.1 Overall Presence of SEM	19
3.1.2 Comparison of Cohort SEM Implementation with the Market Baseline	20
3.1.3 Cohorts Intention to Fully Implement SEM.....	23
3.1.4 Implementation of Individual SEM Elements.....	23
3.1.5 SEM Maturity Model Scoring Method Results	25
3.1.6 NEEA's Influence in the Implementation of SEM Activities	27
3.1.7 Barriers to Implementing SEM Activities.....	28
3.1.8 Potential SEM Tools or Services	30
3.2 2013 Energy Savings Results	31
3.2.1 2013 Electricity Savings.....	31
3.2.2 2013 Gas Savings Results	33
3.3 OC Cohort Savings by SEM Adoption Level	34
3.4 MPP Cohort Energy Savings Rates	35
4 Conclusions and Recommendations	37

5	References	40
	Appendix A. Office Competition Cohort Survey	41
	Appendix B. Market Partners Program Firm-Level Survey	42
	Appendix C. Market Partners Program Building-Level Survey	43
	Appendix D. Office Competition Cohort Survey Frequencies	44
	Appendix E. Market Partners Program Firm-Level Survey Frequencies	45
	Appendix F. Market Partners Program Building-Level Survey Frequencies	46
	Appendix G. Survey Scoring Methodologies Based on the CRE SEM Definition	47
	Appendix H. Survey Scoring Methodologies and Results Based on the SEM Maturity Model ..	48
	Appendix I. MPP Survey Findings Memo.....	49
	Appendix J. OC Survey Findings Memo	50

Executive Summary

In October 2013, the Northwest Energy Efficiency Alliance (NEEA) engaged Cadmus to conduct research on the commercial real estate (CRE) market and NEEA's CRE Initiative.¹ Since 2007, NEEA has offered the initiative to encourage the Northwest's commercial real estate market to adopt Strategic Energy Management (SEM) practices to reduce energy use. SEM is a holistic approach to managing energy that involves efficient equipment and behavioral activities and requires engagement from building staff at all levels. NEEA provides technical advice and training to ensure that building managers have the knowledge and tools they need to track and measure energy consumption. For the CRE Initiative, NEEA defines SEM as:

1. Adoption of a management-approved energy performance improvement goal at the firm, portfolio, and/or building level;
2. Documented planned activities to achieve the goal;
3. Allocation of resources (staff and training, capital, or both) toward the goal;
4. Implementation of planned activities;
5. Regular management review of progress achieved toward energy performance goal and effectiveness of SEM practices.

NEEA's CRE SEM initiative offers two paths of participation: the Market Partners Program (MPP), which employs an organizational coaching process to integrate SEM into a company's business practices, and office energy efficiency competitions that engage the target market to adopt SEM practices.

Research Objectives

NEEA's three objectives for this study were:

Establish the Presence of SEM. To assess the level of implementation of each of the CRE SEM elements, Cadmus prepared a survey and asked MPP firm executives and building managers and Office Competition (OC) building managers about their SEM practices. Cadmus developed a scoring methodology and assigned a level of SEM adoption (*no*, *some*, or *full*) to each MPP firm and OC building.

Estimate the 2013 Energy Savings. To quantify the electricity and gas savings achieved by the MPP and OC cohorts during 2013, Cadmus collected billing data and weather data and incorporated these into regression models. Cadmus incorporated the SEM adoption level results from the survey in a separate analysis to estimate its energy savings.

Determine the Savings Rate. To quantify an annual savings rate for NEEA to use for planning purposes, Cadmus conducted a separate regression analysis to estimate savings by year of program participation for the MPP firms and calculated a percentage of change in the energy use per square foot, or energy use intensity (EUI).

¹ The geographic footprint encompassed by the NEEA region includes the States of Idaho, Montana, Oregon, and Washington.

Key Findings

Establish the Presence of SEM Adoption

Five of the nine surveyed firms (56%) met the CRE SEM requirements for all five elements (*full SEM*). The other four firms (44%) met the SEM requirements for at least four of the five elements (one or more element is considered *some SEM*).

Three of the 19 surveyed OC cohort buildings (16%) met the SEM requirements for all five elements (*full SEM*). The remaining 16 buildings met the SEM requirements for at least one of the five elements (one or more element is considered *some SEM*).

In comparison, Cadmus previously conducted a CRE market characterization baseline study, which revealed that 8% of the market met the SEM requirements for all five elements and 72% met the requirements for at least one of the five elements (Cadmus 2014). This study involved survey data for 40 commercial buildings, 11 of which were CRE cohort members.

Estimate Energy Savings and Energy Savings Rates

The OC cohort saved 0.472 aMW during 2013, equivalent to 1.84% of building consumption. The MPP cohort saved 0.420 aMW during 2013, equivalent to 3.79% of building consumption. Both results were significant at the 90% level with 10% precision. The cohorts had lower electricity savings in 2013 than in 2012 (Itron, 2014). The difference is most likely due to the absence of 2013 data for October, November, and December. These are months with high energy use for electric heating that therefore have high savings potential for buildings that implemented HVAC measures or actions. Starting with the 2014 program year, NEEA will adjust the savings validation period to run from October through September so an entire year of test period data can be included in the model to more accurately reflect savings for weather-sensitive activities.

The OC cohort saved 140,990 therms in 2013, or 7.53% of consumption. The MPP cohort saved 44,334 therms in 2013, or 7.95% of consumption. The results are not significant at the 90% confidence level with 10% precision, but they are significant at the 80% level with 20% precision. The estimate of annual gas savings may be biased downward because gas use for October, November, and December of 2013 was unavailable at the time of the analysis. The missing months have high gas usage for heating and high potential for savings.

Additionally, in 2013 NEEA invested more time up front than it had in previous program years in an effort to help cohort building managers establish an implementation plan. Consequently, cohort buildings did not implement energy-efficiency projects until later in the year, so there may not have been enough months of data to capture energy savings from these projects. NEEA's documentation shows that building managers planned to implement more energy-saving activities during the 2013 program than in previous years; however, the majority of these activities did not begin until late 2013 or were planned for 2014. Cadmus had billing data through the third quarter of 2013, therefore, results do not capture savings from activities conducted in late 2013 or in 2014.

Cadmus also estimated electricity and gas savings results by SEM adoption level for the OC buildings; however, the results for each adoption level were not statistically significant at the 90% confidence level with 10% precision. The sample sizes for *full* and *no SEM* were too small for Cadmus to determine if energy savings differed by the level of SEM adoption.

Cadmus estimated annual energy savings and savings rates for MPP firms by year of participation. These energy savings rates show savings were highest during the first year of participation, decreased during the second year, and then were sustained at just over 3% during the remaining years of participation. Results were not statistically significant at the 90% confidence level with 10% precision.

Conclusions and Recommendations

Cadmus offers the following conclusions and recommendations based on the SEM adoption level and energy savings findings.

NEEA's CRE SEM initiatives have been successful in helping CRE cohorts adopt SEM, and the majority of cohort members report they intend to fully implement SEM. The SEM adoption levels for the CRE cohort are higher than the market baseline (Cadmus 2014), and the SEM initiatives encouraged cohorts to implement more energy efficiency activities (only one respondent would have implemented all projects without the initiative). Additionally, seven of the nine MPP firms and 14 of the 19 OC buildings plan to fully implement SEM.

- **Recommendation:** NEEA could continue providing resources to these MPP firm executives and building managers to help them fully implement SEM. NEEA can target the specific CRE SEM elements that each firm had not yet adopted or had partially adopted per the survey scoring results.

Budget limitations and high initial costs are the largest barriers to implementing SEM projects. Five of nine firm-level respondents, four of five building-level respondents, and 10 of 19 OC respondents said budget limitations or high costs were the largest challenge to implementing SEM activities.

NEEA can continue to facilitate SEM adoption by offering additional trainings and providing additional resources such as case studies and benchmarking data. Respondents requested training about lighting, HVAC equipment, new technologies, and best practices. Respondents also said benchmarking data and case studies would be useful.

NEEA can encourage coordination between building owners and operators by aiding facilities in creating energy teams. MPP respondents stated that more coordination could be encouraged by creating cross-functional teams and facilitating communication.

NEEA cannot currently rely solely on the data collected by the program to assess SEM adoption levels according to the same criteria used for the market characterization study

and for this evaluation. For the OC cohort, documentation does not track the reporting-to-management element and smaller OC buildings do not have any documentation.

- **Recommendation:** For the smaller OC buildings, NEEA could consider developing a simpler tracking form that documents the activities supporting the criteria of the CRE SEM definition. Building managers could fill out this tracking form and submit it to NEEA at the end of the competition.
- **Recommendation:** NEEA could consider collecting additional data to measure and report SEM adoption over time according to the same criteria used for this evaluation.

NEEA's CRE SEM Initiative leads to electricity and gas savings. The OC buildings saved 0.472 aMW during 2013, equivalent to 1.84% of building consumption. The MPP buildings saved 0.420 aMW during 2013, equivalent to 3.79% of building consumption. Both results were significant at the 90% level with 10% precision. Electricity savings rates for the MPP cohort were highest during the first year of participation, decreased during the second year, then were sustained at just over 3% during the remaining years.

The currently available data limit more in-depth analyses on savings trends, such as determining which SEM elements are most likely to lead to savings. Cadmus attempted to estimate savings for individual SEM elements and for combinations of SEM elements, but results were not significant or were not valid.

- **Recommendation:** NEEA could collect occupancy data and billing data from a representative control group.² These data could explain any changes in energy consumption that currently available data cannot explain, and they may support an in-depth analysis of savings trends. Additionally, NEEA could survey the control group about current SEM activities.

Tracking SEM adoption level trends in the market and within NEEA's initiatives will require a standard SEM definition. The definition of SEM has evolved since NEEA began the SEM Initiatives in 2007.

- **Recommendation:** NEEA should continue using the current CRE definition to measure SEM adoption trends in the market and within the CRE Initiatives. The recent SEM adoption research will provide a baseline for adoption trends.

NEEA's SEM Maturity Model describes SEM adoption progress beyond the minimum activities, but it may need to be simplified to make it easier to apply. It could be overly burdensome for evaluators (and program participants) to collect all needed data to distinguish adoption levels for each component. Additionally, some components may be more relevant for some market segments than others.

² NEEA and Cadmus are currently working with utilities in the region to collect billing data from a representative control group. In addition, NEEA is working with participants to collect occupancy data more frequently.

- **Recommendation:** NEEA could identify the most important components and criteria at each level by market segment. Streamlining criteria will support efficient measurement of SEM adoption progress. NEEA could work with Bonneville Power Administration (BPA) and the Energy Trust of Oregon to refine the model so a standard definition is in place by market segment in the Northwest.

1 Introduction

Through the CRE Initiative, offered since 2007, NEEA encourages the Northwest's commercial real estate market to adopt SEM practices to reduce energy use in this sector. SEM is a holistic approach to managing energy use that includes both efficient equipment and behavioral activities and requires engagement from building staff at all levels, from the executives to the building managers and building tenants. NEEA provides technical advice and training to CRE cohorts to ensure that building managers have the knowledge and tools needed to track and measure energy consumption. For the CRE Initiative, NEEA defines SEM as:

1. Adoption of a management-approved energy performance improvement goal at the firm, portfolio, and/or building level;
2. Documented planned activities to achieve the goal;
3. Allocation of resources (staff and training, capital, or both) toward the goal;
4. Implementation of planned activities;
5. Regular management review of progress achieved toward energy performance goal and effectiveness of SEM practices.

The NEEA CRE Initiative uses a variety of formats to promote SEM practices. These include:

- **The Market Partners Program (MPP).** NEEA engages leading Northwest commercial real estate firms to adopt SEM practices through an organizational coaching process, with the goal of making SEM an integral part of how this target market does business. Firms engage with the MPP for several years. NEEA describes this group as the MPP cohort.
- **Commercial office efficiency competitions.** Office competitions engage firms, managers, and operators of buildings in the target market to adopt components of SEM. These practices include operations and maintenance best practices, benchmarking, goal setting, energy management action planning, and reporting on results. Competitions, delivered in partnership with market allies such as Building Owners and Managers Association (BOMA), result in significant energy savings for the region. Past competitions included Portland's Office Energy Showdown, Carbon4Square and Seattle's Kilowatt Crackdown. The 2013 competitions were Kilowatt Crackdown in Boise and Portland. The competitions involve a one-year engagement. NEEA describes this group as the Office Competition (OC) cohort.
- **Industry education and training.** The initiative builds analytic skills and operating knowledge of the competitive advantage of energy efficiency through professional seminars and workshops delivered by market allies.
- **Additional marketing communications.** NEEA provides case studies, analytic tools, and templates that equip building owners and managers with the tools to achieve increased market value through energy efficiency.

Note that the MPP is primarily an organizational (firm) level adoption and the office competitions engage (with staff) at the individual office building level. Some MPP firms manage

buildings that participated in the office competitions, so there is some overlap between the two cohorts. In these cases, Cadmus included these buildings as part of the MPP cohort because the MPP engages with firms for a longer time; therefore, these buildings may better reflect savings and SEM adoption levels for the MPP cohort than the OC cohort.

1.1 Study Objectives

NEEA's three objectives for this study were to establish the presence of SEM adoption by the CRE cohorts, estimate 2013 savings, and determine the savings rate.

1.1.1 Establish the Presence of SEM Adoption by the CRE Cohorts

To establish the level of adoption of each CRE SEM element, Cadmus prepared a survey then asked MPP firm executives and building managers and OC building managers about their SEM practices. The team developed a scoring methodology to assign a level of SEM adoption (*no*, *some*, or *full* adoption) to each MPP firm and OC building.

1.1.2 Estimate 2013 Savings

To quantify the electricity and gas savings achieved by the MPP and OC cohorts during 2013, Cadmus collected billing data and weather data and incorporated these into regression models. Cadmus incorporated the SEM adoption level results from the survey in a separate analysis to estimate its energy savings.

1.1.3 Determine the Savings Rate for the MPP Cohorts

Finally, to quantify an annual savings rate for NEEA to use for planning purposes, Cadmus conducted a separate regression analysis to estimate savings by year of program participation, since 2010, for the MPP firms, and to calculate a percentage of change in the energy use per square foot, or energy use intensity (EUI), per year of participation.

2 Methodology

Cadmus estimated the overall electricity and gas savings achieved by the cohorts during 2013. The team surveyed the cohorts to determine their level of SEM adoption, then revisited the energy savings analysis and estimated energy savings by level of SEM adoption for the OC cohort and energy savings rates for the MPP firms.

2.1 Establish the Presence of SEM

Cadmus surveyed MPP executives and building managers to assess SEM activities at the firm level. The team also surveyed OC building managers regarding activities at a sample of individual buildings. The approach entailed these steps:

1. Review SEM progress documentation and estimate the SEM adoption level for each MPP firm and each OC building.
2. Design the surveys and scoring methodology.
3. Conduct the surveys.
4. Analyze the survey data to determine the percentage of CRE buildings within each SEM adoption level.
5. Compare the SEM adoption level estimates based on SEM progress documentation with the survey results.

2.1.1 Reviewing SEM Progress Documentation

NEEA provided Cadmus with SEM progress documentation for each MPP firm. To determine each firm's adoption progress, Cadmus reviewed all documentation but relied most heavily on the most recent MPP Quarterly Firm Report and a Microsoft PowerPoint presentation. Depending on the individual firm, the report was from the third or fourth quarter of 2013. These quarterly reports explicitly stated if a firm was engaged, committed, advancing, or sustaining in the MPP. The PowerPoint presentation detailed whether each firm had completed the following steps:

1. Set energy performance goal(s);
2. Allocate resources at both staff and budgetary levels;
3. Develop an implementation plan;
4. Report on energy performance goal(s) progress; and
5. Successfully integrate and document energy planning into the company operational procedures.

Cadmus matched the SEM adoption level score derived from the documentation with the way NEEA tracked the firm's progress in the documentation. A firm met the SEM requirements if it completed all five steps. A firm had *some* SEM adoption if it completed at least steps one and two. Note that how the MPP quarterly reports tracked SEM progress was not exactly the same as Cadmus' method for analyzing the survey data; however, both were based on the same underlying components of SEM and were similar enough that results can be compared.

NEEA provided Cadmus with SEM progress documentation for each OC building. Cadmus reviewed two specific items—a “project bank” document detailing operational, behavioral, and maintenance improvements implemented and the official OC master Microsoft Excel workbook, which also listed implemented improvement areas. NEEA updates the master workbook frequently, so Cadmus reviewed the two documents simultaneously.

Cadmus determined if the OC cohort buildings had completed the following:

1. Set energy performance goal(s);
2. Develop an implementation plan;
3. Allocate resources at a staff and budgetary level;
4. Implement recommended operational and maintenance improvements.

Information regarding regular reporting to management on progress toward goal(s) was not in the documentation for OC buildings.

Cadmus used the progress on steps one through four to define OC building adoption levels, as shown in Table 1.

Table 1. OC Adoption Classification Methodology Based on NEEA’s Documentation

Status	Adoption Score	Level of Adoption	Defining Criteria
N/A	1	No Adoption	-Non-active building
Engaged	2	Some Adoption	-Only steps one and two completed -Only projects implemented are verification checks (for instance, checking for Energy System Management or programmable thermostat system overrides)
Committed	3	Some Adoption	-Steps 1-3 completed
Advancing	4	Some Adoption	-Steps 1-3 completed -At least 1 project is implemented
Sustaining	5	Full Adoption	-Steps 1-3 completed -At least 1 project is implemented -Provides documentation on regular progress reporting to management

2.1.2 Designing the Surveys and Scoring Methodology

2.1.2.1 Designing the Surveys

Cadmus began this research using the survey instrument and scoring methodology from its CRE SEM market characterization study (Cadmus 2014), with plans to make minimal revisions to use these tools. However, it became clear through discussions with NEEA that SEM adoption could be more effectively measured by developing separate survey instruments for three groups—the MPP executives at the firm level, MPP building managers, and OC building managers—because NEEA delivers the MPP differently than the OC program. For MPP, SEM is implemented at the firm level, while for OC it is implemented at the building manager level.

For MPP, the team surveyed MPP firm executives and MPP building managers. Both were surveyed because there was a possibility that building managers were not aware of specific SEM

goals or directives guiding their work, yet they could still be managing energy use in conformance with SEM. For OC, the team measured SEM adoption at the building level and interviewed building managers.

Cadmus revised the survey instrument from its CRE SEM baseline study and added questions about activities demonstrating NEEA's CRE Initiative's SEM elements that were relevant for each respondent group. The MPP surveys captured high-level information about SEM activities from the firm-level contacts and about building-specific SEM activities from building managers. Additionally, NEEA requested that Cadmus ask cohorts about program delivery and value, NEEA's influence in their decision to adopt SEM, and any barriers and benefits to SEM adoption.³

The survey instruments for all three groups included questions on these topics:

- Understanding of SEM
- Energy performance goal adoption and communication
- Identification, implementation, and documentation of SEM activities
- Allocation of resources toward SEM activities
- Reviewing progress toward the energy performance goal
- Program participation outcomes
- CRE SEM program delivery and value
- NEEA's influence in the decision to adopt SEM
- Barriers and benefits to implementing SEM activities

The survey instruments are included as Appendices A, B, and C.

2.1.2.2 Designing the Scoring Based on the CRE SEM Definition

Cadmus designed a scoring methodology that mirrored the scoring methodology from the CRE SEM market characterization study (Cadmus 2014) so results could be compared. For each major element in NEEA's CRE SEM definition, the team included corresponding survey questions and responses to measure that element's implementation. Each element received a score of 20% if the firm or building met the requirements. If a firm or building met the requirements for all five major elements, it received a score of 100% and was classified as *full* SEM adoption. If a firm or building met the requirements for one to four elements, it received a score ranging from 20% to 80% and was classified as *some* SEM adoption. Firms or buildings that did not meet the requirements for any elements had *no* SEM adoption.

In addition to measuring the overall SEM adoption level, Cadmus scored firms' or buildings' progress with each element as *no*, *some*, or *full* adoption. Table 2 summarizes the scoring methodology. The detailed scoring methodologies for MPP and OC, including survey questions, are in Appendix G.

³ Cadmus submitted memos to NEEA with detailed survey findings on all topics, including program delivery and value, NEEA's influence in their decision to adopt SEM, and barriers and benefits to SEM adoption.

Table 2. CRE SEM Definition Scoring Methodology

SEM Element	Survey Question(s)	Level of SEM Implementation		
		Full	Some	None
Adoption of management-approved energy performance improvement goal at the firm, portfolio, and/or building level	What is your building's energy performance goal to reduce energy?	[GOAL]	[GOAL]	
	OC: When was this goal adopted and accepted by senior management?	OC: [GOAL ADOPTION DATE]	OC: All other responses	All other responses
	MPP: Has the goal been formally presented or accepted adopted by the organization?	MPP: Yes, presented and accepted	MPP: Yes, presented only; No, haven't been presented or accepted; OR Other	
Documentation of planned activities to achieve the goal	What actions/practices have you identified to help you reduce energy in this building in the next 6 months as a result of the Kilowatt Crackdown?	One or more action/practice mentioned	One or more action/practice mentioned	
	We are aware that MPP/OC helped you document your plans Does someone in your company also document energy management practices internally?	Yes, we document all the practices internally	NEEA documented all of the practices and shared their documentation with our company; OR Something else	All other responses
Allocation of resources (staff and training, or capital) towards the goal	I'm going to read a list of energy-related activities. Please tell me which ones you are aware that staff are engaged in, in this building?	Yes to at least one activity	N/A	All other responses
	Are you aware of any additional resources allocated for energy efficiency or energy management, other than what we've already discussed?			
Implementation of planned activities	OC: Your Project Bank action plan shows that you have planned or completed implementation of these practices or measures at [INSERT BUILDING NAME]. Were [PRACTICE1, PRACTICE2, AND PRACTICE3] implemented?	OC: Yes to at least one practice or resources allocated	N/A	No activities implemented during 2013
	MPP: Referred to NEEA's documentation	MPP: at least one activity implemented or resources allocated during 2013		
Regular reporting to management on progress towards goal(s) and effectiveness of SEM practices	Is progress toward your goal communicated to senior management on a regular basis?	Yes	Yes; OR Plan to in the future	All other responses
	How frequently are updates provided for management about the progress your building is making in reducing energy use?	Any regular interval	Any regular interval; OR Whenever they are needed (no set schedule)	All other responses
	Which of the following items do your management reviews include? Do they include ...	Yes on any	No on all	All other responses

2.1.2.3 Designing the Scoring Based on NEEA's SEM Maturity Model

NEEA requested that Cadmus develop a second scoring method based on its SEM Maturity Model, which contains 12 SEM components and lists the criteria for six levels of SEM adoption: 0 - unengaged, 1 - engaged, 2 - systemic, 3 - sustaining, 4 - integrated, and 5 - world class.^{4,5}

The SEM Maturity Model contains more detail and more activities than the CRE SEM definition. NEEA was designing the model concurrent to this study, but it was not available when Cadmus designed the survey instruments, which it based on the five major elements of the CRE SEM definition. Therefore, it was not always possible to distinguish between two adjacent adoption levels for a component. However, the study goal was to design an approach to measure SEM adoption, provide feedback on the usefulness of the model, and guide future studies. In the future, NEEA or NEEA's contractor can revise the survey to ask questions that are more directly based on the SEM Maturity Model criteria.

Cadmus assigned a score of 0 through 5 to each of the 12 components, depending on which level criteria the firm or building met. A firm or building that satisfied the Level 2 criteria or higher for all 12 components would meet the minimum requirements of SEM and was classified as *full* adoption. A firm or building has *some* adoption if it satisfied the Level 1 criteria or higher for at least six of the 12 components.

The detailed scoring methodology and results based on the SEM Maturity Model is in Appendix H.

2.1.3 Conducting the Surveys

NEEA provided Cadmus with contact information for representatives of buildings in the 2013 CRE cohorts. Table 3 shows the sample frame and survey disposition. The MPP cohort consisted of 89 buildings from 11 firms. The OC cohort consisted of 121 buildings, represented by 54 building managers.

Cadmus pre-tested the surveys with one or two contacts from each group, then reviewed the pre-tests and made minor survey revisions before continuing contacting the remainder of the CRE cohort representatives. The team made calls during May and June 2014.

For the MPP cohort, the Cadmus team completed 14 surveys, nine with firm-level respondents and five with building-level respondents. Three of the five building-level respondents who completed a survey represented firms that also completed firm-level surveys. The team called each of the unique contacts until the record was resolved or until the call had been attempted six

⁴ For additional information on the SEM Maturity Model, refer to the ACEEE Building Efficiency Summer Study Paper "Strategic Energy Management, It's Time to Grow Up!; A Maturity Model for SEM Implementation" (Leritz 2014)

⁵ The Consortium for Energy Efficiency's SEM Minimum Elements informed NEEA's SEM Maturity Model (CEE, 2014).

times. The team obtained firm-level responses from nine of the 11 firms, meeting 90% confidence with $\pm 6\%$ precision.

The Cadmus team also contacted every OC record with a unique contact name up to six times. Nineteen OC building managers completed the survey, meeting 90% confidence with $\pm 10\%$ precision. Table 3 shows the sample frame and survey disposition.

Table 3. Sample Frame for the 2013 CRE SEM Cohorts

Description	Market Partners Program		Office Competitions		
	Firms	Buildings	Overall	Boise	Portland/Vancouver
Population	11	89	121*	44	77
Unique contacts	11	11	54	13	41
Completed surveys	9	5**	19	4	15
Refusals	0	0	7	2	5
Wrong numbers	0	0	2	0	2
No longer participating	0	0	1	1	0
No longer managing property and could not provide referral	0	0	1	0	1
Not familiar with the Initiative and could not provide referral	0	0	1	0	1
Company no longer owned the buildings	0	1	0	0	0
No answer, answering machine, respondent not available	2	5	23	6	17

* 25 of these buildings were missing contact information.

** Three of the five building-level respondents represented the same firms as firm-level respondents.

2.1.4 Analyzing the Survey Results

Cadmus used the CRE SEM definition scoring methodologies in Appendix G to measure the SEM adoption level at each OC building and MPP firm as having *no*, *some*, or *full* adoption. If a firm or building met the criteria for all CRE Initiative SEM elements shown in Table 4, then it had *full* SEM adoption. If it met the criteria for one to four major elements, it had *some* SEM adoption. If it did not meet the criteria for any major elements, it had *no* SEM adoption.

Table 4. SEM Activities for Full Adoption

Element	Criteria
Adoption of a management-approved energy performance improvement goal	(1) The building has defined a measurable goal, and (2) The goal has been adopted by management
Documented planned activities to achieve the goal	A building representative was documenting the building's activities using its own document, without relying on NEEA's documentation
Allocation of resources	A building had dedicated staff and training or capital resources for energy-efficiency projects
Implementation of planned activities	At least one activity had been implemented during 2013
Regular management review of progress achieved toward energy performance goal and effectiveness of SEM practices	Staff report progress to management on a regular basis, and those reports included any of the following: (1) the effectiveness of each activity in improving energy performance, (2) whether the allocated resources were adequate, or (3) changes to energy performance goals

2.1.5 Comparing the SEM Adoption Level Estimates to Survey Results

After analyzing the survey data, Cadmus compared the results with the original estimates for the SEM adoption levels based on the SEM progress documentation provided by NEEA. If these estimates were similar to the survey data results, then the team was confident that the estimates for any buildings that were not surveyed were also accurate. The team used the SEM adoption levels from the documentation for estimating the energy savings by adoption level for OC cohort buildings that did not complete the survey.

2.2 Estimate 2013 Energy Savings

To estimate the 2013 savings for the CRE cohorts, the team used a billing analysis. This methodology is appropriate because the CRE Initiative affects a variety of end uses.

2.2.1 Overall Savings by Cohort

To determine electric and gas savings, Cadmus first prepared the data for analysis, then conducted a regression analysis of EUI to estimate energy savings per square foot of floor space. Finally, Cadmus used the regression savings estimates to calculate 2013 savings.

2.2.1.1 Preparing Data

NEEA provided Cadmus with billing data for 50 of the 89 MPP buildings and 118 of the 121 OC buildings. Ten buildings were in both programs, and Cadmus included them in the MPP energy-savings analysis.

To prepare the data, Cadmus first assessed the completeness of data available during 2012 and 2013 for each electric and gas meter for each building. The team determined that billing data was missing for some months in 2012 and 2013, and it worked with NEEA and its implementer to obtain the missing data where possible.

Cadmus reviewed the billing meter types to determine which meters to include in the analysis. Some buildings had separately metered photovoltaic (PV) systems that were not installed as part of the building's participation in NEEA's program, so Cadmus calculated the total building electricity use by adding the electricity produced by the PV system to the electric billing data. Some buildings separately metered the energy consumed for hot water or geothermal heating systems. Cadmus converted these data to therms, then added them to the gas billing data to calculate total gas consumption and capture any energy savings from these systems.

Next, Cadmus reviewed each building's energy consumption data for outliers or other suspect readings. The team then adjusted the billing periods to calendar months to have comparable data across buildings and for different meters of the same building.

Cadmus downloaded weather data corresponding to the location of each building. The team calculated base 65 heating degree days (HDDs) and cooling degree days (CDDs) for each calendar month, then merged the weather data with the electric and gas consumption data.

2.2.1.2 Estimating 2013 Energy Savings

The regression analysis for the 2013 energy savings included billing data from January 2012 through September 2013. Because of the timing of the analysis, billing data for October through December 2013 were not yet available.

Cadmus specified an EUI fixed-effects model to estimate MPP and OC savings. In a fixed-effects model, each building in each month is taken to have specific characteristics unique to that building, which are estimated separately from the other explanatory variables. In this way, any characteristics of a particular building (size, occupancy, insulation, etc.) are controlled for. The model is specified as follows:

$$\text{kWh}_{it} = \beta_1 \text{HDD}_{it} + \beta_2 \text{CDD}_{it} + \gamma \text{Post}(1)_{it} + \mu_{im} + \varepsilon_{it}$$

where:

kWh_{it}	=	Electricity use per square foot of floor space in building 'i' in month 't'
HDD_{it}	=	Heating degree days for building 'i' in month 't'
CDD_{it}	=	Cooling degree days for building 'i' in month 't'
γ	=	Electricity savings per square foot of floor space per month
$\text{Post}(1)_{it}$	=	An indicator for building 'i' that month 't' is in the program period
μ_{im}	=	Building month fixed effect, where $m=1, 2, \dots, 11, 12$. This is the energy use for building 'i' specific to a particular month after controlling for HDDs and CDDs. These unobservable effects are analogous to building fixed effects, except they are specific to a building and month instead of just to a building
ε_{it}	=	Random error term for building 'i' in month 't'

Note that for estimating gas savings, Cadmus used the same model specification but with the exclusion of CDDs because gas is not used for cooling and therefore not dependent on CDD. To estimate this model, Cadmus formed a 12-month difference by subtracting kWh per square foot from a month in 2012 from the kWh per square foot in that same month in 2013.⁶

The current EUI is:

$$\text{kWh}_{it} = \beta_1 \text{HDD}_{it} + \beta_2 \text{CDD}_{it} + \gamma \text{Post}(1)_{it} + \mu_{im} + \varepsilon_{it}$$

⁶ We excluded months in 2012 that did not have a matching month in 2013, or vice versa.

The EUI 12 months ago is:

$$kWh_{i(t-12)} = \beta_1 HDD_{i(t-12)} + \beta_2 CDD_{i(t-12)} + \gamma Post(1)_{i(t-12)} + \mu_{im} + \varepsilon_{i(t-12)}$$

The difference between the current energy use and that from 12 months ago is:

$$kWh_{it} - kWh_{i(t-12)} = (\beta_1 HDD_{it} + \beta_2 CDD_{it} + \gamma Post(1)_{it} + \mu_{im} + \varepsilon_{it}) - (\beta_1 HDD_{i(t-12)} + \beta_2 CDD_{i(t-12)} + \gamma Post(1)_{i(t-12)} + \mu_{im} + \varepsilon_{i(t-12)})$$

Expressing the differences using deltas (Δ) results in the following equation:

$$\Delta kWh_{it,t-12} = \beta_1 \Delta HDD_{it,t-12} + \beta_2 \Delta CDD_{it,t-12} + \gamma \Delta Post(1)_{it,t-12} + \Delta \varepsilon_{it,t-12}$$

Note that in the difference model, the building-month specific effects drop out. If the analysis sample is limited to 2012 and 2013, the $\Delta Post(1)_{it,t-12} = 1$ for all periods in 2013 and becomes the model intercept. The coefficient γ is the average savings per square foot per month.

Cadmus estimated the model by Ordinary Least Squares, and the standard errors are Huber-White robust standard errors clustered on buildings.

The advantage of estimating a difference model is that it controls for unobservable effects specific to a building and month (e.g., July consumption of building A is large every year for reasons that we cannot observe). The approach used in previous evaluations controls for building-specific effects (e.g., building B has a small average monthly consumption) separately from month-specific effects (e.g., all buildings tend to use more energy in December), but it does not control for monthly effects specific to buildings. The difference model should result in a more precise estimate of savings than a levels model with reduced bias.⁷

The regression model does not include occupancy data because such data are for one point in time rather than monthly. The fixed-effects model captures variation specific to each building and estimates a fixed (time independent) effect specific to the building. Including occupancy for a single point in time would be redundant, as the fixed-effects coefficient estimate captures the relative difference in occupancy between buildings. Data on occupancy that varied over time would be useful in the model if NEEA is able to collect that data in the future.

Cadmus used the model to estimate average monthly energy savings per square foot using January through September data. The team calculated the annual energy savings per square foot by multiplying the average monthly savings by 12 months. The team then calculated the total

⁷ Bias in the estimate of γ would arise in the levels (but not difference) model if $Post(1)_{it}$ and μ_{im} were correlated. The unavailability of energy use data for a building during certain months of the program period could generate such correlation and thus bias. For example, if energy use during months with the highest consumption was missing, the missing data would confound the savings estimate (the low average consumption during the program would reflect the unavailability of data for certain months, instead of reflecting savings) and would result in an estimate of γ that was biased downward (reflecting higher estimated savings than the true savings).

2013 savings for the buildings included in the analysis by multiplying the annual energy savings per square foot by the total square feet corresponding to those buildings.

2.2.2 Energy Savings by SEM Adoption Level

Cadmus developed a regression model to estimate the 2013 energy savings for the OC cohort for *no* adopters, *some* adopters, and *full* adopters of SEM and examined whether SEM adoption level influences energy savings. The OC methodology first required removing any buildings from the analysis that had neither documentation nor survey results on their SEM adoption level, leaving a sample of 74 buildings with electricity data and 54 with gas data. Cadmus employed a modified version of the difference model described in the previous section to determine the 2013 savings.

The model specification for the OC cohort's SEM adoption level was as follows:

$$\Delta kWh_{it,t-12} = \beta_1 \Delta HDD_{it,t-12} + \beta_2 \Delta CDD_{it,t-12} + \gamma_1 \Delta Post(1)_{it,t-12} * FullAdopt(1)_{it,t-12} + \gamma_2 \Delta Post(1)_{it,t-12} * PartAdopt(1)_{it,t-12} + \gamma_3 \Delta Post(1)_{it,t-12} * NoAdopt(1)_{it,t-12} + \Delta \varepsilon_{it,t-12}$$

In this model, the Post variable, which in the overall effects model provided the estimate for program effects, is interacted with three different indicator variables representing the SEM adoption level: FullAdopt, PartAdopt, and NoAdopt. The model estimates γ_1 , γ_2 , and γ_3 are the savings estimates in kWh per square foot per month in 2013 for *full* adopters, *some* adopters, and *no* adopters, respectively.

2.3 Estimate the Energy Savings Rate for the MPP Firms

For the MPP cohort, Cadmus estimated an energy savings rate during each year of participation in the MPP. The MPP methodology required several years of additional energy consumption data to estimate annual savings, necessitating the selection of a new baseline year. Ideally each firm's baseline would have been defined as the full year preceding the firm's introduction into the MPP; however, this could lead to unrepresentative baselines for firms that joined the MPP between 2007 and 2009, during the recession. Instead, Cadmus chose the baseline year of 2010 for all such firms, as well as for firms joining in January 2011, and estimated annual savings for 2011 through 2013. For firms that joined the MPP after January 2011, Cadmus used the year proceeding the firm's MPP start date as the baseline.

The addition of several years of data necessitated changes to the model specification. The overarching methodology remained the same as for the overall 2013 modeling, taking the difference between each month in the post period with the corresponding month in the baseline period:

$$\Delta kWh_{it,t-baseline} = \beta_1 \Delta HDD_{it,baseline} + \beta_2 \Delta CDD_{it,baseline} + \gamma_1 \Delta Post(1)_{it,baseline} * Y2011(1)_{it,baseline} + \gamma_2 \Delta Post(1)_{it,baseline} * Y2012(1)_{it,baseline} + \gamma_3 \Delta Post(1)_{it,baseline} * Y2013(1)_{it,baseline} + \Delta \varepsilon_{it,baseline}$$

Here, the Post variable interacts with indicator variables for each program year, Y2011, Y2012, and Y2013. Thus in this model the γ_1 , γ_2 , and γ_3 model estimates are the energy consumption-per-square-foot savings estimates for 2011, 2012, and 2013, respectively.

Cadmus used the regression analysis results to calculate an annual energy-savings rate for each year of participation. The units of the energy-savings rate are the percentage of change in EUI per year. The savings rate is the ratio of the energy savings per square foot to the assumed pre-program usage:

$$S_{it} = \frac{U_{it}}{U_{it} + Y_{it}}$$

Where:

S_{it} = The savings rate for a group 'i' in time 't'

U_{it} = The energy savings per square foot for a group 'i' in time 't'

Y_{it} = The energy usage per square foot for a group 'i' in time 't'

3 Findings

Cadmus surveyed the cohorts to determine their level of SEM adoption. The team also estimated the overall electricity and gas savings achieved by the cohorts during 2013. The team revisited the energy savings analysis after the surveys were completed and estimated energy savings by level of SEM adoption for the OC cohort and energy savings rates for the MPP firms.

3.1 Establish the Presence of SEM

Cadmus analyzed the survey data to establish the presence of SEM in the MPP and OC cohorts. The team compared the survey results to the documentation results; these findings are summarized below. Cadmus submitted memos to NEEA with detailed survey results, and these are included as Appendix I for the MPP results and as Appendix J for the OC results.

3.1.1 Overall Presence of SEM

3.1.1.1 MPP SEM Implementation

Table 5 shows each firm's overall SEM adoption level based on the documentation and survey results. The nine firm-level respondents met the requirements for four or more of the five major CRE SEM elements. Five of the nine firms met the requirements for *full* adoption, according to their survey responses.

The adoption level based on the survey responses differed from the adoption level based on the documentation for three of nine surveyed firms. Firm 6 graduated from the MPP before 2013, and it may have had outdated documentation.

Firm 1 and Firm 11 scored higher using the survey results than using the documentation. The Cadmus team conducted the survey in May through June 2014, but NEEA's team last updated the documentation in the fourth quarter of 2013; therefore, the survey results may reflect progress with SEM activities over the past six months (while the documentation does not).

Lastly, the differences between the SEM adoption level results for the two scoring methods could have resulted from using slightly different definitions of the SEM adoption level for each method. The definitions of the SEM adoption level for each method are in the Methodology section.

Table 5. Overall SEM Adoption Level by Firm from the Documentation and from the Survey

Firm	Year Began the MPP	SEM Adoption Level per Documentation Method	SEM Adoption Level per Survey Method*
Firm 1	2011	Some	Full
Firm 2	2009 (Graduated)	Full	No survey response
Firm 3	2012	Some	Some
Firm 4	2011	Full	Full
Firm 5	2011	Full	Full
Firm 6	2008 (Graduated)	Full	Some
Firm 7	2009	Some	Some
Firm 8	2008	Some	No survey response
Firm 9	2007 (Graduated)	Full	Full
Firm 10	2012	Some	Some
Firm 11	2011	Full	Some

*These are the results using the CRE SEM definition scoring method based on survey responses.

3.1.1.2 OC SEM Implementation

Table 6 compares the overall SEM adoption level based on the documentation to the overall SEM adoption level based on the survey results for the 19 surveyed buildings. According to the survey responses, two of the 19 buildings met the requirements for *full* SEM adoption, and the remaining 17 buildings met the criteria at least one of the five major elements for *some* SEM adoption.

The adoption level based on the survey responses differed from the adoption level based on the documentation for six of the 19 surveyed buildings. Two of these six buildings received a documentation score of *no* SEM adoption, as no project bank existed to track SEM progress. A third building also received a documentation score of *no* SEM adoption, because this building was previously listed as a non-active participant. The remaining three buildings received *full* SEM adoption survey scores but only a partial score from documentation. This is because element 5, regular reporting to management on progress toward goal(s), is not documented for OC buildings. During the surveys, representatives from these two buildings confirmed that element 5 activities do occur.

Table 6. Overall SEM Adoption Level Score from the Documentation and from the Survey

Documentation SEM Score	Survey SEM Score*			Total
	Full SEM	Some SEM	No SEM	
Full SEM	0	0	0	0
Some SEM	3	13	0	16
No SEM	0	3	0	3
Total	3	16	0	19

*These are the results using the CRE SEM definition scoring method based on survey responses.

3.1.2 Comparison of Cohort SEM Implementation with the Market Baseline

Table 7 compares the MPP and OC cohorts with the market baseline.

- Five of the nine surveyed MPP firms (56%) met the CRE SEM requirements for all five major elements (*full SEM*). The other four firms (44%) met the CRE SEM requirements for at least four of the five major elements (one or more element is considered *some SEM*).
- Three of the 19 surveyed OC buildings (16%) met the CRE SEM requirements for all five major elements (*full SEM*). The remaining 16 buildings met the SEM requirements for at least two of the five major elements (one or more element is considered *some SEM*).
- By comparison, the CRE market characterization found that 8% of the market met the SEM requirements for all five major elements, and another 73% met the requirements for at least one of the five major elements (Cadmus 2014). The market characterization study surveyed 40 commercial buildings and included 11 CRE cohort members.

Table 7. Market Baseline SEM Implementation Compared to OC and MPP SEM Implementation

Level of SEM Implementation	Market Baseline			Market Partners Program			Office Competitions		
	Number of Total Surveys (n=40)	Percentage of Total Surveys (n=40)	Absolute Precision*	Number of Surveyed Firms (n=9)	Percentage of Total (n=9)	Absolute Precision*	Number of Surveyed Buildings (n=19)	Percentage of Total (n=19)	Absolute Precision*
Full SEM (5 elements)	3	8%	7%	5	56%	13%	3	16%	12%
Some SEM	29	72%	12%	4	44%	13%	16	84%	12%
4 SEM elements	7	18%	10%	4	44%	13%	7	37%	15%
3 SEM elements	9	23%	11%	0	0%	N/A	8	42%	16%
2 SEM elements	10	25%	11%	0	0%	N/A	1	5%	7%
1 SEM element	3	8%	7%	0	0%	N/A	0	0%	N/A
No SEM (0 elements)	8	20%	10%	0	0%	N/A	0	0%	N/A
Total	40	100%		9	100%		19	100%	
* Based on 90% confidence level									
** Percentage may not total 100 because of rounding.									

3.1.3 Cohorts Intention to Fully Implement SEM

The Cadmus team asked MPP firm and OC building representatives if they intend to fully implement the CRE SEM elements. Table 8 shows that seven of the nine surveyed firms confirmed their intention. One firm-level respondent was not sure if the firm would fully implement SEM and stated capital resources as a barrier. Fourteen of the 19 OC building representatives also planned to fully implement SEM (one building representative does not plan to implement SEM and three did not know). One building representative was not asked this question because he or she said all elements were already fully implemented.

Table 8. Intention to Fully Implement SEM

Response	MPP Number of Responses (n=9)	OC Number of Responses (n=19)
Yes	7	14
No	0	1
Don't know	1	3
No response	1	0
Was not asked	0	1*
Total	9	19

* One respondent had already stated in the survey that all five elements were fully implemented in the participating building, so was not asked this question.

Source: Firm-level survey question C4 or OC survey question C4: *Do you intend to fully implement NEEA's five elements of Strategic Energy Management?*

Table 9 shows that two MPP firm-level respondents plan to fully implement SEM within the next year, four plan to fully implement SEM within one to two years, and one plans to fully implement SEM within two to five years. Three OC respondents planned to fully implement SEM within the next year, six planned to fully implement SEM within one to two years, and five planned to fully implement SEM within two to five years.

Table 9. Planned Timeline for Fully Implementing SEM

Response	MPP Number of Responses (n=9)	OC Number of Responses (n=14)*
Less than one year	2	3
One year to two years	4	6
Two years to five years	1	5
More than five years	0	0
Not applicable	2	0
Total	9	14

* This question was asked of OC respondents who said they plan to fully implement SEM (see Table 8).

Source: Firm-level survey question C5 and OC survey question C6: *When do you plan to have fully implemented Strategic Energy Management? Is it in less than one year, one to two years, two to five years, or more than five years?*

3.1.4 Implementation of Individual SEM Elements

Cadmus also analyzed the adoption of individual elements and results are in Table 10. All cohort members who responded to the survey met the requirements for the allocation of resources. In general, the MPP cohort members have progressed more with implementing SEM than the OC

cohort members. This is likely because the OC cohort members participate for only one year, while the MPP cohort members participate for up to five years and all have more than one year of experience with SEM.

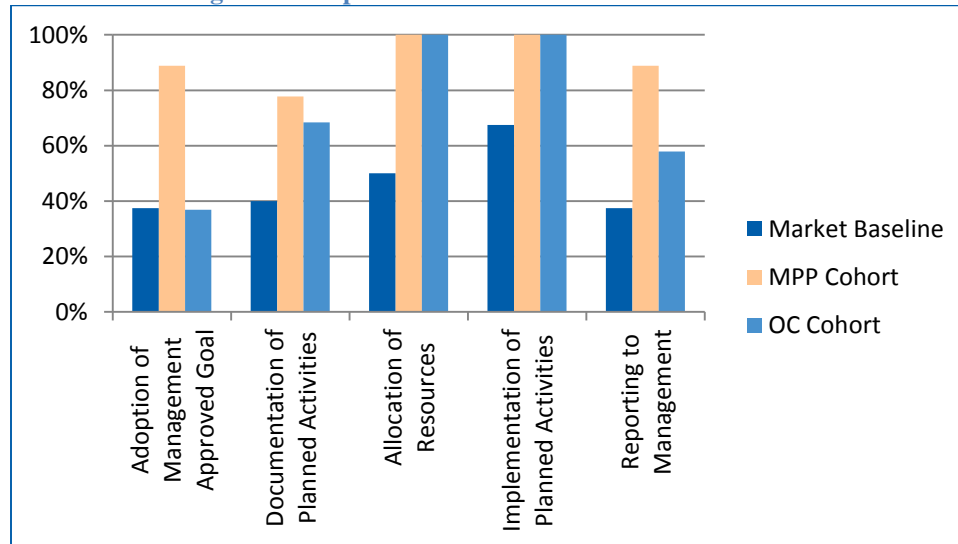
Table 10. Implementation of Individual SEM Elements

Element	MPP Number of Responses (n=9)			OC Number of Responses (n=19)		
	Full	Some	None	Full	Some	None
Adoption of Management Approved Goal	8	1	0	7	6	6
Documentation of Planned Activities	7	1	1	13	4	2
Allocation of Resources	9	0	0	19	0	0
Implementation of Planned Activities	9	0	0	19	0	0
Reporting to Management	8	0	1	11	2	6

Figure 1 shows the adoption of individual CRE SEM major elements for the market baseline, MPP cohort, and OC cohort. The MPP cohort had the highest adoption rate for all major SEM elements, which was likely because the MPP firms participate for several years and have therefore had substantial time to meet the criteria.

There was little difference between the market baseline and OC cohort for the adoption of a management-approved goal. However, the OC cohort scored higher than the market baseline in documenting planned activities, allocation of resources, implementation of planned activities, and reporting to management.

Figure 1. Adoption of Individual CRE SEM Elements

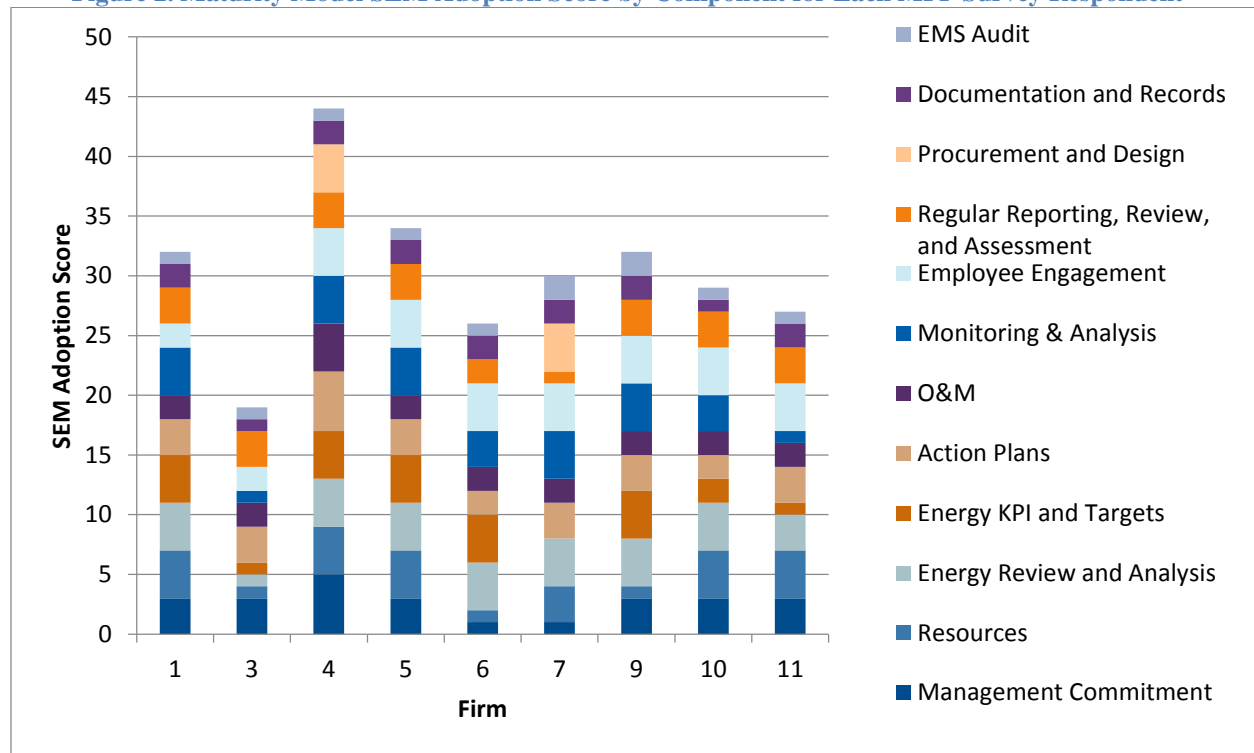


3.1.5 SEM Maturity Model Scoring Method Results

The scoring method based on the SEM Maturity Model required that a firm or building meet or exceed the Level 2 criteria for all 12 model components to meet the conditions for *full SEM* adoption. A firm or building had *some SEM* adoption if they met or exceeded the Level 1 criteria for at least six of the 12 model components.

Figure 2 shows the scores by component for each of the MPP firms with survey responses, and Figure 3 shows the scores by component for each of the OC buildings with survey responses.

Figure 2. Maturity Model SEM Adoption Score by Component for Each MPP Survey Respondent*



*Firms 2 and 8 did not respond to the survey.

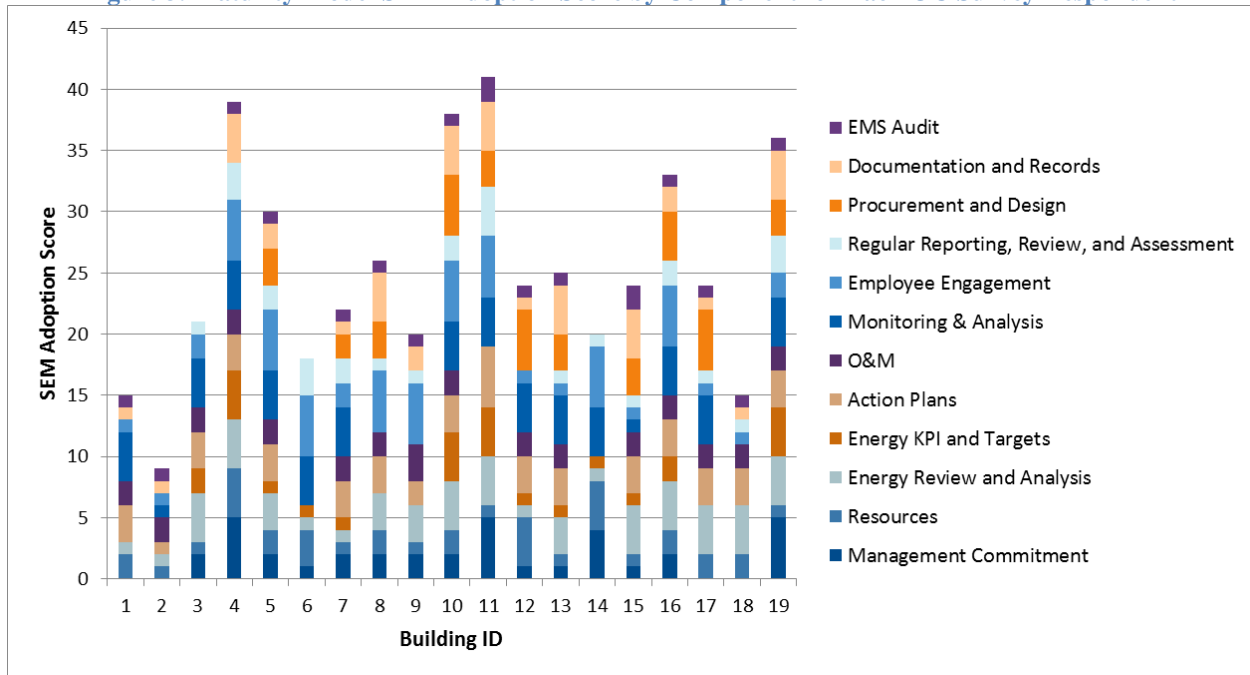
Figure 3. Maturity Model SEM Adoption Score by Component for Each OC Survey Respondent

Table 11 compares the adoption-level results from the CRE SEM definition to the SEM Maturity Model method for the MPP cohort, and Table 12 compares the results from the two methods for the OC cohort.

As shown in Table 11, no firms met the criteria for *full* adoption based on the Maturity Model method, but all firms met the criteria for *some* adoption. Detailed results for each component are in Appendix H.

Table 11. Overall SEM Adoption Level by Firm for the CRE SEM Definition Scoring Method and the SEM Maturity Model Method

Firm	Adoption Level per CRE SEM Definition Survey Method	Adoption Level per SEM Maturity Model Method
Firm 1	Full	Some
Firm 2	No survey response	No survey response
Firm 3	Some	Some
Firm 4	Full	Some
Firm 5	Full	Some
Firm 6	Some	Some
Firm 7	Some	Some
Firm 8	No survey response	No survey response
Firm 9	Full	Some
Firm 10	Some	Some
Firm 11	Full	Some

As shown in Table 12, no OC buildings met the criteria for *full* SEM adoption based on the Maturity Model method, but all buildings met the criteria for *some* SEM adoption. Detailed results for each component are in Appendix H.

Table 12. Overall SEM Adoption Level for the CRE SEM Definition Scoring Method and the SEM Maturity Model Method

Adoption Level per CRE SEM Definition Method	Adoption Level per SEM Maturity Model Method			
	Full	Some	None	Total
Full	0	3	0	3
Some	0	16	0	16
None	0	0	0	0
Total	0	19	0	19

NEEA recently developed the SEM Maturity Model, and program implementation does not yet directly align with the model's activities. In addition, Cadmus based the survey questions on NEEA's CRE SEM definition, which aligned with program implementation but which did not have the level of detail needed to assess some components. The SEM Maturity Model is very detailed, containing 12 SEM components and many criteria for each adoption level. It may not be practical to measure SEM adoption level according to this model through typical evaluation methods such as surveys or site visits because these methods would be overly burdensome to the respondent. In addition, some SEM components and criteria may be more relevant to some sectors than others. For example, the operations and maintenance component may apply differently for the industrial sector than the commercial sector.

Cohort members received the lowest scores for components that did not have sufficient corresponding survey questions to properly assess the extent of adoption. For example, the survey did not include many questions specifically about procurement and design activities, and seven of the nine MPP firms did not meet or exceed the Level 1 criteria for this component (and received a score of 0). As a second example, the survey also did not include many questions specifically about an energy management system audit, and 17 of the 19 OC buildings did not meet or exceed the Level 2 criteria for this component (and received a score of 0 or 1). However, these components without sufficient survey questions were probably not included or emphasized during program implementation.

3.1.6 NEEA's Influence in the Implementation of SEM Activities

Cadmus asked survey respondents about their energy management activities before they participated in NEEA's initiatives and results are in Table 13. MPP firm-level respondents described their activity before the program differently than building-level respondents. Seven of nine firm-level described their buildings activity level as *very active* or *somewhat active* before the program, but only one of five building-level respondents reported either of these activity levels. Firm-level respondents reported participation in utility incentive programs at a higher rate (six of nine) than building-level respondents (two of five). All nine firm-level respondents reported that they would have completed some projects without the program.

Before participating in Kilowatt Crackdown, 12 of 19 respondents described themselves as *very active* in managing energy in their buildings. Eight of 19 had participated in another utility-sponsored program(s) before participating in Kilowatt Crackdown. Without the Kilowatt Crackdown competition and assistance, seven of 19 would not have completed any of the projects implemented. This was especially true of respondents in Boise, where three of four respondents said they would not have implemented any projects without Kilowatt Crackdown.

Table 13. Activity and Implementation Profile

Question	Firm (n=9)	Building (n=5)	OC Buildings (n=19)
Energy management activity prior to participation			
Very active	1	1	12
Somewhat active	6	0	5
Not too active	1	1	1
Not active at all	1	2	0
Don't know	0	1	1
Participated in other utility sponsored programs	6	2	8
Projects implemented without NEEA's Initiative			
All	0	N/A	1
Most	0	N/A	4
Some	9	N/A	7
None	0	N/A	7

Source:

MPP Survey Questions J2, J3, and J4: *Before participating in this program, how active was your company in managing energy? Did your [company/building] participate in other utility-sponsored energy efficiency programs before participating in NEEA's Market Partners Program? How many of the projects implemented with the assistance of the BetterBricks team do you think would have been implemented in the absence of this competition?*

OC Survey Questions J3, J4, and J5: *Before participating in Kilowatt Crackdown, how active was this building in managing energy? Did your building participate in other utility-sponsored energy-efficiency programs before participating in Kilowatt Crackdown? How many of the projects implemented with the assistance of the Kilowatt Crackdown team do you think would have been implemented in the absence of this competition?*

3.1.7 Barriers to Implementing SEM Activities

Cadmus asked respondents to discuss challenges to adopting SEM (responses shown in Table 14). The most common challenge mentioned was budget limitations or high initial cost (five of nine firm-level MPP respondents, four of five MPP building-level respondents, and 10 of 19 OC respondents). Challenges unique to OC respondents included obtaining tenant participation and convincing the building owners to invest in energy efficiency activities.

Table 14. Challenges to Implementing SEM Activities

Challenges	MPP Firm (n=9)	MPP Building (n=5)	OC Building (n=19)
Budget limitations or high initial cost	5	4	10
Return on investment or long payback period	1	1	3
Lack of staff time	2	1	2
Lack of knowledgeable staff	2	0	1
Project timeframe too long	0	0	2
Tenant participation and/or perceptions of safety	0	0	2
Convincing the owners to spend money	0	0	1
Discipline in documenting and being consistent	0	0	1
The activities will not improve energy use in the building	0	0	1
No challenges	1	0	0

Notes: Results show responses to question K3 in the MPP firm-level, K3 in the MPP building-level survey, and K3 in the OC survey.

MPP Question K3: *What would you say are the challenges to adopting Strategic Energy Management?*

OC Question K3: *What would you say are the challenges to implementing the activities in the project bank?*

Responses exceed number of respondents because multiple responses were accepted.

The team asked respondents how NEEA could help their company overcome challenges. The most frequent answer from MPP respondents and OC respondents was more training and education (two of 14 MPP respondents, four of 19 OC respondents; Table 15).

Table 15. Ways to Help Companies Overcome Challenges to Adopting SEM

Ways to Overcome Challenges	MPP Firm (n=9)	MPP Building (n=5)	OC Building (n=19)
More training and education	2	0	4
Continue to be a conduit to connecting us with good companies to help the business with energy efficiency	1	0	0
Continue to publicize the need and the possibilities in SEM so our clients can recognize it	1	0	0
Help managers put together projects or proposals to present to or pitch to owners	1	0	0
Help facilitate unique rebates that we might not be aware of	0	1	0
Provide funding or rebates	0	1	4
Benchmarking	0	0	2
Provide audits	0	0	1
More manpower	0	0	1
Nothing/don't know	4	3	10

Notes: Results show responses to question K6 in the firm-level survey, question K5 in the building-level survey, and question K6 in the OC survey.

MPP Firm Question K6: *What could NEEA/BetterBricks do to help your company overcome challenges to adopting Strategic Energy Management practices?*

MPP Building Question K5: *What could NEEA do to help your company overcome challenges to adopting Strategic Energy Management goals and practices?*

OC Question K6: *What could NEEA, BOMA, your utility, or the city do to help your company overcome challenges to adopting Strategic Energy Management goals and practices?*

Responses exceed number of respondents because multiple responses were accepted.

3.1.8 Potential SEM Tools or Services

Cadmus asked respondents what tools or services NEEA could offer to motivate commercial real estate companies to adopt energy management activities. Respondents provided a variety of answers, and their most relevant suggestions were:

- Offer training on lighting, HVAC equipment, new technologies, and energy management best practices
- Provide guidance on how to compare projects and decide which to implement
- Offer strategies for presenting projects to building owners so that they understand the financial benefits
- Summarize energy consumption benchmarking data
- Present case studies from other companies that implemented SEM

The team also asked MPP respondents what tools or strategies could encourage more coordination between building owners or managers and building engineers or operators. Suggestions included creating cross-functional teams and facilitating communication. Both firm-level and building-level respondents asked for more training. Full results are in Appendices C and D.

3.2 2013 Energy Savings Results

The energy savings results for the OC and MPP cohorts are summarized below.

3.2.1 2013 Electricity Savings

Cadmus included 91 of the original 121 buildings in the OC analysis and 47 of the original 89 buildings in the MPP analysis. The OC buildings saved an average 0.023 kWh per square foot per month, resulting in 0.472 aMW of savings during 2013. This was equivalent to 1.84% of building consumption. The MPP buildings saved an average 0.050 kWh per square foot per month, resulting in 0.420 aMW of savings during 2013. This was equivalent to 3.79% of building consumption. Both results were significant at the 90% level. Table 16 shows the 2013 electric savings by cohort.

Table 16. Electric Savings in 2013

Cohort	Number and Square Feet of Buildings	Avg. Monthly Savings (kWh per square foot)	Total Savings (aMW)*	90% Confidence Interval Bounds (aMW)		Percentage Savings
				Lower	Upper	
Office Competition	91 14,991,580	0.023	0.472	0.024	0.921	1.84%
Market Partners Program	47 6,182,073	0.050	0.420	0.018	0.821	3.79%

* The total reported savings are *incremental* to 2013 (energy savings that may have occurred in previous years are not included) and *annualized* (Cadmus estimated the average monthly savings using up to nine months of data from 2013 in the model, then multiplied that total by 12 months to calculate an annual savings value).

Both cohorts show lower savings in 2013 than in 2012. The OC result in 2012 was 5.9% savings compared to 1.8% in 2013, and the MPP result in 2012 was 5.2% savings compared to 3.8% in 2013 (Itron, 2014). The difference in the results for both cohorts is most likely due to the absence of data for October, November, and December 2013. The results for both programs may change when these data are included in the model. These months have high energy use for heating, and therefore have high savings potential for buildings with electric heating that implemented HVAC measures or actions. Beginning with the 2014 program year, NEEA will adjust the savings validation period to run from October through September so that an entire year of post-program data can be included in the model to more accurately reflect savings for weather-sensitive activities.

Additionally, in 2013 NEEA invested more time up front helping the cohort building managers establish an implementation plan than it had in previous program years. Consequently, cohort buildings did not implement energy-efficiency projects until later in the year, so there may not have been enough months of data to capture energy savings from these projects. NEEA's documentation shows that despite the late start, the cohort building representatives plan to implement more energy-saving activities as a result of the 2013 program than in previous years; however, as shown in Figure 4 and Figure 5, the majority of these activities did not begin until late 2013 or are planned for 2014. (As previously noted, at the time of the analysis, the team did not have billing data for the fourth quarter of 2013; therefore, the results do not capture savings from activities conducted in late 2013 or in 2014).

Figure 4. Percentage of Activities Implemented Over Time in Portland Buildings

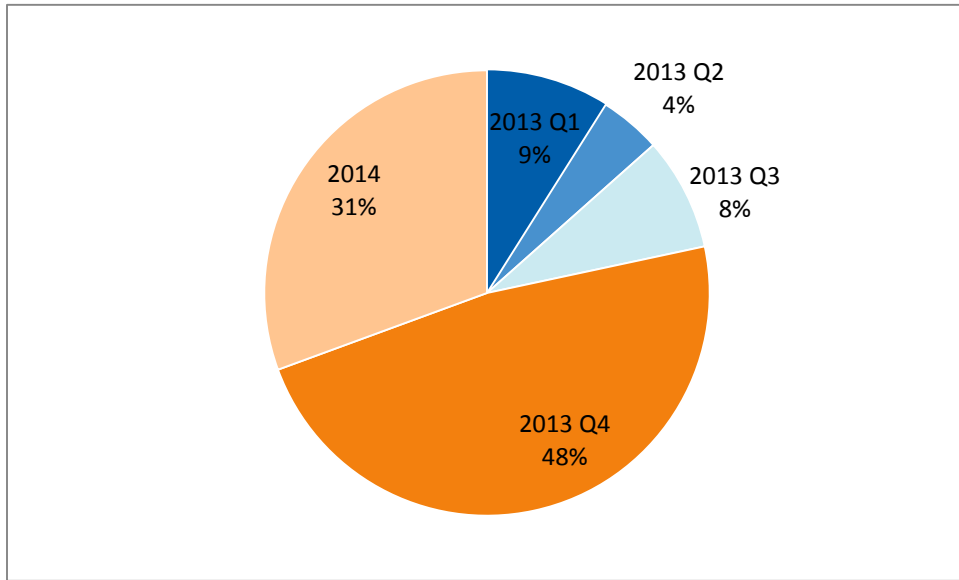
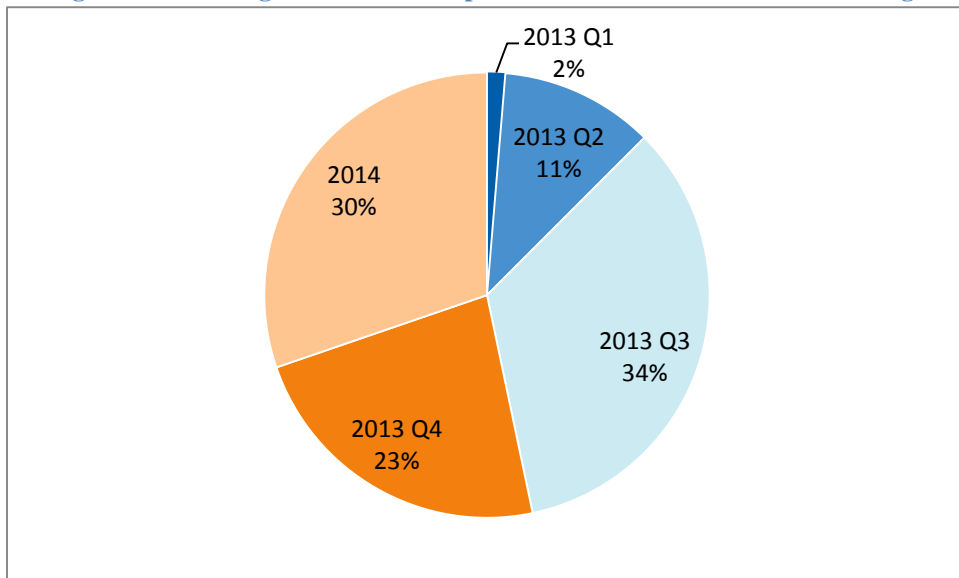


Figure 5. Percentage of Activities Implemented Over Time in Boise Buildings



Cadmus also analyzed 2013 electricity savings separately for OC buildings in Boise and in Portland/Vancouver. Table 17 shows the electric savings for the two cities. The savings for Portland/Vancouver buildings are positive (0.56 aMW) and statistically significant. The savings for Boise buildings were not statistically significant.

Table 17. Office Competition Electricity Savings in 2013 by City

City	Number of Buildings	Avg. Monthly Savings (kWh per sq. ft.)	Total Size (sq. ft.)	Total Savings (aMW)*	90% CI Lower Bound	90% CI Upper Bound	Percentage Savings
Portland	64	0.0322	12,786,087	0.56	0.10	1.03	2.5%
Boise	27	-0.0044	2,205,493	-0.01	-0.12	0.09	N/A

* The total reported savings are *incremental* to 2013 (energy savings that may have occurred in previous years are not included) and *annualized* (Cadmus estimated the average monthly savings using up to nine months of data from 2013 in the model, then multiplied by 12 months to calculate an annual savings value).

There are a few possible explanations for the Boise result. Cadmus first looked at the measure lists for Portland and Boise to determine if Portland building representatives had implemented more activities overall and if they implemented these activities earlier in 2013 than Boise buildings. As shown in Figure 4 and Figure 5 above, the implementation timing in Portland was not too different from Boise. The team also determined if Portland building representatives implemented a higher percentage of capital measures than operational measures from January through September compared to Boise building representatives, which would lead to immediate savings, but again there was not a large difference.

The next possible explanation is that the model could not detect energy savings due to the hotter summer in 2013 compared to 2012. Although the model accounts for weather, the CDDs during baseline (2012) summer months are lower than the CDDs during 2013 summer months, so the estimated coefficients for CDD and for the participation period may be confounded. It is possible the coefficient for CDD does not fully capture the increase in energy consumption due to increased cooling. This could make it appear that energy use increased in 2013 due to the program activities rather than due to weather.

A final possible explanation is that the Boise buildings experienced changes in occupancy during 2013 that resulted in an increase in energy consumption. This would happen if building occupancy increases or if a company with a higher EUI replaces a company with a lower EUI.

3.2.2 2013 Gas Savings Results

Table 18 shows the total gas savings and the average monthly savings per square foot for the MPP and OC cohorts in 2013. The MPP analysis included 65 buildings and the OC analysis included 27 buildings. Both cohorts had an average monthly savings of 0.001 therms per square foot. For OC, this resulted in 140,990 therms saved in 2013, or 7.53% of consumption. For MPP, this resulted in 44,334 therms saved in 2013, or 7.95% of consumption. The results are not significant at the 90% confidence level, but are significant at the 80% level.

The estimate of annual gas savings may be biased downward because gas use for October, November, and December 2013 was unavailable at the time of the analysis. The missing months have high gas usage for heating and high potential for savings.

Table 18. Gas Savings in 2013

Cohort	Number and Square Feet of Buildings	Avg. Monthly Savings (therms per sq. ft.)	Total Savings (therms)*	90% Confidence Interval Bounds		Percentage Savings
				Lower	Upper	
Office Competition	65 11,021,742	0.001	140,990	-29,147	311,127	7.53%
Market Partner Program	27 3,625,579	0.001	44,334	-9,478	98,145	7.95%

* The total reported savings are *incremental* to 2013 (energy savings that may have occurred in previous years are not included) and *annualized* (Cadmus estimated the average monthly savings using up to nine months of data from 2013 in the model, then multiplied that total by 12 months to calculate an annual savings value).

Cadmus also analyzed gas savings separately for OC buildings in Boise and Portland. The savings were not statistically significant.

3.3 OC Cohort Savings by SEM Adoption Level

Table 19 shows the OC cohort electricity savings in 2013 by SEM adoption level. The electricity savings results for all three adoption levels are not statistically different from zero at the 90% confidence level (all three confidence intervals contain zero). This is likely due to small sample sizes, lack of occupancy data, and/or the lack of a control group. This is especially apparent in the OC *no* SEM and *full* SEM adoption cohorts, where estimates relied on only one or three buildings, respectively.

Table 19. Office Competitions Electricity Savings in 2013 by SEM Adoption Level

SEM Adoption Level	Number and Square Feet of Buildings Used in Analysis	Avg. Monthly Savings (kWh per sq. ft.)	Total Savings (aMW)	90% Confidence Interval		Percentage Savings
				Lower Bound	Upper Bound	
No SEM	1 58,283	0.122	0.010	-0.004	0.024	6.71%
Some SEM	71 12,567,968	0.014	0.233	-0.178	0.644	1.34%
Full SEM	3 1,149,071	0.0396	0.0623	-0.038	0.163	5.01%

Table 20 shows the OC gas savings by SEM adoption level. The gas savings results for *some* SEM and *full* SEM adoption are not statistically different from zero at the 90% confidence level; however, the savings result for the one building with *no* SEM adoption is statistically different from zero. As with the electricity savings, this is likely due to small sample sizes, the lack of occupancy data, and/or the lack of a control group.

Table 20. Office Competitions Gas Savings in 2013 by SEM Adoption Level

SEM Adoption Level	Number and Square Feet of Buildings Used in Analysis	Avg. Monthly Savings (therms per sq. ft.)	Total Savings (therms)	90% Confidence Interval		Percentage Savings
				Lower Bound	Upper Bound	
No SEM	1 58,283	0.003	2,440	2,398	2,482	28.3%
Some SEM	52 9,294,777	0.001	112,686	-59,940	285,312	8.3%
Full SEM	2 722,958	-0.002	-19,336	-29,393	-9,279	-35.6%

Cadmus attempted other model specifications to determine if certain CRE SEM elements influenced energy savings more than others; however, these models did not produce valid results. For example, one model included an indicator variable signifying that a building had adopted the implementation element and another indicator variable signifying that the building adopted at least three of the other four CRE SEM elements. Results showed energy consumption increased if the building adopted the implementation element (which represented implementation of at least one capital or operational measure during 2013); however, this result was not statistically significant.

Other model specifications also produced statistically insignificant results and/or coefficients that the team deemed invalid, either because the magnitude was not feasible (i.e., savings were outside a plausible range) or the sign on the coefficient was incorrect (i.e., consumption increased in relation to the independent variable when it was expected to decrease or vice versa). It may be possible to conduct more in-depth analyses in the future if occupancy data and data from a control group are available to include in the model.

3.4 MPP Cohort Energy Savings Rates

Table 21 shows the average annual electricity savings rates as a percentage of consumption by the number of years in the MPP. Savings are incremental, representing only the savings that occurred during that year of participation (i.e., savings are not cumulative). Results show savings are highest during the first year of participation, decrease during the second year, and then sustain at just over 3% during the remaining years of participation.

Table 21. MPP Electricity Savings and Savings Rates by Length of Program Participation

Years in the MPP	Number and Square Feet of Buildings Used in Analysis	Avg. Monthly Savings (kWh per sq. ft.)	90% Confidence Interval		Percentage Savings
			Lower Bound	Upper Bound	
One Year	30	0.0634	-0.048	0.174	4.70%
	2,594,596				
Two Years	30	0.0040	-0.119	0.127	0.29%
	2,594,596				
Three Years	35	0.0471	-0.082	0.177	3.39%
	3,026,186				
Four or More Years	16	0.08003	-0.201	0.362	3.47%
	3,248,951				

Cadmus attempted to quantify gas savings and gas savings rates by year for 2011 through 2013 and the gas savings and savings rates by year of participation in the program; however these models did not produce valid results. Model results may improve if occupancy data or data from a control group are included.

4 Conclusions and Recommendations

Cadmus offers the following conclusions and recommendations based on the findings from the surveys, SEM adoption levels, and energy savings.

- **NEEA's CRE SEM initiatives have been successful in helping CRE cohorts adopt SEM, and the majority of cohort members intend to fully implement SEM.** The CRE cohort SEM adoption levels are higher than the market baseline and the SEM initiatives encouraged cohorts to implement more energy efficiency activities (only one respondent would have implemented all projects without the initiative). Additionally, seven of the nine MPP firms and fourteen of the 19 OC building representatives plan to fully implement SEM.
 - **Recommendation:** NEEA could continue providing resources to these MPP firm executives and building managers to help them fully implement SEM. NEEA can target the specific CRE SEM elements that each firm had not yet adopted or had partially adopted per the survey scoring results.
 - **Recommendation:** NEEA could assess SEM adoption levels annually to track MPP cohort progress.
- **Budget limitations and high initial costs are the largest barriers to implementing SEM projects.** Five of nine firm-level respondents, four of five building-level respondents, and 10 of 19 OC respondents said budget limitations or costs were the largest challenge to implementing SEM activities.
 - **Recommendation:** In addition to continuing to recommend rebate programs to the MPP firms, NEEA should consider partnering with a financial institution to offer zero or low interest loans for energy-efficiency projects.
- **NEEA can continue to facilitate SEM adoption by offering additional trainings and providing additional resources such as case studies and benchmarking data.** Respondents mentioned training about lighting, HVAC equipment, new technologies, and energy management best practices. They asked for guidance with deciding which projects to implement and strategies to present projects to building owners. Respondents also said benchmarking data and case studies would be useful.
- **NEEA can encourage coordination between building owners and operators by aiding facilities in creating energy teams.** MPP respondents stated that more coordination could be encouraged by creating cross-functional teams and facilitating communication.

- **NEEA cannot currently rely solely on the data collected by the program to assess SEM adoption levels according to the same criteria used for the market characterization study and for this evaluation.** For the OC cohort, documentation does not track the reporting-to-management element and smaller OC buildings do not have any documentation.
 - **Recommendation:** NEEA could consider developing a simpler tracking form for the smaller OC buildings that documents the activities supporting the criteria of the CRE SEM definition. Building managers could fill out this tracking form and submit it to NEEA at the end of the competition.
 - **Recommendation:** NEEA could consider collecting additional data so that it can measure and report SEM adoption over time according to the same criteria used for the market characterization study (Cadmus 2014) and this evaluation. NEEA could update its documentation protocols to specify the type of data the implementer should collect for each element and how often to update the data to measure SEM adoption on an annual (or even quarterly) basis.
- **NEEA's CRE SEM Initiative leads to electricity and gas savings.** The OC buildings saved 0.472 aMW during 2013. This was equivalent to 1.84% of building consumption. The MPP buildings saved 0.420 aMW during 2013. This was equivalent to 3.79% of building consumption. Both results were significant at the 90% level with 10% precision. Electricity savings rates for the MPP cohort were highest during the first year of participation, decreased during the second year, and then were sustained at just over 3% during the remaining years of participation.
- **The currently available data limit more in-depth analyses on savings trends, such as determining which SEM elements are most likely to lead to savings.** Cadmus attempted to estimate savings for individual SEM elements and for combinations of SEM elements, but the regression model results were not significant or were not valid.
 - **Recommendation:** NEEA could collect occupancy data and billing data from a representative control group.⁸ These data could explain any changes in energy consumption that currently available data cannot explain, and they may support an in-depth analysis of savings trends. Additionally, NEEA could survey the control group about current SEM activities. This may lead to a larger group of *no* adoption, which would give a higher probability of detecting a difference in savings between *no* and *some* adoption.
- **Tracking SEM adoption level trends in the market and within NEEA's initiatives will require a standard SEM definition.** The definition of SEM has evolved since NEEA began the CRE SEM Initiatives in 2007.

⁸ NEEA and Cadmus are currently working with utilities in the region to collect billing data from a representative control group. In addition, NEEA is working with participants to collect occupancy data more frequently.

- **Recommendation:** NEEA should continue using the current CRE definition to measure SEM adoption trends in the market and within the CRE Initiatives. The recent SEM adoption research will provide a baseline for assessing adoption trends.
- **NEEA's SEM Maturity Model describes SEM adoption progress beyond the minimum activities, but it may need to be simplified to make it easier to apply.** It could be overly burdensome for evaluators (and program participants) to collect all needed data to distinguish adoption levels for each component. Additionally, some components may be more relevant for some market segments than others.
 - **Recommendation:** NEEA could identify the most important components and criteria at each level by market segment. Stream-lining criteria will support efficient measurement of SEM adoption progress. NEEA could work with Bonneville Power Administration and the Energy Trust of Oregon to refine the model so a standard definition is in place by market segment in the Northwest.

5 References

Cadmus. *Market Characterization and Establishing the Market Baseline for the Commercial Real Estate Initiative* (Report No. E14-288). Portland, OR. Prepared for Northwest Energy Efficiency Alliance. June 12, 2014. Available online: <http://neea.org/docs/default-source/reports/market-characterization-and-establishing-the-market-baseline-for-the-commercial-real-estate-initiative.pdf?sfvrsn=5>.

Consortium for Energy Efficiency (CEE). *CEE Strategic Energy Management Minimum Elements*. Boston, MA. 2014. Available online: http://library.cee1.org/sites/default/files/library/11283/SEM_Minimum_Elements.pdf.

Itron. *Commercial Real Estate Program 2012 Impact Analysis – Add On Analysis*. Portland, OR. Prepared for Northwest Energy Efficiency Alliance. March 19, 2014. Available online: <http://neea.org/docs/default-source/reports/commercial-real-estate-initiative-2012-impact-analysis.pdf?sfvrsn=10>.

Leritz, Nick. *Strategic Energy Management, It's Time to Grow Up!; A Maturity Model for SEM Implementation*. ACEEE Building Efficiency Summer Study. 2014.

Appendix A. Office Competition Cohort Survey

Appendix A: Northwest Energy Efficiency Alliance CRE Strategic Energy Management Adoption-Level Survey KILOWATT CRACKDOWN

For Property Managers, Building Engineers, or Physical Managers

Audience: This survey is for building owners, property managers, building engineers, or physical managers of privately owned commercial office real estate buildings participating in NEEA's **Kilowatt Crackdown program.**

Researchable Question Topics	Questions	Info in NEEA Documentation
Respondent and company details	A1-A3, B1 - B3	
Understanding of the Kilowatt Crackdown and related energy management practices	C1 - C7	
Goal adoption	D1-D9	goal
Identification, implementation, and documentation of practices	E1-E6	SEM plan, list of measures implemented and date implemented
Allocation of resources	F1-F5	
Reviewing progress	G1-G4	updates provided to NEEA
Participation outcome	H1-H4	
Program delivery	I1-I5	
Motivation and assessing NEEA's Influence	J1 - J7	
Barriers and benefits	K1-K6	
Business goals and drivers	L1-L3	
Building characteristics	M1-M3	sq ft, space use, occupancy

NEEA describes SEM as having five elements: 1) adoption of energy performance improvement goals, 2) documentation of planned practices to reach the goals, 3) allocating staff and other resources such as training or capital, 4) implementing activities or practices toward the goals, and 5) reporting progress to senior management

SEM Elements	Survey Questions	In NEEA's Documentation?
1. Adoption of management-approved energy performance improvement goal(s)	C3a, D1-D9	
a. Documented	D6	x
b. Communicated internally or externally	D5,D7, D8, D9	
2. Documentation of planned activities to achieve the goal	C3b, E4-E6	
a. SEM Plan	H1, H2	x
3. Allocation of resources toward the goal	C3c, F3-F5, H3	
a. Staffing	F1, F2, F3	
b. Training	I3	
c. Capital	F3d, L2, L3	
d. Tools	I4	
4. Implementation of planned activities	C3d, E1	
a. Completed projects and dates completed	E1	x
5. Regular reporting to management on progress towards goal(s) and effectiveness of SEM practices	C3e, G1 - G4	
a. Regular updates to NEEA		x
b. Progress towards goals	G4, H1, H1a	x
c. Observed energy savings	H1	x
d. Regular review of and updates to progress and goals	G4, H4	

Interviewer instructions are in green.

CATI programming instructions are in red.

Answer options in parenthesis are not read

[Variables from sample]

[CONTACT NAME]

[TITLE]

[COMPANY]

[ADDRESS]

[BUILDING NAME]

[BOISE or PORTLAND/VANCOUVER]

[PRACTICE 1]

[PRACTICE 2]

[PRACTICE 3]

A. Introduction

- A1. May I speak with [CONTACT NAME]? [IF THAT PERSON IS NOT AT THIS PHONE NUMBER, ASK FOR THEIR PHONE NUMBER AND START AGAIN]
1. (Yes)
 98. (Don't know) [ASK TO SPEAK WITH SOMEONE WHO KNOWS AND BEGIN AGAIN]
 99. (Refused) [THANK AND TERMINATE]

- A2. Hello, I'm [INSERT NAME] calling from [INSERT COMPANY] on behalf of NEEA, the Northwest Energy Efficiency Alliance. We are conducting an important study with participants in the 2013 [BOISE or PORTLAND/VANCOUVER] Kilowatt Crackdown. Are you a member of the property team iwho has engaged in the Kilowatt Crackdown on behalf of [BUILDING NAME at ADDRESS]?
1. (Yes)
 2. (No, person is able to come to phone) [RECORD NAME AND REPEAT A2]
 3. (No, person is not able to come to phone) [GET NAME, PHONE NUMBER, AND SCHEDULE CALLBACK]
 98. (Don't know) [ASK FOR PERSON WHO IS AND START AGAIN]
 99. (Refused) [THANK AND TERMINATE]

[READ IF NEEDED]

Kilowatt Crackdown office competitions encourage buildings to adopt energy management best practices. The program provides guidance and tools to property teams to assist in reaching their energy reduction goals.

- A3. Are you familiar with the energy management practices implemented as part of the Kilowatt Crackdown at [BUILDING NAME]?
1. Yes
 2. No [ASK TO SPEAK WITH CORRECT PERSON AND BEGIN AGAIN WITH A2]
 98. (Don't know) [THANK AND TERMINATE]
 99. (Refused) [THANK AND TERMINATE]

IF THEY STILL SAY THEY DID NOT PARTICIPATE OR DON'T KNOW, ASK IF THERE IS SOMEONE ELSE IN THE COMPANY WHO MAY HAVE MORE INFORMATION AND IF NOT, THANK AND TERMINATE.

****THIS SHOULD HAPPEN VERY INFREQUENTLY SO PLEASE KEEP TRACK OF THIS AND REPORT TO US IMMEDIATELY ANYTIME A COMPANY DISQUALIFIES AT THIS QUESTION.**

- A4. Because we value your time, we would like to offer you a \$25 gift card for completing this survey. Before we get started, I'd like you to know that we will keep your responses anonymous. They will be aggregated with other people's responses in our report. Your responses will not be linked to you or your company, so please feel free to speak as candidly as you like.

Back-up information, not to be programmed:

[If "No – Not a convenient time," ask if Respondent would like to arrange a more convenient time for us to call them back or if you can leave a message for that person.]

[IF RESPONDENT ASKS HOW LONG, SAY: "APPROXIMATELY 25 MINUTES."]

[IF NEEDED:] This survey is for research purposes only. This is not a marketing call. This is the primary way for NEEA to gather information about the commercial real estate initiative. Your participation in this study is important so that NEEA can include your perspectives in how their energy efficiency initiatives are offered.

B. Screeners

- B1. How long have you been with [COMPANY]? [READ LIST IF NEEDED]
1. Less than 1 year
 2. 1 to less than 3 years
 3. 3 to less than 5 years
 4. More than 5 years
 98. (Don't know)
 99. (Refused)
- B2. Is your title [TITLE]?
1. (Yes)
 2. (No) [SPECIFY]
- B3. How long have you had the role of [TITLE]? [READ LIST IF NEEDED]
1. Less than 1 year
 2. 1 to less than 3 years
 3. 3 to less than 5 years
 4. More than 5 years
 98. (Don't know)
 99. (Refused)

- B4. How do your job duties relate to energy use at this building? [ENTER ALL THAT APPLY]
1. [RECORD ANSWER]
 2. (Energy manager or Energy Champion)

C. Understanding of Kilowatt Crackdown Objectives and Current Energy Management Practices

- C1. Now I would like to talk about energy management best practices. Could you please describe the key elements of energy management your company learned through participation in Kilowatt Crackdown competition? [RECORD EACH ELEMENT MENTIONED]
1. (Identifying energy performance improvement goals)
 2. (Planning practices or activities to reach the goals)
 3. (Allocating staff resources)
 4. (Implementing activities or practices toward reaching the goals)
 5. (Reporting progress to senior management)
 6. (Other) [SPECIFY]
 7. (I don't know what energy management is) [GO TO NEW SCREEN AND READ STATEMENT BELOW AND THEN GO TO C2]
 98. (Don't know) [GO TO NEW SCREEN AND READ STATEMENT BELOW AND THEN GO TO C2]
 99. (Refused) [GO TO NEW SCREEN AND READ STATEMENT BELOW AND THEN GO TO C2]

[IF DON'T KNOW, SAY, "NEEA describes strategic energy management as having five elements: 1) adoption of energy performance improvement goals, 2) documentation of planned practices to reach the goals, 3) allocating staff and other resources such as training or capital, 4) implementing activities or practices toward the goals, and 5) reporting progress to senior management"]

[IF MISSING ANY OF THE FIVE ELEMENTS IN THEIR DESCRIPTION ABOVE, REMIND THEM OF THE OTHERS, THEN ASK C2]

[ASK C1A FOR EACH STATEMENT 1-5 NOT IDENTIFIED IN C1]

C1a. Along with the elements you have mentioned, NEEA's definition of SEM also includes [INSERT MISSING responses 1-5 FROM C1 and then ASK C2]

C2. NEEA calls the combination of these five elements of energy management best practices *strategic energy management*. Have you heard the term strategic energy management before?

1. (Yes)

C2a. Where did you hear of it?

1. [RECORD RESPONSE]

98. (Don't know)

99. (Refused)

2. (No)

98. (Don't know)

99. (Refused)

C3. To what extent is each of the energy management elements in place at your company? Is the [INSERT STATEMENT] fully in place, mostly in place, partly in place, or not in place?
[FULLY IN PLACE=1, MOSTLY IN PLACE=2, PARTLY IN PLACE=3, NOT IN PLACE=4, DON'T KNOW=98, AND REFUSED=99]

C3a. Identification and adoption of energy performance improvement goals

C3b. Documentation of planned activities to reach the goals

C3c. Allocation of staff resources and training or capital resources

C3d. Ongoing implementation of activities or practices toward reaching the goals

C3e. Reporting of progress to senior management

[ASK IF ANY OF C2a through C2e ARE NOT = 1 FULLY COMPLETED]

C4. Do you intend to fully implement the elements of energy management that you learned through the Kilowatt Crackdown?

1. (Yes) [SKIP TO C5]

2. (No)

C4a. What elements will not be implemented?

1. (Adoption of energy performance improvement goals)

2. (Documentation of planned activities to reach the goals)

3. (Allocating staff resources and training or capital resources)

4. (Implementing activities or practices toward reaching the goals)

5. (Reporting progress to senior management)

6. (Don't know)

98. (Don't know)

99. (Refused)

[ASK IF C4=2, 98, OR 99]

- C5. What is preventing you from fully implementing the energy management practices at this building?
1. [RECORD RESPONSE]
 98. (Don't know)
 99. (Refused)

[IF C4 =1]

- C6. When do you plan to have fully implemented Strategic Energy Management? Is it in...[READ RESPONSES]
1. Less than one year
 2. One to two years
 3. Two to five years
 4. More than five years
 98. (Don't know)
 99. (Refused)
- C7. Are you aware of energy management or energy efficiency activities happening at other commercial office buildings in your company?
1. (Yes)
 2. (No)
 3. (No, do not have other buildings)
 98. (Don't know)
 99. (Refused)

D. Goal Adoption

Now I'd like to talk more specifically about your energy management goals.

- D1. What is your building's energy performance improvement goal to reduce energy use that was set through your participation in Kilowatt Crackdown? [READ IF NEEDED: This goal(s) may be expressed as a percentage or an absolute number in units of energy use intensity (EUI). The goal(s) must be stated as a comparison to a defined baseline. It could also be defined through adoption of other systems such as LEED or ENERGY STAR.]
1. [RECORD GOAL:_____]
 2. (We don't have a goal) [SKIP TO E1]
 98. (Don't know) [SKIP TO E1]
 99. (Refused) [SKIP TO E1]

D2. When was this goal adopted and accepted by senior management? [IF NEEDED: We are looking for the month and year. The exact day isn't necessary.] [IF THEY DON'T KNOW THE MONTH AT LEAST RECORD THE YEAR]

1. [RECORD GOAL ADOPTION DATE (MONTH/YEAR):_____]
2. (Has not been accepted by senior management)
98. (Don't know)
99. (Refused)

D3. Have you set or adopted any other energy related goals because of your participation in Kilowatt Crackdown? Goals can be expressed as a percentage reduction or an absolute number compared to existing energy use. They can be expressed as an energy intensity reduction or through adoption of other systems such as LEED or ENERGY STAR.

[RECORD ALL THAT APPLY]

1. (Percentage reduction in energy use [SPECIFY:_____])
2. (Absolute number reduction in energy used [SPECIFY:_____])
3. (Energy intensity reduction [SPECIFY:_____])
4. (LEED)
5. (ENERGY STAR®)
6. (Sustainability goals [SPECIFY:_____])
7. (Other 1 [SPECIFY:_____])
8. (Other 2 [SPECIFY:_____])
9. (Other 3 [SPECIFY:_____])
10. (Other 4 [SPECIFY:_____])
11. (Other 5 [SPECIFY:_____])
98. (Don't know)
99. (Refused)

[ASK IF D3=1-11 FOR EACH GOAL]

D4. What year did you set the goal [INSERT FOR EACH GOAL FROM D3]?

1. 2010
2. 2011
3. 2012
4. 2013
5. 2014
98. (Don't know)
99. (Refused)

[REPEAT AND ASK ABOUT EACH GOAL MENTIONED IN D1 AND D3]

D5. Has the goal [INSERT EACH GOAL FROM D1 AND D3] been formally presented and accepted by senior management? [DO NOT READ LIST]

1. (Yes, presented and accepted)
2. (Yes, presented only)
3. (No, haven't been presented or accepted)
4. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

D6. How were the goals documented for this building?

1. [RECORD ANSWER]
2. (Company didn't document; only NEEA documented the goals)
98. (Don't know)
99. (Refused)

[ASK D7 AND D8 ABOUT EACH GOAL MENTIONED IN D1 AND D3]

D7. Was the goal [INSERT EACH GOAL ONE AT A TIME FROM D1 AND D3] communicated to internal staff?

1. (Yes)
2. (No)
3. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

[ASK D8 ABOUT EACH GOAL IF D7= YES]

D8. I'm going to read a short list of ways the goal could be communicated to internal staff. Please tell me which ways the goal [INSERT EACH GOAL ONE AT A TIME FROM D1 AND D3] was communicated. Was it by: [READ LIST; RECORD ALL THAT APPLY]

1. Email
2. Website
3. Mailing
4. Company meeting or presentation
5. Open house presentation
6. Budget report
7. Other [SPECIFY: _____]
98. (Don't know)
99. (Refused)

D9. Has your firm communicated externally to investors, owners, tenants and others about your energy-related goals or accomplishments?

1. (Yes)
2. (No)
98. (Don't know)
99. (Refused)

E. Identification, Implementation, and Documentation of Practices

Now I would like to talk about actions and practices that you or your organization have planned for reducing energy in this building, your portfolio, or your organization.

[SKIP IF NO PRACTICES]

E1. Your Project Bank action plan shows that you have planned or completed implementation of these practices or measures at [INSERT BUILDING NAME]. Were [INSERT PRACTICE1, PRACTICE2, AND PRACTICE3] implemented? [RECORD ALL THAT APPLY]

1. (Yes, all correct)
2. (No) [SELECT ONES THAT WERE INCORRECT BELOW AND CORRECT THEM]
 - E1a. (Practice 1 incorrect [RECORD CORRECT PRACTICE:_____])
 - E1b. (Practice 2 is incorrect [RECORD CORRECT PRACTICE:_____])
 - E1c. (Practice 3 is incorrect [RECORD CORRECT PRACTICE:_____])
98. (Don't know)
99. (Refused)

- E2. What practices have you identified to help you reduce energy in this building in the next 6 months as a result of the Kilowatt Crackdown? These practices could include all things energy related such as capital purchases, capital improvements, operations and maintenance changes, training, certifications, other behavioral change efforts , and/or third-party service provider proposals/projects. **[DO NOT READ LIST]**
1. (None)
 2. (Efficient equipment)
 3. (Maintenance changes)
 4. (Trainings and certifications)
 5. (Energy tracking tools)
 6. (Installed or improved heating or cooling controls)
 7. (Other heating or cooling changes **[SPECIFY:_____]**)
 8. (Changed lighting timing; installed occupancy sensors)
 9. (Installed LED parking lot lights)
 10. (Other lighting projects **[SPECIFY:_____]**)
 11. (Other 1 **[SPECIFY 1:_____]**)
 12. (Other 2 **[SPECIFY 2:_____]**)
 13. (Other 3 **[SPECIFY 3:_____]**)
 14. (Other 4 **[SPECIFY 3:_____]**)
 15. (Other 5 **[SPECIFY 3:_____]**)
 98. (Don't know)
 99. (Refused)
- E3. Has your firm taken action to conduct outreach and education or challenge tenants to improve energy performance?
1. (Yes)
 2. (No)
 98. (Don't know)
 99. (Refused)
- E4. We are aware that your Kilowatt Crackdown coach helped you document your plans through the Project Bank action plan. Does someone in your building also document energy management practices internally? **[RECORD ALL THAT APPLY]**
1. (Yes, we document all the practices internally)
 2. (NEEA documented all the practices and shared their documentation with our company)
 3. (Something else **[SPECIFY:_____]**)
 98. (Don't know)
 99. (Refused)

E5. Will you document practices and actions using the Project Bank action plan after Kilowatt Crackdown has ended?

1. (Yes)
2. (No)
98. (Don't Know)
99. (Refused)

[ASK IF E4= 1]

E6. Which of the following have you or your organization documented for your energy reduction practices? Let's start with ... [INSERT FIRST ITEM]. Has this been documented for all, most, some, or none of your energy reduction practices? [READ LIST AND RECORD 1=all, 2=most, 3=some, 4=none; 96 FOR N/A, 98 FOR DON'T KNOW, 99 FOR REFUSED] [RANDOMIZE LIST]

- E6a. A description of the energy reduction activity
- E6b. The staffing resources that your organization will need to conduct the practice; staffing resources include anyone who will be planning or implementing the practice
- E6c. The training resources that your organization will need to support the practice
- E6d. The capital resources that your organization will need
- E6e. The timeframe for completion
- E6f. The expected impacts and/or benefits of the practice

F. Allocation of Resources

Now we will talk about how your organization has allocated resources for reducing energy.

[DO NOT ASK F1 IF THE RESPONDENT SAID THEY ARE THE ENERGY MANAGER OR ENERGY CHAMPION IN B3]

F1. Is someone at your building a designated "energy manager" or "energy champion"?

1. (Yes)
2. (No)
98. (Don't know)
99. (Refused)

F2. Do you have an energy team that meets regularly?

1. (Yes)
2. (No)
98. (Don't know)
99. (Refused)

F3. I'm going to read a list of energy-related activities. Please tell me which ones you are aware that staff are engaged in, in this building? [READ EACH AND RECORD 1 FOR YES, 2 FOR NO; 96 FOR N/A, 98 FOR DON'T KNOW, 99 FOR REFUSED] [RANDOMIZE LIST]

- F3a. Updating the Portfolio Manager account with monthly energy use (benchmarking)
- F3b. Identifying opportunities to improve operations
- F3c. Conducting nightwalks
- F3d. Budgeting for capital improvements in the building
- F3e. Engaging tenants in ways to save energy
- F3f. Pursuing ENERGY STAR Certification
- F3g. Measuring energy savings
- F3h. Reporting on energy savings

F4. Are you aware of whether there are any additional resources allocated for energy efficiency or energy management, other than what we've already discussed?

- 1. (Yes, our company allocates additional resources) [ASK F4a]
 - F4a. Please describe the additional resources allocated for energy efficiency. [RECORD ANSWER]
- 2. (No)
- 98. (Don't know)
- 99. (Refused)

[ASK IF (F1 <> YES AND F2 <> YES) AND (ANY IN F3 <> YES) AND F4 <> YES]

F5. What are the reasons your company hasn't allocated resources for energy reduction at this building?

- 1. [RECORD ANSWER]
- 98. (Don't know)
- 99. (Refused)

G. Reviewing Progress

Now we're going to talk about the reviewing progress towards your energy reduction goal.

G1. Is progress toward your goal communicated to senior management on a regular basis?

- 1. (Yes)
- 2. (No) [SKIP TO NEXT SECTION]
- 3. (Plan to in the future) [SKIP TO NEXT SECTION]
- 98. (Don't know) [SKIP TO NEXT SECTION]
- 99. (Refused) [SKIP TO NEXT SECTION]

G2. How frequently are updates provided for management about the progress your building is making in reducing energy use? **[READ LIST IF NECESSARY]**

1. (Daily)
2. (Weekly)
3. (Monthly)
4. (Quarterly)
5. (Twice a year)
6. (Annually)
7. (Never provide updates)
8. (Whenever they are needed; no set schedule or timeline)
9. (Other **[SPECIFY:_____]**)
98. (Don't know)
99. (Refused)

[SKIP IF G2=7, 98, 99]

G3. How are these updates shared with the building management team? **[READ LIST AS NEEDED; RECORD ALL THAT APPLY]**

1. (Email)
2. (Website)
3. (Mailing)
4. (Company meeting, presentation)
5. (Open house presentation)
6. (Budget report)
7. (Other **[SPECIFY:_____]**)
98. (Don't know)
99. (Refused)

[SKIP IF G2=7, 98, 99]

G4. Which of the following items do the updates for management include? Do they include ...

[READ LIST AND RECORD 1 FOR YES, 2 FOR NO, 97 FOR N/A, 98 FOR DON'T KNOW AND 99 FOR REFUSED] [RANDOMIZE LIST]

- G4a. An update about actual performance measured against the goal
- G4b. The effectiveness of each activity on reducing energy
- G4c. Whether the staffing, training, or capital resources allocated were sufficient to perform the practice or reach the energy reduction goals for the building
- G4d. Changes to goals or metrics
- G4e. Progress updates on implementation of previously approved energy projects
- G4f. Presentation of proposed projects and their potential benefits, for approval by management

H. Participation Outcome

H1. Now I'd like to talk about current outcomes of your energy efficiency action plan. Has your building reduced its energy consumption as much as expected?

- 1. (Yes)
- 2. (No) [ASK H1a]

H1a. Are you on track to meet your energy performance goals?

- 1. (Yes)
- 2. (No)
- 98. (Don't know)
- 99. (Refused)
- 98. (Don't know)
- 99. (Refused)

H2. How helpful do you think the planned practices identified through the Kilowatt Crackdown have been in helping you reduce energy usage? Have they been ... [READ LIST]

- 1. Very helpful
- 2. Somewhat helpful
- 3. Not too helpful
- 4. Not helpful at all
- 98. (Don't know)
- 99. (Refused)

- H3. Did you have enough staffing, training, and capital resources to reduce energy use as much as you intended during your participation in Kilowatt Crackdown?
1. (Yes)
 2. (No)
- H3a. Please explain which resources were less available than planned. [If needed, staffing, training, capital resources, any other?]
98. (Don't know)
99. (Refused)
- H4. Do you revisit your plan to reduce energy use on a regular basis, or update it when changes are needed? [Multiple response]
1. (Regular basis)
 2. (Update as needed)
98. (Don't know)
99. (Refused)

I. Program Delivery

- I1. I'm going to ask some questions about the value of different program components in helping you reduce energy use. Thinking about your overall experience with program support in...[INSERT EACH STATEMENT], would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable? [SCALE 1=Very valuable, 2=somewhat valuable, 3=not too valuable, 4=not at all valuable, 98=Don't know, 99=Refused; 96=N/A ROTATE a-g] [REPEAT SCALE AS NEEDED]
- I1a. Assistance with Portfolio Manager account
 - I1b. Assistance with benchmarking
 - I1c. Technical scoping walkthrough
 - I1d. Developing an action plan
 - I1e. Setting an energy performance goal
 - I1f. Engineering coaching
 - I1g. Documenting energy-related activities taken
 - I1h. Communicating goals and accomplishments with owners or external stakeholders

[ASK FOR EACH IN I1 THAT WERE 3 OR 4]

I2. Can you tell me the reasons you said that the competition's assistance with [INSERT ANSWERS FROM I1 THAT WERE 3 or 4] were not very valuable?

1. [RECORD ANSWER 1]
2. [RECORD ANSWER 2]
3. [RECORD ANSWER 3]
4. [RECORD ANSWER 4]
5. [RECORD ANSWER 5]
6. [RECORD ANSWER 6]
7. [RECORD ANSWER 7]
8. [RECORD ANSWER 8]

98. (Don't know)

99. (Refused)

I3. Have you attended other professional seminars and workshops on energy management offered by different organizations that you found helpful?

1. (Yes)
2. (No)

99. (Don't know)

99. (Refused)

I4. What tools provided by Kilowatt Crackdown were most useful in understanding and reducing energy use?

1. [RECORD ANSWER]

98. (Don't know)

99. (Refused)

I5. What other tools or seminars and workshops can NEEA, BOMA, your utility or the City offer to help you adopt energy management practices?

1. [RECORD ANSWER]

97. (None)

98. (Don't Know)

99. (Refused)

J. Motivation and Assessing Program Influence

J1. What motivated your company to participate in Kilowatt Crackdown? [DO NOT READ LIST; RECORD ALL THAT APPLY]

1. (BOMA recommended it)
2. (Peers recommended it)
3. (To meet our energy performance goals)
4. (Save energy and money)
5. (Equipment manufacturer or distributor recommended it)
6. (Reduce maintenance costs)
7. (Recommended by an energy audit)
8. (Receive tax incentives or rebates)
9. (Recommended by local utility or energy efficiency organization)
10. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

J2. Did your company conduct any major building upgrades at [BUILDING NAME, ADDRESS] within the last two years ? These upgrades are not necessarily energy-related but could impact energy use.

1. (Yes) [ASK J2a]

J2a. Could you describe the type of upgrades? [RECORD ALL THAT APPLY]

1. (Building size increased or decreased)
 2. (Remodeled floor)
 3. (Upgraded heating or cooling system)
 4. (Building shell updates; doors, windows, roof)
 5. (Cosmetic changes; carpet, paint)
 6. (Solar PV system)
 7. (Other [SPECIFY: _____])
 98. (Don't know)
 99. (Refused)
2. (No)
 98. (Don't know)
 99. (Refused)

- J3. Before participating in Kilowatt Crackdown, how active was this building in managing energy? Would you say ... **[READ LIST AND RECORD ONE RESPONSE]**
1. Very active
 2. Somewhat active
 3. Not too active
 4. Not active at all
 98. (Don't know)
 99. (Refused)
- J4. Did your building participate in other utility sponsored energy efficiency programs *before* participating in Kilowatt Crackdown?
1. (Yes)
 - J4a. What type of program was it? **[READ LIST AND RECORD ALL RESPONSES]**
 1. Energy efficient equipment
 2. Energy assessment
 3. Renewable energy incentive
 4. Energy events and education
 5. (Other **[SPECIFY:_____]**)
 98. (Don't know)
 2. (No)
 98. (Don't know)
 99. (Refused)
- J5. How many of the projects implemented with the assistance of the Kilowatt Crackdown team do you think would have been implemented in the absence of this competition? Would you say all, most, some, or none of the projects?
1. All
 2. Most
 3. Some
 4. None
 98. (Don't know) **[Skip to J7]**
 99. (Refused) **[Skip to J7]**

[IF J5 = 1, 2, 3, OR 4]

- J6. What are your reasons for saying that?
1. **[RECORD ANSWER]**
 98. (Don't know)
 99. (Refused)

J7. What more would your company like to be doing to manage energy at this building?

1. [RECORD ANSWER]
98. (Nothing more)
98. (Don't know)
99. (Refused)

K. Barriers and Benefits

Now I would like to talk with you specifically about the benefits and challenges to participating in Kilowatt Crackdown.

K1. What would you say are the main benefits to your organization resulting from the Kilowatt Crackdown activities? [DON'T READ LIST AND SELECT ALL THAT APPLY]

1. (Attractive to tenants; higher occupancy rate)
2. (Energy savings)
3. (Environmental benefits)
4. (Increased occupant comfort)
5. (Lower energy bill; saved money, reduced operating costs)
6. (Lower maintenance costs)
7. (Marketing benefits)
8. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

K2. Are there any other benefits besides saving energy that you have seen from participating in the Kilowatt Crackdown? [IF NEEDED: for example, lower maintenance costs, or water savings]. [DO NOT READ LIST; RECORD ALL THAT APPLY]

1. (No)
2. (Attractive to tenants; higher occupancy rate)
3. (Environmental benefits)
4. (Increased occupant comfort)
5. (Lower maintenance costs)
6. (Marketing benefits)
7. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

K3. What would you say are the challenges to implementing the activities in the project bank?

[DON'T READ LIST AND SELECT ALL THAT APPLY]

1. (Age/condition of building)
2. (Budget limitations)
3. (Not a high enough return on investment)
4. (Funding competition from other company priorities)
5. (High initial cost)
6. (Lack of staff time to dedicate to pursuing energy efficiency upgrades)
7. (Lack of technical knowledge about energy efficiency equipment)
8. (Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry)
9. (Long payback period)
10. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

[ASK IF K3 HAS MORE THAN ONE ANSWER][ONLY LIST ANSWERS SELECTED IN K3]

K4. What do you see as the most significant challenge in implementing the activities in the project bank? [RECORD ONE ANSWER; DO NOT READ LIST]

1. (Age/condition of building)
2. (Budget limitations)
3. (Not a high enough return on investment)
4. (Funding competition from other company priorities)
5. (High initial cost)
6. (Lack of staff time to dedicate to pursuing energy efficiency upgrades)
7. (Lack of technical knowledge about energy efficiency equipment)
8. (Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry)
9. (Long payback period)
10. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

K5. Please tell me the extent of assistance you received from Kilowatt Crackdown in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with [INSERT STATEMENT]

[A LOT OF ASSISTANCE=1, SOME ASSISTANCE=2, LITTLE ASSISTANCE=3, NO ASSISTANCE=4, DON'T KNOW=98, AND REFUSED=99] [RANDOMIZE LIST]

K5a. Strategic Energy Management resources, approaches, or tools tailored to commercial office buildings

K5b. A cost-effective system to track and manage energy for a whole building

K5c. Communicating and promoting successes with Strategic Energy Management

K5d. Training staff to implement energy reduction practices

K6. What could NEEA, BOMA, your utility or the City do to help your company overcome challenges to adopting Strategic Energy Management goals and practices?

1. [RECORD ANSWER]

2. (Nothing)

98. (Don't know)

99. (Refused)

L. Business Goals and Drivers

L1. Please tell me how important the following items are to you when planning energy efficiency goals and practices. The first statement is [INSERT STATEMENT]. Is this very important, somewhat important, not very important, or not at all important when planning energy efficiency goals and practices? [RECORD 1 FOR VERY IMPORTANT, 2 FOR SOMEWHAT IMPORTANT, 3 FOR NOT VERY IMPORTANT, 4 FOR NOT AT ALL IMPORTANT, 97 FOR NOT APPLICABLE, 98 FOR DON'T KNOW, AND 99 FOR REFUSED] [RANDOMIZE LIST]

L1a. Property cash flow

L1b. Company cash flow

L1c. Asset value

L1d. Total cost of adopting energy efficiency activities

L1e. Marketing and brand positioning

L1f. Company profit

- L2. When considering energy efficiency projects, is your company's requirement for Return on Investment (ROI) less stringent, more stringent, or the same as for other capital investments?
1. (Less stringent)
 2. (More stringent)
 3. (The same)
 98. (Don't know)
 99. (Refused)
- L3. Does your building have a specific policy that says you should replace worn out equipment with high efficiency equipment?
1. (Yes)
 2. (No policy)
 3. (No, but we have an informal policy)
 98. (Don't know)
 99. (Refused)

M. Building Characteristics

- M1. Does your company own, manage, or both own and manage the property?
1. (Owns only – does not manage)
 2. (Manages only – does not own)
 3. (Owns and manages property)
 4. (Other [SPECIFY: _____])
 98. (Don't know)
 99. (Refused)
- M2. How would you describe the use of space in the building? Would you say: [READ LIST]
1. All office space
 2. Mostly office space
 3. Office and retail space
 4. Mostly retail space
 5. Something else [SPECIFY: _____]
 98. (Don't know)
 99. (Refused)

M3. When was this building built? [RECORD ONE RESPONSE; READ LIST IF NECESSARY]

1. (1970 or before)
2. (1980s)
3. (1990s)
4. (2000s)
5. (2010 or after)
98. (Don't know)
99. (Refused)

N. Closing

N1. Do you have any other feedback about Kilowatt Crackdown that we can provide to the program team?

1. [RECORD ANSWER]
98. (Don't know)
99. (Refused)

N2. The program team would like to follow up with you later this year to support implementation of your Project Bank and energy savings. Would that be acceptable?

1. (Yes)
2. (No)
98. (Don't know)
99. (Refused)

N3. *Thank you for your help. We appreciate your time and opinions. Before we end the call, may I get your name and address so that we know where to send the gift card.*

1. (Don't send card)
2. Enter first and last name
3. Enter street address
4. Enter city
5. Enter state
6. Enter 5 digit zip code
7. Did I reach you at [INSERT PHONE]? [Verify phone number in case we have any questions about the address]

The gift card will be mailed to the address you provided in the next several months. Thank you for your time

Appendix B. Market Partners Program Firm-Level Survey

Appendix B: Northwest Energy Efficiency Alliance CRE Strategic Energy Management Adoption-Level Survey MARKET PARTNERS PROGRAM FIRM LEVEL For Building Owners or Property Managers

Audience: This survey is for executive managers of commercial real estate organizations participating in NEEA's Market Partners Program.

Researchable Question Topics	Questions	Info in NEEA Documentation
Respondent and company details	A1-A4, B1 - B3	
Understanding of SEM and current SEM activities	C1-C7	
Goal adoption	D1-D10	goal
Identification, implementation, and documentation of activities	E1-E6	SEM plan, list of measures implemented and date implemented
Allocation of resources	F1-F5	
Reviewing progress	G1-G5	updates provided to NEEA
Participation outcomes	H1-H4	
Program delivery	I1- I7, M1	
Motivation and assessing NEEA's influence	J1- J7	
Barriers and benefits	K1-K6	
Business goals and drivers	25	

NEEA describes SEM as having five elements: 1) adoption of energy performance improvement goals, 2) documentation of planned practices to reach the goals, 3) allocating staff and other resources such as training or capital, 4) implementing activities or practices toward the goals, and 5) reporting progress to senior management

SEM Elements	Survey Questions	In NEEA's Documentation?
1. Adoption of management-approved energy performance improvement goal(s)	C2a, D1-D10	
a. Documented	D7	x
b. Communicated internally or externally	D6, D8, D9, D10	
2. Documentation of planned activities to achieve the goal	C2b, E4-E6	
a. SEM Plan	E1, H1, H2	x
3. Allocation of resources toward the goal	C2c, F3, F5, H3	
a. Staffing	E3, F1, F2, F3c, F3d, H3	
b. Training	F3a, H3, I4	
c. Capital	F3b, H3, L1	
d. Tools	I5	
4. Implementation of planned activities	C2d	
a. Completed projects and dates completed	None (See MPP Building-Level Survey)	x
5. Regular reporting to management on progress towards goal(s) and effectiveness of SEM practices	C2e, G1 - G5	
a. Regular updates to NEEA		x
b. Progress towards goals	G5, H1, H1a	x
c. Observed energy savings	H1	x
d. Regular review of and updates to progress and goals	G5, H4	

Interviewer instructions are in green.

CATI programming instructions are in red.

Answer options in parenthesis are not read

Questions highlighted in blue are used for scoring

[Variables from sample]

[CONTACT NAME]

[TITLE]

[COMPANY]

[BUILDINGS]

[PROGRAM] Market Partners Program

[PORTFOLIOGOAL]

A. Introduction

- A1. May I speak with [CONTACT NAME]? [IF THAT PERSON IS NOT AT THIS PHONE NUMBER, ASK FOR NAME AND PHONE NUMBER AND START AGAIN]
1. (Yes)
 2. (No, person is not able to come to phone) [GET NAME, PHONE NUMBER, AND SCHEDULE CALLBACK]
98. (Don't know) [ASK TO SPEAK WITH SOMEONE WHO KNOWS AND BEGIN AGAIN]
99. (Refused) [THANK AND TERMINATE]
- A2. Hello, I'm [INSERT NAME] calling from [INSERT COMPANY] on behalf of NEEA, the Northwest Energy Efficiency Alliance, and BetterBricks. We are conducting an important study with participants in the NEEA Market Partner Program to understand its impact and opportunities for improvement. Are you the manager who has engaged in the Market Partner Program on behalf of your firm?
1. (Yes)
 2. (No, person is able to come to phone) [RECORD NAME AND REPEAT A2]
 3. (No, person is not able to come to phone) [SCHEDULE CALLBACK]
98. (Don't know) [IF SPEAKING WITH FIRST CONTACT THEN ASK FOR THE SECOND CONTACT PERSON AND START AGAIN, IF SPEAKING WITH SECOND CONTACT THEN ASK FOR PERSON WHO IS AND START AGAIN]
99. (Refused) [THANK AND TERMINATE]

[READ DESCRIPTION IF NEEDED]

The Market Partners Program provides ongoing technical support and coaching to help commercial firms adopt Strategic Energy Management as an important part of how they do business.

A3. Are you familiar with the energy management activities implemented as part of NEEA's Market Partners Program?

1. Yes
2. No [IF SPEAKING WITH FIRST CONTACT THEN ASK FOR THE SECOND CONTACT PERSON AND START AGAIN, IF SPEAKING WITH SECOND CONTACT THEN ASK FOR PERSON WHO IS FAMILIAR AND START AGAIN]
98. (Don't know) [IF SPEAKING WITH FIRST CONTACT THEN ASK FOR THE SECOND CONTACT PERSON AND START AGAIN, IF SPEAKING WITH SECOND CONTACT THEN ASK FOR PERSON WHO IS FAMILIAR AND START AGAIN]
99. (Refused) [THANK AND TERMINATE]

IF THE FIRST CONTACT STILL SAYS THEY DID NOT PARTICIPATE OR DON'T KNOW, ASK FOR THE SECOND CONTACT PERSON. IF THE SECOND CONTACT SAYS THEY DID NOT PARTICIPATE OR DON'T KNOW, THANK AND TERMINATE.

**THIS SHOULD NOT HAPPEN OFTEN SO LET US KNOW WHEN IT DOES.

A4. *Because we value your time, we would like to offer you a \$25 gift card for completing this survey.* Before we get started, I'd like you to know that we will keep your responses anonymous. They will be aggregated with other people's responses in our report. Your responses will not be linked to you or your company, nor will we share them with others in your company. So please feel free to speak as candidly as you like.

Back-up information, not to be programmed:

[If "No – Not a convenient time," ask if Respondent would like to arrange a more convenient time for us to call them back or if you can leave a message for that person.]

[IF RESPONDENT ASKS HOW LONG, SAY: "APPROXIMATELY 25 MINUTES."]

[IF NEEDED:] This survey is for research purposes only. This is not a marketing call. This is the primary way for NEEA to gather information about the commercial real estate initiative. Your participation in this study is important so that NEEA can include your perspectives in how their energy efficiency initiatives are offered.

B. Screeners

- B1. How long have you been with [COMPANY]? [READ LIST IF NEEDED]
1. Less than 1 year
 2. 1 to less than 3 years
 3. 3 to less than 5 years
 4. More than 5 years
 98. (Don't know)
 99. (Refused)
- B2. Our records show your role is [TITLE]. Is this correct?
1. (Yes)
 2. (No)
- B2a. What is your role at the company?
1. [RECORD ANSWER]
- B3. How long have you had the role of [TITLE]? [READ LIST IF NEEDED]
1. Less than 1 year
 2. 1 to less than 3 years
 3. 3 to less than 5 years
 4. More than 5 years
 98. (Don't know)
 99. (Refused)
- B4. How do your job duties relate to energy performance at this company? [ENTER ALL THAT APPLY]
1. [RECORD ANSWER]
 2. (Energy champion/energy manager)

C. Understanding SEM and Current Energy Management Activities

- C1. I would like to talk about Strategic Energy Management (SEM). In your words could you please describe the key elements of Strategic Energy Management? [RECORD EACH ELEMENT MENTIONED]
1. (Identifying energy performance improvement goals)
 2. (Documentation of planned activities to reach the goals)
 3. (Allocating staff or training or capital resources)
 4. (Implementing activities toward reaching the goals)
 5. (Reporting progress to senior management)
 6. (Other) [SPECIFY]
 7. (I don't know what SEM is) [READ PARAGRAPH BELOW]
 98. (Don't know) [READ PARAGRAPH BELOW]
 99. (Refused) [READ PARAGRAPH BELOW]

[IF DON'T KNOW WHAT SEM IS SAY, "NEEA describes SEM as having five elements:

1) adoption of energy performance improvement goals, 2) documentation of planned practices to reach the goals, 3) allocating staff and other resources such as training or capital, 4) implementing activities or practices toward the goals, and 5) reporting progress to senior management"] GO TO C2

[IF C1 <>1 and 2 and 3 and 4 and 5 ASK C1a]

C1a. Along with the elements you have mentioned, NEEA's definition of SEM also includes [INSERT MISSING responses 1-5 FROM C1 and then ASK C2

- C2. To what extent is each of the SEM elements in place at your company? Is the [INSERT STATEMENT] fully in place, mostly in place, partly in place, or not in place? [FULLY IN PLACE=1, MOSTLY IN PLACE=2, PARTLY IN PLACE=3, NOT IN PLACE=4, DON'T KNOW=98, AND REFUSED=99]
- C2a. Identification and adoption of energy performance improvement goals
 - C2b. Documentation of planned activities to reach the goals
 - C2c. Allocation of staff resources and training or allocation of capital resources
 - C2d. Ongoing implementation of activities or practices toward reaching the goals
 - C2e. Reporting of progress to senior management

[ASK IF ANY OF C2a through C2e ARE NOT = 1 FULLY IN PLACE] IF C2a through C2e are ALL =1 FULLY IN PLACE skip to C6

C3. Do you intend to fully implement NEEA's five elements of Strategic Energy Management?

1. (Yes) [SKIP TO C5]
2. (No)

C3a. What elements will not be implemented? [DO NOT READ LIST; RECORD ALL THAT APPLY]

1. (Adoption of energy performance improvement goals)
2. (Documentation of planned activities to reach the goals)
3. (Allocating staff resources and training or capital resources)
4. (Implementing activities or practices toward reaching the goals)
5. (Reporting progress to senior management)

98. (Don't know)
99. (Refused)

[ASK IF C3=2, 98, OR 99]

C4. What is preventing you from fully implementing Strategic Energy Management at your company?

1. (Lack of time)
2. (Lack of staff resources)
3. (Lack of capital resources)
4. (Lack of support from senior management)
5. (Lack of support from building tenants)
6. (Other [SPECIFY])
98. (Don't know)
99. (Refused)

[IF C3=1]

C5. When do you plan to have fully implemented Strategic Energy Management? Is it in...[READ RESPONSES]

1. Less than one year
2. One to two years
3. Two to five years
4. More than five years
98. (Don't know)
99. (Refused)

C6. How did you decide which buildings would implement SEM?

1. [RECORD ANSWER]
98. (Don't know)
99. (Refused)

C7. Did you implement SEM at other buildings differently?

1. [RECORD ANSWER]
98. (Don't know)
99. (Refused)

C8. Are there other considerations you have in how Strategic Energy Management is implemented in your firm's buildings?

1. [RECORD ANSWER]
98. (Don't know)
99. (Refused)

D. Goal Adoption

Now I'd like to talk more specifically about your energy management goals.

D1. What is your energy performance improvement goal? [READ IF NEEDED: This goal(s) may be expressed as a percentage or an absolute number in units of energy use intensity (EUI). The goal(s) must be stated as a comparison to a defined baseline. It could also be defined through adoption of other systems such as LEED or ENERGY STAR.]

1. [RECORD GOAL:_____]
98. (Don't know)

[IF D1=98 AND THERE IS A PORTFOLIO LEVEL GOAL]

D1b. Our records show that your company has adopted an energy performance improvement goal of [PORTFOLIO GOAL]. Is this correct?

1. (Yes, correct)
2. (No, incorrect goal [RECORD CORRECT GOAL AND ADOPTION YEAR:_____]) [SKIP TO D3]
3. (Don't know) [SKIP TO D3]
4. (Refused) [SKIP TO D3]
99. (Refused)

D2. What date was the energy performance improvement goal adopted? [IF NEEDED: We are looking for the month and year. The exact day isn't necessary.] [IF THEY DON'T KNOW THE MONTH AT LEAST RECORD THE YEAR]

1. [RECORD ANSWER] ([RECORD MONTH AND YEAR]
98. (Don't know)
99. (Refused)

D3. Have you set or adopted any other energy related goals because of your participation in the Market Partners Program? Goals can be expressed as a percentage reduction or an absolute number compared to existing energy use. They can be expressed as an energy intensity reduction (EUI) or through adoption of other systems such as LEED or ENERGY STAR. [RECORD ALL THAT APPLY]

1. (Percentage reduction in energy use [SPECIFY:_____])
2. (Absolute number reduction in energy used [SPECIFY:_____])
3. (Energy intensity reduction [SPECIFY:_____])
4. (LEED)
5. (ENERGY STAR)
6. (Sustainability goals [SPECIFY:_____])
7. (Other 1 [SPECIFY:_____])
8. (Other 2 [SPECIFY:_____])
9. (Other 3 [SPECIFY:_____])
10. (Other 4 [SPECIFY:_____])
11. (Other 5 [SPECIFY:_____])
98. (Don't know)
99. (Refused)

[ASK IF D3=1-11]

D4. What year did you adopt the goal [INSERT FOR EACH GOAL FROM D3]?

1. 2010
2. 2011
3. 2012
4. 2013
5. 2014
98. (Don't know)
99. (Refused)

D5. Is the goal [INSERT EACH GOAL FROM D1 AND D3] for this building only, for a particular portfolio, or the entire organization?

1. (Building)
2. (Portfolio)
3. (Entire organization)
4. (Other [SPECIFY:_____])
98. (Don't know)
99. (Refused)

[REPEAT AND ASK ABOUT EACH GOAL MENTIONED IN D1 AND D3]

D6. Has the goal [INSERT EACH GOAL FROM D1 AND D3] been formally presented or accepted by the organization? [DO NOT READ LIST]

1. (Yes, presented and accepted)
2. (Yes, presented only)
3. (No, haven't been presented or accepted)
4. (Other [SPECIFY:_____])
98. (Don't know)
99. (Refused)

D7. How were the goals documented by your company?

1. [RECORD ANSWER]
2. (Company didn't document; only NEEA documented the goals)
98. (Don't know)
99. (Refused)

[ASK D8 AND D9 ABOUT EACH GOAL MENTIONED IN D1 AND D3]

D8. Was the goal [INSERT EACH GOAL ONE AT A TIME FROM D1 AND D3] communicated to internal staff?

1. (Yes)
2. (No)
3. (Other [SPECIFY:_____])
98. (Don't know)
99. (Refused)

[ASK D9 ABOUT EACH GOAL IF D8 = YES]

D9. I'm going to read a short list of ways the goal could be communicated to internal staff. Please tell me which ways the goal [INSERT EACH GOAL ONE AT A TIME FROM D1 AND D3] was communicated. Was it by: [READ LIST; RECORD ALL THAT APPLY]

1. Email
2. Website
3. Mailing
4. Company meeting, presentation
5. Open house presentation
6. Budget report
7. Other [SPECIFY: _____]
98. (Don't know)
99. (Refused)

D10. Has your firm communicated externally to investors, owners, tenants, or other stakeholders about your energy-related goals or accomplishments?

1. (Yes)
2. (No)
98. (Don't know)
99. (Refused)

[ASK IF D10=1]

D11. Who were the goals shared with outside the company? [RECORD ALL THAT APPLY]

1. (Tenants)
2. (Agents)
3. (Brokers)
4. (Energy related contractors)
5. (Energy related service providers)
6. (Other [SPECIFY: _____])
7. (Owners)
98. (Don't know)
99. (Refused)

E. Identification, Implementation, and Documentation of Activities

Now I would like to talk about activities that you or your organization have planned for reducing energy in the future.

E1. What actions have you identified to help improve energy performance in your company in the next six months? These could include all things related to energy such as capital purchases, capital improvements, operations and maintenance changes, training, certifications, other behavioral change efforts, and/or third-party service provider proposals/projects. **[DO NOT READ LIST; MULTIPLE RESPONSE; IF NEEDED: “We are only looking for *types* of projects you plan to implement, not specific details about these projects”]**

1. (None)
2. (Efficient equipment)
3. (Maintenance changes)
4. (Trainings and certifications)
5. (Energy tracking tools)
6. (Installed or improved heating or cooling controls)
7. (Other heating or cooling changes **[SPECIFY:_____]**)
8. (Changed lighting timing; installed occupancy sensors)
9. (Installed LED parking lot lights)
10. (Other lighting projects **[SPECIFY:_____]**)
11. (Other 1 **[SPECIFY 1:_____]**)
12. (Other 2 **[SPECIFY 2:_____]**)
13. (Other 3 **[SPECIFY 3:_____]**)
14. (Other 4 **[SPECIFY 3:_____]**)
15. (Other 5 **[SPECIFY 3:_____]**)
98. (Don't know)
99. (Refused)

E2. How are actions implemented differently between buildings within your organization?

1. (No difference between buildings)
2. (This is the only building we own or manage)
3. (Other) **[SPECIFY]**
98. (Don't know)
99. (Refused)

- E3. Has your firm taken action to conduct outreach, education or challenge tenants to improve energy performance?
1. (Yes)
 2. (No)
 98. (Don't know)
 99. (Refused)
- E4. We are aware that the Market Partner Program documents your energy management actions and practices. Does your company also document energy management activities internally? **[RECORD ALL THAT APPLY]**
1. (Yes, we document all the actions internally)
 2. (NEEA documented all the actions and shared their documentation with our company)
 3. (Something else **[SPECIFY:_____]**)
 98. (Don't know)
 99. (Refused)
- [ASK IF E4 = 1]**
- E5. How did you or your organization document the actions and practices? **[READ LIST IF NECESSARY, RECORD ALL THAT APPLY]**
1. (Email)
 2. (Website)
 3. (Newsletter)
 4. (Company meeting)
 5. (Quarterly report)
 6. (Other **[SPECIFY:_____]**)
 98. (Don't know)
 99. (Refused)

[ASK IF E4 = 1]

E6. Which of the following energy efficiency activities have you or your organization documented? Let's start with ... [INSERT FIRST ITEM FROM THE LIST BELOW – E6a to E6f]. Has this been documented for all, most, some, or none of your energy efficiency activities? [READ LIST AND RECORD 1=all, 2=most, 3=some, 4=none; 96 FOR N/A, 98 FOR DON'T KNOW, 99 FOR REFUSED] [RANDOMIZE LIST]

- E6a. A list and description of planned energy efficiency activities
- E6b. The staffing resources that you or your organization will need to conduct the activity; staffing resources include anyone who will be planning or implementing the actions
- E6c. The training resources that you will need
- E6d. The capital resources that you will need
- E6e. The timeframe of planned projects
- E6f. The expected impacts and/or benefits of the energy efficiency activity

F. Allocation of Resources

Now we will talk about how your organization has allocated resources for reducing energy.

[DO NOT ASK F1 IF THE RESPONDENT SAID THEY ARE THE ENERGY MANAGER OR ENERGY CHAMPION IN B4]

- F1. Are you or someone else at your company a designated “energy manager” or “energy champion”?
 - 1. (Yes)
 - 2. (No)
 - 98. (Don't know)
 - 99. (Refused)

- F2. Do you have an energy team that meets regularly or is energy discussed as part of other regular meetings such as operations or sustainability?
 - 1. (Yes)
 - 2. (No)
 - 98. (Don't know)
 - 99. (Refused)

F3. I'm going to read a list of energy-related activities. Please tell me if your organization has allocated staff, capital, or other resources to each one by answering YES or NO. By allocating staff resources we are referring to anyone who works with energy efficiency practices or activities even if that isn't the only role they have with the company. [READ EACH AND RECORD 1 FOR YES, 2 FOR NO; 96 FOR N/A, 98 FOR DON'T KNOW, 99 FOR REFUSED] [RANDOMIZE a-d]

- F3a. Has your firm sent or approved staff resources to attend energy related training, energy related coaching or commercial real estate market awareness events?
- F3b. Has your firm budgeted for any energy related activities such as tools or equipment, operations and maintenance projects, capital projects, or training for staff?
- F3c. Has your firm hired new resources or redefined existing job duties to include energy management job responsibilities?
- F3d. Has your firm approved staff resources for monitoring electric or natural gas billing data?

[ASK IF (F1 <> YES AND F2 <> YES) AND (ANY IN F3 <> YES)]

F4. What are the reasons your company hasn't allocated resources for energy performance improvement?

- 1. [RECORD ANSWER]
- 98. (Don't know)
- 99. (Refused)

F5. Has your company allocated any additional resources for energy efficiency or energy management?

- 1. (Yes) [ASK F5a]
 - F5a. Please describe the additional resources allocated for energy efficiency? [RECORD ANSWER]
- 2. (No)
- 98. (Don't know)
- 99. (Refused)

G. Reviewing Progress

Now we're going to talk about reviewing progress toward your energy performance goal.

- G1. Is progress toward your energy performance goal communicated to upper management on a regular basis?
1. (Yes)
 2. (No) **[SKIP TO NEXT SECTION]**
 3. (Plan to in the future) **[SKIP TO NEXT SECTION]**
 98. (Don't know) **[SKIP TO NEXT SECTION]**
 99. (Refused) **[SKIP TO NEXT SECTION]**
- G2. Are these management updates provided for a single building, a portfolio, or the entire organization?
1. (Single building)
 2. (Portfolio)
 3. (Entire organization)
 4. (Other **[SPECIFY:_____]**)
 98. (Don't know)
 99. (Refused)
- G3. How frequently are updates provided to management about the progress your organization is making in meeting its energy performance goals? **[READ LIST IF NECESSARY]**
1. (Daily)
 2. (Weekly)
 3. (Monthly)
 4. (Quarterly)
 5. (Twice a year)
 6. (Annually)
 7. (Never provide updates)
 8. (Whenever they are needed; no set schedule or timeline)
 9. (Other **[SPECIFY:_____]**)
 98. (Don't know)
 99. (Refused)

[SKIP IF G3=7, 98, 99]

G4. How are these updates shared with the organization? [RECORD ALL THAT APPLY]

1. (Email)
2. (Website)
3. (Mailing)
4. (Company meeting, presentation)
5. (Open house presentation)
6. (Budget report)
7. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

[SKIP IF G3=7, 98, 99]

G5. Which of the following items do management updates include? Do they include ...

[READ LIST AND RECORD 1 FOR YES, 2 FOR NO, 97 FOR N/A, 98 FOR DON'T KNOW AND 99 FOR REFUSED] [RANDOMIZE LIST]

- G5a. An update about actual performance measured against the goal
- G5b. The effectiveness of each activity on reducing energy
- G5c. Whether the staffing, training, or capital resources allocated were sufficient to perform the practice or reach the energy performance improvement goals
- G5d. Changes to goals or metrics
- G5e. Progress updates on implementation of previously approved energy projects
- G5f. Presentation of proposed projects and their potential benefits, for approval by management

H. Participation Outcomes

H1. Now I'd like to talk about current outcomes of your Strategic Energy Management actions. Has your company improved its energy performance as much as expected?

1. (Yes)
2. (No) [ASK H1a]
 - H1a. Are you on track to meet your energy performance goals?
 1. (Yes)
 2. (No)
 3. (Don't know)
 4. (Refused)
98. (Don't know)
99. (Refused)

- H2. How helpful do you think the activities and practices you've planned as a result of the Market Partners Program have been in helping you improve your energy performance? Have they been ... [\[READ LIST\]](#)
1. Very helpful
 2. Somewhat helpful
 3. Not too helpful
 4. Not helpful at all
 98. (Don't know)
 99. (Refused)
- H3. Did you have enough staffing, training, and capital resources to improve your energy performance as much as you intended?
1. (Yes)
 2. (No)
- H3a. Please explain which resources were less available than planned? [\[If needed, staffing, training, capital resources , any other?\]](#)
98. (Don't know)
 99. (Refused)
- H4. Do you revisit your plan to improve energy performance on a regular basis, or update it when changes are needed?
1. (Regular basis)
 2. (Update as needed)
 98. (Don't know)
 99. (Refused)

I. Program Delivery

I1. I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in...[INSERT EACH STATEMENT], would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable? [SCALE 1=Very valuable, 2=somewhat valuable, 3=not too valuable, 4=not at all valuable, 98=Don't know, 99=Refused; 96=N/A ROTATE a-k; SKIP TO I4 IF ALL STATEMENTS ARE DK OR RF] [REPEAT SCALE AS NEEDED]

- I1a. Establishing a management supported mission statement or vision for energy efficiency
- I1b. Forming a cross-functional team within your firm
- I1c. Establishing or supporting benchmarking in Portfolio Manager
- I1d. Developing an action plan
- I1e. Setting energy performance goals
- I1f. Receiving building technical scoping, identifying opportunities and engineering training
- I1g. Reviewing progress toward your plans and energy performance goal
- I1h. Reporting and communicating energy and cost savings with owners or external stakeholders
- I1i. Connecting with utility staff and use incentives

[ASK SEPARATELY FOR EACH STATEMENT IN I1 THAT WAS >2]

I2. Can you tell me the reasons you said that [INSERT ANSWERS FROM I1 THAT WERE >2] were not very valuable components of the program?

- 1. [RECORD ANSWER 1]
- 2. [RECORD ANSWER 2]
- 3. [RECORD ANSWER 3]
- 4. [RECORD ANSWER 4]
- 5. [RECORD ANSWER 5]
- 6. [RECORD ANSWER 6]
- 7. [RECORD ANSWER 7]
- 8. [RECORD ANSWER 8]
- 98. (Don't know)
- 99. (Refused)

- I3. Are there other components or assistance you received from the program that you found valuable?
1. (Yes, Specify _____)
 2. (No)
 98. (Don't know)
 99. (Refused)
- I4. Have you attended other professional seminars and workshops on energy management offered by different organizations that you found helpful?
1. (Yes, Specify _____)
 2. (No)
 98. (Don't know)
 99. (Refused)
- I5. What tools provided by the Market Partners Program were most useful in understanding and improving your company's energy performance?
1. [RECORD ANSWER]
 98. (Don't know)
 99. (Refused)
- I6. What other tools, information or training can NEEA and BetterBricks offer to motivate commercial real estate owners and managers to adopt Strategic Energy Management?
1. [RECORD ANSWER]
 97. (None)
 98. (Don't Know)
 99. (Refused)
- I7. What tools or strategies should be included in the Market Partners Program to encourage more coordination between property managers and building engineers or operators?
1. [RECORD RESPONSE]
 98. (Don't know)
 99. (Refused)

J. Motivation and Assessing NEEA's Influence

- J1. What motivated your company to participate in the Market Partners Program? **[DO NOT READ LIST; RECORD ALL THAT APPLY]**
1. (To stay competitive in the industry)
 2. (To attract or retain tenants)
 3. (To meet our energy performance goals)
 4. (Save energy and money through reducing operating costs)
 5. (To increase long-term asset value)
 6. (To increase value delivered to our owners)
 7. (Other **[SPECIFY:_____]**)
 98. (Don't know)
 99. (Refused)
- J2. Before participating in this program, how active was your company in managing energy? Would you say ... **[READ LIST AND RECORD ONE RESPONSE]**
1. Very active
 2. Somewhat active
 3. Not too active
 4. Not active at all
 98. (Don't know)
 99. (Refused)
- J3. Did your company participate in other utility-sponsored energy efficiency programs *before* participating in NEEA's Market Partners Program?
1. (Yes)
 - J3a. What type of program was it? Was it...**[READ LIST AND RECORD ALL RESPONSES]**
 1. Energy efficient equipment
 2. Energy assessment
 3. Renewable energy incentive
 4. Energy events and education
 5. (Other **[SPECIFY:_____]**)
 98. (Don't know)
 2. (No)
 98. (Don't know)
 99. (Refused)

- J4. Do you plan to participate in utility-sponsored energy efficiency programs more often in the future as a result of your participation in the Market Partners Program?
1. (Yes)
 2. (No)
 98. (Don't know)
 99. (Refused)
- J5. How many of the projects implemented through NEEA's assistance do you think would have been implemented in the absence of the Market Partners Program? Would you say all, most, some, or none of the projects?
1. (All)
 2. (Most)
 3. (Some)
 4. (None)
 98. (Don't know) [Skip to J6]
 99. (Refused) [Skip to J6]
- [IF J4 = 1, 2, 3, OR 4]
- J6. What are your reasons for saying that?
1. [RECORD ANSWER]
 98. (Don't know)
 99. (Refused)
- J7. What more would your company like to be doing to manage energy?
1. [RECORD ANSWER]
 98. (Nothing more)
 98. (Don't know)
 99. (Refused)

K. Barriers and Benefits

Now I would like to talk with you specifically about Strategic Energy Management.

K1. What would you say are the main benefits to your organization resulting from your firm's participation in the Market Partners Program? **[DON'T READ LIST AND SELECT ALL THAT APPLY]**

1. (No benefits)
2. (Attractive to tenants; higher occupancy rate)
3. (Attractive to owners)
4. (Energy savings)
5. (Environmental benefits)
6. (Increased occupant comfort)
7. (Lower energy bill; saved money, reduced operating costs)
8. (Lower maintenance costs)
9. (More effective organization across roles)
10. (Marketing benefits)
11. (Other **[SPECIFY:_____]**)
98. (Don't know)
99. (Refused)

K2. Are there any other benefits besides saving energy that you have seen from implementing Strategic Energy Management? **[IF NEEDED: for example, lower maintenance costs, or water savings]. [DO NOT READ LIST; RECORD ALL THAT APPLY]**

1. (No)
2. (Attractive to tenants; higher occupancy rate)
3. (Environmental benefits)
4. (Increased occupant comfort)
5. (Lower maintenance costs)
6. (Marketing benefits)
7. (Other **[SPECIFY:_____]**)
98. (Don't know)
99. (Refused)

K3. What would you say are the challenges to adopting Strategic Energy Management?

[DON'T READ LIST AND SELECT ALL THAT APPLY]

1. (Age/condition of buildings)
2. (Budget limitations)
3. (Not a high enough return on investment)
4. (Funding competition from other company priorities)
5. (High initial cost)
6. (Lack of knowledgeable staff to support energy efficiency best practices)
7. (Lack of staff time to dedicate to energy efficiency training or implementation)
8. (Lack of technical knowledge about energy efficiency best practices)
9. (Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry)
10. (Long payback period)
11. (No challenges) [SKIP TO K5]
12. (Other [SPECIFY: _____])
98. (Don't know) [SKIP TO K5]
99. (Refused) [SKIP TO K5]

[ASK IF K3 HAS MORE THAN ONE ANSWER; SHOW ONLY ANSWERS FROM K3]

K4. What do you see as the most significant challenge in adopting Strategic Energy Management? [RECORD ONE ANSWER; DO NOT READ LIST]

1. (Age/condition of buildings)
2. (Budget limitations)
3. (Not a high enough return on investment)
4. (Funding competition from other company priorities)
5. (High initial cost)
6. (Lack of knowledgeable staff to support energy efficiency best practices)
7. (Lack of staff time to dedicate to energy efficiency training or implementation)
8. (Lack of technical knowledge about energy efficiency best practices)
9. (Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry)
10. (Long payback period)
11. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

- K5. Please tell me the extent of assistance you received from NEEA and BetterBricks in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with [INSERT STATEMENT]
[A LOT OF ASSISTANCE=1, SOME ASSISTANCE =2, LITTLE ASSISTANCE=3, NO ASSISTANCE=4, DON'T KNOW=98, AND REFUSED=99] [RANDOMIZE LIST]
- K5a. Strategic Energy Management resources, approaches, or tools tailored to commercial office buildings
 - K5b. A cost-effective system to track and manage energy for a whole-building
 - K5c. Communicating and promoting successes with Strategic Energy Management
 - K5d. Training staff to implement energy performance improvement activities
- K6. What could NEEA/BetterBricks do to help your company overcome challenges to adopting Strategic Energy Management practices?
- 1. [RECORD ANSWER]
 - 2. (Nothing)
 - 98. (Don't know)
 - 99. (Refused)

L. Business Goals and Drivers

- L1. When considering energy efficiency projects, is your company's requirement for Return on Investment less stringent, more stringent, or the same as for other capital investments?
- 1. (Less stringent)
 - 2. (More stringent)
 - 3. (The same)
 - 98. (Don't know)
 - 99. (Refused)

M. Closing

- M1. Do you have any other feedback about the Market Partners Program that we can provide to NEEA?
- 1. [RECORD ANSWER]
 - 2. (No feedback)
 - 98. (Don't know)
 - 99. (Refused)

M2. The program team would like to follow up with you later this year and on an annual basis to gain updates on your progress and continue to measure your energy savings. Would that be acceptable?

1. (Yes) [BE SURE TO HAVE CORRECT CONTACT NAME SO WE KNOW WHO WOULD BE WILLING TO BE CONTACTED]
2. (No)
98. (Don't know)
99. (Refused)

M3. *Thank you for your help. We appreciate your time and opinions. Before we end the call, may I get your name and address so that we know where to send the gift card.*

1. (Don't send card)
2. Enter first and last name
3. Enter street address
4. Enter city
5. Enter state
6. Enter 5 digit zip code
7. Did I reach you at [INSERT PHONE]? [Verify phone number in case we have any questions about the address]

The gift card will be mailed to the address you provided in the next several months. Thank you for your time.

Appendix C. Market Partners Program Building-Level Survey

**Appendix C: Northwest Energy Efficiency Alliance CRE
Strategic Energy Management Adoption-Level Survey
MARKET PARTNER PROGRAMS BUILDING LEVEL
For Property Managers, Building Engineers,
or Physical Managers**

Audience: This survey is for property managers, building engineers, or physical managers of privately owned commercial office real estate buildings participating in NEEA's **Market Partner Program (MPP)**.

Researchable Question Topics	Questions	Info in NEEA Documentation
Respondent and company details	A1-A3, B1 - B4	
Understanding of SEM and current SEM activities	None (See MPP Firm level)	
Goal adoption	D1 - D3	goal
Identification, implementation, and documentation of activities	E1-E7	SEM plan, list of measures implemented and date implemented
Allocation of resources	F1-F4	
Reviewing progress	G1-G4	updates provided to NEEA
Plan outcome	H1-H3	
Program Delivery	I1- I8, M1	
Motivation and assessing NEEA's Influence	J1- J4	
Barriers and benefits	K1-K5	
Business goals and drivers	L1-L3	

NEEA describes SEM as having five elements: 1) adoption of energy performance improvement goals, 2) documentation of planned practices to reach the goals, 3) allocating staff and other resources such as training or capital, 4) implementing activities or practices toward the goals, and 5) reporting progress to senior management

SEM Elements	Survey Questions	In NEEA's Documentation?
1. Adoption of management-approved energy performance improvement goal(s)	D1 - D3	
a. Documented	None (See MPP Firm level survey)	x
b. Communicated internally or externally	None (See MPP Firm level survey)	
2. Documentation of planned activities to achieve the goal	E3, E5-E7	
a. SEM Plan	H1, H2	x
3. Allocation of resources toward the goal	F1 - F4, H3	
a. Staffing	F1 - F4	
b. Training	I2, I3, I4	
c. Capital	F3d, L2, L3	
d. Tools	None (See MPP Firm-Level Survey)	
4. Implementation of planned activities	E1-E2	
a. Completed projects and dates completed	E1-E2	x
5. Regular reporting to management on progress towards goal(s) and effectiveness of SEM activities	G1 - G4	
a. Regular updates to NEEA		x
b. Progress towards goals	G1 - G4, H1, H1a	x
c. Observed energy savings	H1	x
d. Regular review of and updates to progress and goals	G1 - G4	

Interviewer instructions are in green.

CATI programming instructions are in red.

Answer options in parenthesis are not read

[Variables from sample]

[CONTACT NAME]

[TITLE]

[MANAGER'S NAME]

[COMPANY]

[BUILDING NAME]

[ADDRESS]

[PROGRAM] Market Partners Program

[PRACTICE 1]

[PRACTICE 2]

[PRACTICE 3]

[BEHAVIOR1]

[BEHAVIOR2]

[BEHAVIOR3]

A. Introduction

- A1. May I speak with [CONTACT NAME] with [COMPANY at ADDRESS]? [IF THAT PERSON IS NOT AT THIS PHONE NUMBER, ASK FOR NAME AND PHONE NUMBER AND START AGAIN]
1. (Yes)
 98. (Don't know) [ASK TO SPEAK WITH SOMEONE WHO KNOWS AND BEGIN AGAIN]
 99. (Refused) [THANK AND TERMINATE]
- A2. Hello, I'm [INSERT NAME] calling from [INSERT COMPANY] on behalf of NEEA, the Northwest Energy Efficiency Alliance, and BetterBricks at the referral of [MANAGER'S NAME]? We are conducting an important study with participants in NEEA's Market Partners Program in order to understand the impact of the program and areas for improvement. Are you the representative is most familiar with energy efficiency activities at [BUILDING NAME] at [ADDRESS]?
1. (Yes)
 2. (No, person is able to come to phone) [RECORD NAME AND REPEAT A2]
 3. (No, person is not able to come to phone) [SCHEDULE CALLBACK]
 98. (Don't know) [ASK FOR PERSON WHO IS AND START AGAIN]
 99. (Refused) [THANK AND TERMINATE]

IF THEY STILL SAY THEY DID NOT PARTICIPATE OR DON'T KNOW ASK IF THERE IS SOMEONE ELSE IN THE COMPANY WHO MAY HAVE MORE INFORMATION AND IF NOT, THANK AND TERMINATE.

****THIS SHOULD HAPPEN VERY INFREQUENTLY SO PLEASE KEEP TRACK OF THIS AND REPORT TO US IMMEDIATELY ANYTIME A COMPANY DISQUALIFIES AT THIS QUESTION.**

- A3. *Because we value your time, we would like to offer you a \$25 gift card for completing this survey.* Before we get started, I'd like you to know that we will keep your responses anonymous. They will be aggregated with other people's responses in our report. Your responses will not be linked to you or your company, nor will we share them with others in your company. So please feel free to speak as candidly as you like.

We are interviewing building managers with different levels of involvement in their firm's participation in NEEA's Market Partners Program. Please tell us if you don't know the answer to

a question or if you don't have direct experience with a program component that we are asking about.

Back-up information, not to be programmed:

[If "No – Not a convenient time," ask if Respondent would like to arrange a more convenient time for us to call them back or if you can leave a message for that person.]

[IF RESPONDENT ASKS HOW LONG, SAY: "APPROXIMATELY 20 MINUTES."]

[IF NEEDED:] This survey is for research purposes only. This is not a marketing call. This is the primary way for NEEA to gather information about the commercial real estate initiative. Your participation in this study is important so that NEEA can include your perspectives in how their energy efficiency initiatives are offered.

B. Screeners

B1. How long have you been with [COMPANY]? [READ LIST IF NEEDED]

1. Less than 1 year
2. 1 to less than 3 years
3. 3 to less than 5 years
4. More than 5 years
98. (Don't know)
99. (Refused)

B2. Our records show your role is [TITLE]. Is this correct?

1. (Yes)
 2. (No)
- B2a. What is your role at the company?
1. [RECORD ANSWER]

B3. How long have you had the role of [TITLE]? [READ LIST IF NEEDED]

1. Less than 1 year
2. 1 to less than 3 years
3. 3 to less than 5 years
4. More than 5 years
98. (Don't know)
99. (Refused)

B4. How do your job duties relate to energy performance at this building?

1. [RECORD ANSWER]
2. (Energy champion/energy manager)

C. Understanding of SEM and Current Energy Management Activities

D. Goal Adoption

Now I'd like to talk more specifically about your energy performance goals.

D1. Do you have an energy performance improvement goal for [BUILDING NAME]?

1. (Yes)
2. (No) [SKIP TO E1]
98. (Don't know) [SKIP TO E1]
99. (Refused) [SKIP TO E1]

D2. What is the energy performance improvement goal? [READ IF NEEDED: This goal(s) may be expressed as a percentage or an absolute number in units of energy use intensity (EUI). The goal(s) must be stated as a comparison to a defined baseline. It could also be defined through adoption of other systems such as LEED or ENERGY STAR.]

1. [RECORD GOAL:_____]
2. (We don't have a goal) [SKIP TO E1]
98. (Don't know) [SKIP TO E1]
99. (Refused) [SKIP TO E1]

D3. When was this goal adopted and accepted by senior management? [IF NEEDED: We are looking for the month and year. The exact day isn't necessary.] [IF THEY DON'T KNOW THE MONTH AT LEAST RECORD THE YEAR]

1. [RECORD GOAL ADOPTION DATE (MONTH/YEAR):_____]
2. (Has not been accepted by senior management)
98. (Don't know)
99. (Refused)

E. Identification, Implementation, and Documentation of Activities

Now I would like to talk about practices and activities that you or your colleagues have planned for improving energy performance in this building.

[SKIP TO E2 IF NO PRACTICES IN SAMPLE]

E1. Our records show that you recently implemented these activities at [INSERT BUILDING NAME] [INSERT PRACTICE 1, PRACTICE2, AND PRACTICE3]. Is this correct?

[RECORD ALL THAT APPLY]

1. (Yes, all correct)
2. (No) [SELECT ONES THAT INCORRECT BELOW AND CORRECT THEM]
 - E1a. (Practice 1 incorrect [RECORD CORRECT PRACTICE:_____])
 - E1b. (Practice 2 is incorrect [RECORD CORRECT PRACTICE:_____])
 - E1c. (Practice 3 is incorrect [RECORD CORRECT PRACTICE:_____])
98. (Don't know)
99. (Refused)

[SKIP TO E3 IF NO BEHAVIORS IN SAMPLE]

E2. Our records show that in previous years you implemented these operational best practices at [INSERT BUILDING NAME] [INSERT BEHAVIOR1, BEHAVIOR2, AND BEHAVIOR3]. Are these activities still in place? [RECORD ALL THAT APPLY]

1. (Yes, all still in place)
2. (No) [SELECT ONES THAT WERE INCORRECT BELOW AND CORRECT THEM]
 - E2a. (Practice 1 incorrect [RECORD CORRECT PRACTICE:_____])
 - E2b. (Practice 2 is incorrect [RECORD CORRECT PRACTICE:_____])
 - E2c. (Practice 3 is incorrect [RECORD CORRECT PRACTICE:_____])
98. (Don't know)
98. (Refused)

- E3. What activities have you identified to help improve energy performance in this building in the next six months? These could include all things related to energy such as capital purchases, capital improvements, operations and maintenance changes, training, certifications, other behavioral change efforts, and/or third-party service provider proposals/projects. **[DO NOT READ LIST; MULTIPLE RESPONSE]**
1. (None)
 2. (Efficient equipment)
 3. (Maintenance changes)
 4. (Trainings and certifications)
 5. (Energy tracking tools)
 6. (Installed or improved heating or cooling controls)
 7. (Other heating or cooling changes **[SPECIFY:_____]**)
 8. (Changed lighting timing; installed occupancy sensors)
 9. (Installed LED parking lot lights)
 10. (Other lighting projects **[SPECIFY:_____]**)
 11. (Other 1 **[SPECIFY 1:_____]**)
 12. (Other 2 **[SPECIFY 2:_____]**)
 13. (Other 3 **[SPECIFY 3:_____]**)
 14. (Other 4 **[SPECIFY 3:_____]**)
 15. (Other 5 **[SPECIFY 3:_____]**)
 98. (Don't know)
 99. (Refused)
- E4. Has your firm taken action to conduct outreach, education or to challenge tenants to improve energy performance?
1. (Yes)
 2. (No)
 98. (Don't know)
 99. (Refused)
- E5. We are aware that the Market Partner Program documents your energy management activities. Does someone at your building also document energy management activities internally? **[RECORD ALL THAT APPLY]**
1. (Yes, we document all the activities internally)
 2. (NEEA documented all the practices and shared their documentation with our company)
 3. (Something else **[SPECIFY:_____]**)
 98. (Don't know)
 98. (Refused)

[ASK IF E5 = 1]

E6. How did you or your colleagues document the activities? [DO NOT READ RESPONSES; RECORD ALL THAT APPLY]

1. (Email)
2. (Website)
3. (Newsletter)
4. (Company meeting)
5. (Quarterly report)
6. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

[ASK IF E5 = 1]

E7. Which of the following have you or your colleagues documented for your energy efficiency activities at this building? Let's start with ... [INSERT FIRST ITEM FROM LIST BELOW – E7a – E7f]. Has this been documented for all, most, some, or none of your energy efficiency activities? [READ LIST AND RECORD 1=all, 2=most, 3=some, 4=none; 96 FOR N/A, 98 FOR DON'T KNOW, 99 FOR REFUSED] [RANDOMIZE LIST]

- E7a. A list and description of planned energy efficiency activities
- E7b. The staffing resources that you or your organization will need to conduct the activity; staffing resources include anyone who will be planning or implementing the activities
- E7c. The training resources that you will need
- E7d. The capital resources that you will need
- E7e. The timeframe of planned projects
- E7f. The expected impacts and/or benefits of the energy efficiency activity

F. Allocation of Resources

Now we will talk about how your organization has allocated resources for improving energy performance.

[DO NOT ASK F1 IF THE RESPONDENT SAID THEY ARE THE ENERGY MANAGER OR ENERGY CHAMPION IN B4]

- F1. Are you or someone else at your building a designated “energy manager” or “energy champion”?
1. (Yes)
 2. (No)
 98. (Don’t know)
 99. (Refused)
- F2. Do you have an energy team that meets regularly or is energy discussed as part of other regular meetings such as operations or sustainability?
1. (Yes)
 2. (No)
 98. (Don’t know)
 99. (Refused)
- F3. I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in? [READ EACH AND RECORD 1 FOR YES, 2 FOR NO; 96 FOR N/A, 98 FOR DON’T KNOW, 99 FOR REFUSED] [RANDOMIZE LIST]
- F3a. Updating the Portfolio Manager account with monthly energy use (benchmarking)
 - F3b. Identifying opportunities to improve operations
 - F3c. Conducting nightwalks
 - F3d. Budgeting for capital improvements in the building
 - F3e. Engaging tenants in ways to save energy
 - F3f. Pursuing ENERGY STAR Certification
 - F3g. Measuring energy savings
 - F3h. Reporting on energy savings

- F4. Do you know if your company has allocated any additional resources for energy efficiency or energy management?
1. (Yes, our company allocates additional resources) **[ASK F4a]**
 - F4a. Please describe the additional resources allocated for energy efficiency.
[RECORD ANSWER]
 2. (No)
 98. (Don't know)
 99. (Refused)

G. Reviewing Progress

Now we're going to talk about reviewing progress toward your energy performance goal.

[SKIP IF D1=2, 98, 99]

- G1. Is progress toward your energy performance goal communicated to senior management on a regular basis?
1. (Yes)
 2. (No) **[SKIP TO NEXT SECTION]**
 3. (Plan to in the future) **[SKIP TO NEXT SECTION]**
 98. (Don't know) **[SKIP TO NEXT SECTION]**
 99. (Refused) **[SKIP TO NEXT SECTION]**

[SKIP IF D1=2, 98, 99]

- G2. How frequently are updates provided for management about the progress your building is making with regards to its energy performance? **[READ LIST IF NECESSARY]**
1. (Daily)
 2. (Weekly)
 3. (Monthly)
 4. (Quarterly)
 5. (Twice a year)
 6. (Annually)
 7. (Never provide updates)
 8. (Whenever they are needed; no set schedule or timeline)
 9. (Other **[SPECIFY: _____]**)
 98. (Don't know)
 99. Refused

[SKIP IF G2=7, 98, 99] [SKIP IF D1=2, 98, 99]

G3. How are these updates shared with the building? [RECORD ALL THAT APPLY]

1. (Email)
2. (Website)
3. (Mailing)
4. (Company meeting, presentation)
5. (Open house presentation)
6. (Budget report)
7. (Other [SPECIFY: _____])
98. (Don't know)
99. (Refused)

[SKIP IF G2=7, 98, 99] [SKIP IF D1=2, 98, 99]

G4. Which of the following items do updates for management include? Do they include ...
[READ LIST AND RECORD 1 FOR YES, 2 FOR NO, 97 FOR N/A, 98 FOR DON'T KNOW AND 99 FOR REFUSED] [RANDOMIZE LIST]

- G4a. [SKIP IF D1=2] An update about actual performance measured against the goal
- G4b. The effectiveness of each activity on improving energy performance
- G4c. Whether the staffing, training, or capital resources allocated were sufficient to perform the practice or reach the energy performance improvement goals for the building
- G4d. [SKIP IF D1=2] Changes to goals or metrics
- G4e. Progress updates on implementation of previously approved energy projects
- G4f. Presentation of proposed projects and their potential benefits, for approval by management

H. Participation Outcomes

- H1. Now I'd like to talk about current outcomes of your energy efficiency activities. Has your company improved its energy performance as much as expected?
1. (Yes)
 2. (No) **[ASK H1a]**
 - H1a. **[SKIP IF D1=2]** Are you on track to meet your energy performance goals?
 1. (Yes)
 2. (No)
 98. (Don't know)
 99. (Refused)
 98. (Don't know)
 99. (Refused)
- H2. How helpful do you think the planned activities in the BetterBricks scoping report have been in helping you improve your energy performance? Have they been ... **[READ LIST]**
1. Very helpful
 2. Somewhat helpful
 3. Not too helpful
 4. Not helpful at all
 98. (Don't know)
 99. (Refused)
- H3. Did you have enough staffing, training, and capital resources to improve your energy performance as much as you intended?
1. (Yes)
 2. (No)
 - H3a. Please explain which resources were less available than planned? **[IF NEEDED, STAFFING, TRAINING, CAPITAL RESOURCES , ANY OTHER?]**
 98. (Don't know)
 99. (Refused)

I. Program Delivery

NEEA encourages commercial buildings to adopt energy efficiency in a variety of ways. I would like to talk with you about some of these.

- I1. How familiar are you with Building Operator Certification training offered by NEEA?
 [IF NEEDED: The Building Operator Certification provides skill enhancement training to improve building energy performance through operation and maintenance best practices for HVAC, lighting, and controls systems.]
 1. (Very familiar)
 2. (Somewhat familiar)
 3. (Not too familiar)
 4. (Not at all familiar) [SKIP TO I4]
 98. (Don't know) [SKIP TO I4]
 99. (Refused) [SKIP TO I4]

- I2. Have you attended Building Operator Certification training offered by NEEA?
 1. (Yes)
 2. (No)
 - I2b. Are you aware of other staff at your company attending the NEEA training?
 1. (Yes) [SKIP TO I4]
 2. (No) [SKIP TO I4]
 98. (Don't know) [SKIP TO I4]
 98. (Don't know) [SKIP TO I4]
 99. (Refused) [SKIP TO I4]

- I3. What was the most valuable aspect of the Building Operator Certification training?
 1. [RECORD ANSWER]
 98. (Don't know)
 99. (Refused)

- I4. Have you attended other professional seminars and workshops offered by different organizations that you found helpful?
 1. (Yes)
 2. (No)
 98. (Don't know)
 99. (Refused)

15. What tools or seminars and workshops can NEEA offer to motivate building engineers, operators or facility managers to adopt energy management activities?
 1. [RECORD ANSWER]
 97. (None)
 98. (Don't Know)
 99. (Refused)

16. What tools or strategies should be included in the Market Partners Program to encourage more coordination between property managers and building engineers or operators?
 1. [RECORD RESPONSE]
 98. (Don't know)
 99. (Refused)

17. I'm going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in ...[INSERT EACH STATEMENT], would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable? [SCALE 1=Very valuable, 2=somewhat valuable, 3=not too valuable, 4=not at all valuable, 98=Don't know, 99=Refused; 96=N/A ROTATE a-g] [REPEAT SCALE AS NEEDED]
 - I7a. Portfolio Manager account set up and benchmarking support
 - I7b. Developing an action plan
 - I7c. [SKIP IF D1=2] Setting energy performance goals
 - I7d. Engineering coaching or training (one-on-one's or seminars)
 - I7e. Documenting energy-related activities taken
 - I7f. Measuring energy and cost savings
 - I7g. Reporting on progress
 - I7h. ENERGY STAR certification support

[ASK FOR EACH IN I7 THAT WERE >2]

18. Can you tell me the reasons you said that [INSERT ANSWERS FROM I7 THAT WERE >2] were not very valuable components of the program?

1. [RECORD ANSWER 1]
2. [RECORD ANSWER 2]
3. [RECORD ANSWER 3]
4. [RECORD ANSWER 4]
5. [RECORD ANSWER 5]
6. [RECORD ANSWER 6]
7. [RECORD ANSWER 7]
8. [RECORD ANSWER 8]
98. (Don't know)
99. (Refused)

J. Motivation and Assessing NEEA's Influence

J1. Did your company conduct any major building upgrades at [BUILDING NAME, ADDRESS] within the last two years ? These upgrades are not necessarily energy-related but could impact energy use.

1. (Yes) [ASK J1a]
 - J1a. Could you describe the type of upgrades? [RECORD ALL THAT APPLY]
 1. (Building size increased or decreased)
 2. (Remodeled floor)
 3. (Upgraded heating or cooling system)
 4. (Building shell updates; doors, windows, roof)
 5. (Cosmetic changes; carpet, paint)
 6. (Other [SPECIFY: _____])
 98. (Don't know)
 99. (Refused)
2. (No)
98. (Don't know)
99. (Refused)

- J2. Before participating in the Market Partners Program, how active was this building in managing energy? Would you say ... **[READ LIST AND RECORD ONE RESPONSE]**
1. Very active
 2. Somewhat active
 3. Not too active
 4. Not active at all
 98. (Don't know)
 99. (Refused)
- J3. Did this building participate in other utility-sponsored energy efficiency rebate programs *before* participating in NEEA's Market Partners Program?
1. (Yes)
 - J3a. What type of rebate program was it? **[READ LIST AND RECORD ALL RESPONSES]**
 1. Energy efficient equipment
 2. Energy assessment
 3. Renewable energy incentive
 4. Energy events and education
 5. (Other **[SPECIFY:_____]**)
 98. (Don't know)
 2. (No)
 98. (Don't know)
 99. (Refused)
- J4. What more would your company like to be doing to manage energy at this building?
1. **[RECORD ANSWER]**
 98. (Nothing more)
 98. (Don't know)
 99. (Refused)

K. Barriers and Benefits

Now I would like to talk with you specifically about the Market Partners Program's Strategic Energy Management practice. This is a business system for energy where companies commit to management-approved energy performance goals, plan actions to reach the goal(s), allocate resources towards the goal(s), and regularly report progress to management toward achieving the goal(s).

K1. What would you say are the main benefits to your organization resulting from your building's participation in the Market Partners Program? **[DON'T READ LIST AND SELECT ALL THAT APPLY]**

1. (Attractive to tenants; higher occupancy rate)
2. (Energy savings)
3. (Environmental benefits)
4. (Increased occupant comfort)
5. (Lower energy bill; saved money, reduced operating costs)
6. (Lower maintenance costs)
7. (Marketing benefits)
8. (Other **[SPECIFY:_____]**)
98. (Don't know)
99. (Refused)

K2. Are there any other benefits besides saving energy that you have seen from the program? **[IF NEEDED: for example, lower maintenance costs, or water savings]. [DO NOT READ LIST; RECORD ALL THAT APPLY]**

1. (No)
2. (Attractive to tenants; higher occupancy rate)
3. (Environmental benefits)
4. (Increased occupant comfort)
5. (Lower maintenance costs)
6. (Marketing benefits)
7. (Other **[SPECIFY:_____]**)
98. (Don't know)
99. (Refused)

K3. What would you say are the challenges to adopting Strategic Energy Management?

[DON'T READ LIST AND SELECT ALL THAT APPLY]

1. (Age/condition of building)
2. (Budget limitations)
3. (Not a high enough return on investment)
4. (Funding competition from other company priorities)
5. (High initial cost)
6. (Lack of staff time to dedicate to pursuing energy efficiency upgrades)
7. (Lack of technical knowledge about energy efficiency equipment)
8. (Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry)
9. (Long payback period)
10. (Other [SPECIFY:_____])
98. (Don't know)
99. (Refused)

[ASK IF K3 HAS MORE THAN ONE ANSWER]

K4. What do you see as the most significant challenge in adopting Strategic Energy Management? [RECORD ONE ANSWER; DO NOT READ LIST]

1. (Age/condition of building)
2. (Budget limitations)
3. (Not a high enough return on investment)
4. (Funding competition from other company priorities)
5. (High initial cost)
6. (Lack of staff time to dedicate to pursuing energy efficiency upgrades)
7. (Lack of technical knowledge about energy efficiency equipment)
8. (Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry)
9. (Long payback period)
10. (Other [SPECIFY:_____])
98. (Don't know)
99. (Refused)

K5. What could NEEA do to help your company overcome challenges to adopting Strategic Energy Management goals and practices?

1. [RECORD ANSWER]
2. (Nothing)
98. (Don't know)
99. (Refused)

L. Business Goals and Drivers

- L1. Please tell me how important the following items are to you when planning energy efficiency goals and practices. The first statement is [INSERT STATEMENT]. Is this very important, somewhat important, not very important, or not at all important when planning energy efficiency goals and practices? [RECORD 1 FOR VERY IMPORTANT, 2 FOR SOMEWHAT IMPORTANT, 3 FOR NOT VERY IMPORTANT, 4 FOR NOT AT ALL IMPORTANT, 97 FOR NOT APPLICABLE, 98 FOR DON'T KNOW, AND 99 FOR REFUSED] [RANDOMIZE LIST]
- L1a. Net operating incomes for property
 - L1b. Company cash flow
 - L1c. Asset value
 - L1d. Total cost of adopting energy efficiency
 - L1e. Marketing and brand positioning
 - L1f. Company profit
- L2. When considering energy efficiency projects, is your company's requirement for Return on Investment (ROI) less stringent, more stringent, or the same as for other capital investments?
- 1. (Less stringent)
 - 2. (More stringent)
 - 3. (The same)
 - 98. (Don't know)
 - 99. (Refused)
- L3. Does your building have a specific policy that says you should replace worn out equipment with high efficiency equipment?
- 1. (Yes)
 - 2. (No policy)
 - 3. (No, but we have an informal policy)
 - 98. (Don't know)
 - 99. (Refused)

M. Closing

- M1. Do you have any other feedback about the Market Partners Program that we can provide to NEEA?
- 1. [RECORD ANSWER]
 - 98. (Don't know)
 - 99. (Refused)

M2. *Thank you for your help. We appreciate your time and opinions. Before we end the call, may I get your name and address so that we know where to send the gift card.*

1. (Don't send card)
2. Enter first and last name
3. Enter street address
4. Enter city
5. Enter state
6. Enter 5 digit zip code
7. Did I reach you at [INSERT PHONE]? [Verify phone number in case we have any questions about the address]

The gift card will be mailed to the address you provided in the next several months.

We will follow up with you in the fall for some additional questions specifically about the activities you've implemented as a result of this program.

Appendix D. Office Competition Cohort Survey Frequencies

Appendix D: OC Survey Frequencies

Table 1. B1. “How long have you been with [COMPANY]?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Less than 1 year	-	-
1 to less than 3 years	-	6
3 to less than 5 years	1	1
More than 5 years	3	8
(Don't know)	-	-
(Refused)	-	-

Table 2. B1. “Is your title [TITLE]?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	2	11
No [SPECIFY]: Building Manager	-	1
No [SPECIFY]: Chief Engineer	-	2
No [SPECIFY]: Energy Specialist	1	-
No [SPECIFY]: Operations	1	-
No [SPECIFY]: Operations manager	-	1

Table 3. B3. “How long have you had the role of [TITLE]?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Less than 1 year	-	-
1 to less than 3 years	-	6
3 to less than 5 years	1	2
More than 5 years	3	7
(Don't know)	-	-
(Refused)	-	-

Table 4. B4. “How do your job duties relate to energy use at this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
As the asset property mgr. I make final decisions.	-	1
I am responsible for the building and oversee the maintained of the building.	-	1
I am the Energy Mgr. for the portfolio of 80 buildings	-	1
I make choices for equipment and schedules.	-	1
I manage for all reporting for energy use and usage of energy.	-	1
I manage the tenants manage engineers accounting and energy usage daily and weekly readings.	-	1
I'm responsible for all the energy programs	-	1
I'm responsible of making sure things are in control	-	1
Implement Energy Savings	-	1
Involved daily in utility use for the building.	1	-
Oversee in progress management team	-	1
Tasked with looking at current use of utility's and finding ways to save	-	1
Track energy use of all buildings	1	-
We control a lot of the lighting. We are striving to get energy efficiency out of our lamps and our equipment. We monitor how our equipment is running and if we can scale back we do it.	-	1
if control the budgets and all spending that occurs, also make recommendations to the ownership	-	1
if track it and make sure were performing	1	-
if try to save my tenants as much money as possible. That would be, in the area of power usage	1	-
my responsibility is to make sure the building is operating effeminately	-	1
responsible for management at the property	-	1
Energy manager or Energy Champion	-	1

Table 5. C1. “Now I would like to talk about energy management best practices. Could you please describe the key elements of energy management your company learned through participation in Kilowatt Crackdown competition?”

Response	Boise Frequency* (n=4)	Portland/Vancouver Frequency* (n=15)
Identifying energy performance improvement goals	1	8
Planning practices or activities to reach the goals	1	3
Allocating staff resources	-	2
Implementing activities or practices toward reaching the goals	1	4
Reporting progress to senior management	-	1
Other [SPECIFY]: Being aware of energy consumption overall throughout the whole building.	-	1
Other [SPECIFY]: Benchmarking	-	1
Other [SPECIFY]: More awareness of minor advantages versus major expenditures. You can make huge steps in energy savings with minor changes.	-	1
Other [SPECIFY]: We have always been doing it, it's not new to us.	1	-
Other [SPECIFY]: discharge error, occupancy rent, time killer occupation	-	1
Other [SPECIFY]: that would be, setbacks on hvac	1	-
Other [SPECIFY]: we did find deficiencies in some of the systems and did some of the things because we are leed platinum	1	-
I don't know what energy management is	-	-
(Don't know)	-	2
(Refused)	-	-

* Multiple responses allowed

Table 6. C2. “NEEA calls the combination of these five elements of energy management best practices strategic energy management. Have you heard the term strategic energy management before?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	2	11
No	2	4
(Don't know)	-	-
(Refused)	-	-

Table 7. C2a. “Where did you hear of it?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Energy Trust of Oregon	-	2
I do not remember.	-	1
In one of the trade magazines. No I don't know what one.	-	1
Through CORE	-	1
Through one of our contacts -we have multiple people that report to us from the different properties-one of the various engineers.	-	1
We did not, we have been implementing energy conservation for about 5 yr.	1	-
Conference 3 yr. ago. I don't remember who it was with.	-	1
from engineering firms	-	1
mostly in this practice with the kilowatt program	-	1
probably from boma and maybe an rpa class	-	1
through my involvement with kilowatt crackdown	-	1
with our lead	1	-
(Don't know)	-	-
(Refused)	-	-

Table 8. C3a. “To what extent is each of the energy management elements in place at your company? Is the identification and adoption of energy performance improvement goals fully in place, mostly in place, partly in place, or not in place?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Fully in place	-	4
Mostly in place	3	6
Partly in place	-	5
Not in place	1	-
Don't know	-	-
Refused	-	-

Table 9. C3b. “To what extent is each of the energy management elements in place at your company? Is the documentation of planned activities to reach the goals fully in place, mostly in place, partly in place, or not in place?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Fully in place	-	4
Mostly in place	3	4
Partly in place	-	4
Not in place	1	3
Don't know	-	-
Refused	-	-

Table 10. C3c. “To what extent is each of the energy management elements in place at your company? Is the allocation of staff resources and training or capital resources fully in place, mostly in place, partly in place, or not in place?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Fully in place	-	5
Mostly in place	1	5
Partly in place	2	4
Not in place	1	-
Don't know	-	1
Refused	-	-

Table 11. C3d. “To what extent is each of the energy management elements in place at your company? Is the ongoing implementation of activities or practices toward reaching the goals fully in place, mostly in place, partly in place, or not in place?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Fully in place	1	4
Mostly in place	2	7
Partly in place	-	4
Not in place	1	-
Don't know	-	-
Refused	-	-

Table 12. C3e. “To what extent is each of the energy management elements in place at your company? Is the reporting of progress to senior management fully in place, mostly in place, partly in place, or not in place?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Fully in place	2	8
Mostly in place	1	5
Partly in place	-	1
Not in place	1	1
Don't know	-	-
Refused	-	-

Table 13. C4. “Do you intend to fully implement the elements of energy management that you learned through the Kilowatt Crackdown?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=14)
Yes	2	12
No	1	-
(Don't know)	1	2
(Refused)	-	-

Table 14. C4a. “What elements will not be implemented?”

Response	Boise Frequency (n=1)	Portland/Vancouver Frequency (n=0)
Adoption of energy performance improvement goals	-	-
Documentation of planned activities to reach the goals	-	-
Allocating staff resources and training or capital resources	-	-
Implementing activities or practices toward reaching the goals	-	-
Reporting progress to senior management	-	-
(Don't know)	1	-

Table 15. C5. “What is preventing you from fully implementing the energy management practices at this building?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=2)
Both cost and return on investment.	-	1
if would say, lack of resources, because if don't have the staff power to put these in place	1	-
the design, I think were ahead of what they are recommending	1	-
they have already been done and in place	-	1
(Don't know)	-	-
(Refused)	-	-

Table 16. C6. “When do you plan to have fully implemented Strategic Energy Management?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=12)
Less than one year	1	2
One to two years	-	6
Two to five years	1	4
More than five years	-	-
(Don't know)	-	-
(Refused)	-	-

Table 17. C7. “Are you aware of energy management or energy efficiency activities happening at other commercial office buildings in your company?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	13
No	1	-
No, do not have other buildings	-	2
(Don't know)	-	-
(Refused)	-	-

Table 18. D1. “What is your building’s energy performance improvement goal to reduce energy use that was set through your participation in Kilowatt Crackdown?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
10%	-	1
2 to 5 %	-	1
30%	-	1
5%	-	1
6% reduction	-	1
Continue energy savings no specific %.	-	1
Fine tuning all equipment	-	1
Labor and Purchasing and supply's	1	-
Performing construction to eliminate area where energy is leaking and tenant tanning.	-	1
energy star 96%	-	1
our only goal is to survey the building to determine where we can actually save energy and so far we determined the ems system needs to be replaced	-	1
trying to go for LEED	-	1
we have done all of that. We have increased through energy star by 6 points	1	-
we want an energy star rating of 100%,currently it's at 99%	-	1
we would like to reduce at another 20%	-	1
We don't have a goal	2	-
(Don't know)	-	2
(Refused)	-	-

Table 19. D2. “When was this goal adopted and accepted by senior management?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=13)
1-2013	-	1
11-2013	-	1
2013	1	-
7 2012	-	1
9-2013	-	1
Aug 2012	-	1
August 2013	-	1
I think it was 2 years ago 2012	-	1
Oct 2013	-	1
april 13th since 2006	1	-
may of 2014	-	1
Has not been accepted by senior management	-	2
(Don't know)	-	2
(Refused)	-	-

Table 20. D3. “Have you set or adopted any other energy related goals because of your participation in Kilowatt Crackdown? Goals can be expressed as a percentage reduction or an absolute number compared to existing energy use. They can be expressed as an energy intensity reduction or through adoption of other systems such as LEED or ENERGY STAR.”

Response	Boise Frequency* (n=2)	Portland/Vancouver Frequency* (n=13)
Percentage reduction in energy use [SPECIFY:] 2%	-	1
Percentage reduction in energy use [SPECIFY:] working on higher wattage light to a smaller one-goal of 1% overall.		1
Absolute number reduction in energy used [SPECIFY:_____]	-	-
Energy intensity reduction [SPECIFY:_____]	-	-
LEED	-	2
ENERGY STAR®	2	3
Sustainability goals	-	-
Other [SPECIFY:] DDC System	-	1
Other [SPECIFY:] another 20 %		1
Other [SPECIFY:] to have all our buildings to be 75%.it's a point system we use to read our buildings		1
Other [SPECIFY:] upgraded energy management system-controls lighting		1
Other [SPECIFY:] Better tenant tanning, replace boilers	-	1
(Don't know)	-	4
(Refused)	-	-

* Multiple responses allowed

Table 21. D4. “What year did you set the goal?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=9)
2010	1	-
2011	1	-
2012	-	2
2013	-	5
2014	-	2
Before 2010	-	1
(Don't know)	-	1
(Refused)	-	-

Table 22. D5. “Has the goal been formally presented and accepted by senior management?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=13)
Yes, presented and accepted	1	11
Yes, presented only	1	1
No, haven't been presented or accepted	1	2
Other [SPECIFY:_____]	-	-
(Don't know)	-	-
(Refused)	-	-

Table 23. D6. “How were the goals documented for this building?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=13)
Already had in house comprehensive plan 6 yr.	1	-
ETO Energy Trust of Oregon. They told us to change the lights in the parking garage what to do diff lighting motion sensors lighting goes off saves money. Rebate program	-	1
Energy audit with vender in a quarterly report	-	1
Green efficiency policy's	-	1
Performance Score card system	-	1
Score Card by Project Bank	-	1
Strategic plan, Quarterly report	-	1
We have that in our budget which is our true way of measuring everything. I guess we document it in multiple places. One is budgeting, then track them through the portfolio manager once presented, then benchmarking is done which is mostly located in the	-	1
basically we did an energy star program	-	1
did an assessment and the goals were set from that	1	-
it's reported to our president	-	1
this would be in the budget	-	1
through a walk through to look at the outstanding issues	-	1
through the LEED process	-	1
Company didn't document; only NEEA documented the goals	-	1
(Don't know)	-	-
(Refused)	-	-

Table 24. D7. “Was the goal communicated to internal staff?”

Response	Boise Frequency* (n=2)	Portland/Vancouver Frequency* (n=13)
Yes	2	10
No	1	4
Other [SPECIFY:]		
partly due to staff changes	-	1
(Don't know)	-	-
(Refused)	-	1

* Multiple responses allowed

Table 25. D8. “Please tell me which ways the goal was communicated?”

Response	Boise Frequency* (n=2)	Portland/Vancouver Frequency* (n=10)
Email	-	4
Website	-	1
Mailing	1	-
Company meeting or presentation	2	7
Open house presentation	-	2
Budget report	-	1
Other [SPECIFY:] Score Card System	-	1
Other [SPECIFY:] personal conversations	-	1
(Don't know)	-	-
(Refused)	-	-

*Multiple responses allowed

Table 26. D9. “Has your firm communicated externally to investors, owners, tenants and others about your energy-related goals or accomplishments?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=13)
Yes	1	10
No	1	3
(Don't know)	-	-
(Refused)	-	-

Table 27. E1. “Your Project Bank action plan shows that you have planned or completed implementation of these practices or measures. Were [INSERT PRACTICE1, PRACTICE2, AND PRACTICE3] implemented?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=5)
Yes, all correct	3	3
No, Practice 1 incorrect [SPECIFY:] 100 yr. old building/ The way the building was designed was to breath through the cracks in the windows.	-	1
No, Practice 1 incorrect [SPECIFY:] the guy who did assessment didn't understand our system and how it was designed	1	-
No, Practice 2 incorrect [SPECIFY:] We replace them as tenants leave or renew lease.	-	1
No, Practice 3 incorrect [SPECIFY:]	-	-
(Don't know)	-	-
(Refused)	-	-

Table 28. E2. “What practices have you identified to help you reduce energy in this building in the next 6 months as a result of the Kilowatt Crackdown? These practices could include all things energy related such as capital purchases, capital improvements, operations and maintenance changes, training, certifications, other behavioral change efforts, and/or third-party service provider proposals/projects.”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
None	-	1
Efficient equipment	-	5
Maintenance changes	1	2
Trainings and certifications	-	2
Energy tracking tools	-	4
(Installed or improved heating or cooling controls	1	1
Other heating or cooling changes [SPECIFY:] the thermostats	-	1
Other heating or cooling changes [SPECIFY:] Stairway instead of elevators, encouraging computers be shut down over weekend	-	1
Other heating or cooling changes [SPECIFY:] some project studies	-	1
Other heating or cooling changes [SPECIFY:] DDC System	-	1
Other heating or cooling changes [SPECIFY:] Air loss due to stack effect	-	1
Other heating or cooling changes [SPECIFY:] Training occupants, we have done energy mgmt. for over 11 yr.	1	-
Other heating or cooling changes [SPECIFY:] Insulation of Cooling Tower	1	-
Other heating or cooling changes [SPECIFY:] mostly scheduling on air handlers and when exhaust fans need to run	1	-
Changed lighting timing; installed occupancy sensors)	1	1
Installed LED parking lot lights)	-	-
Other lighting projects [SPECIFY:]	-	-
Other 1 [SPECIFY :] system itemization	-	1
Other 1 [SPECIFY :] it's only the behavioral changes	-	1
(Don't know)	-	1
(Refused)	-	-

Table 29. E3. “Has your firm taken action to conduct outreach and education or challenge tenants to improve energy performance?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	9
No	1	6
(Don't know)	-	-
(Refused)	-	-

Table 30. E4. “We are aware that your Kilowatt Crackdown coach helped you document your plans through the Project Bank action plan. Does someone in your building also document energy management practices internally?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes, we document all the practices internally - includes using Portfolio Manager	4	10
NEEA documented all the practices and shared their documentation with our company	-	1
Something else [SPECIFY:]	-	-
(Don't know)	-	4
(Refused)	-	-

Table 31. E5. “Will you document practices and actions using the Project Bank action plan after Kilowatt Crackdown has ended?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
(Yes)	3	7
(No)	1	6
(Don't Know)	-	2
(Refused)	-	-

Table 32. E6a. “Which of the following have you or your organization documented for your energy reduction practices? Let’s start with a description of the energy reduction activity. Has this been documented for all, most, some, or none of your energy reduction practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=10)
All	2	4
Most	-	3
Some	-	2
None	2	1
N/A	-	-
Don't Know	-	-
Refused	-	-

Table 33. E6b. “Which of the following have you or your organization documented for your energy reduction practices? Let’s start with the staffing resources that your organization will need to conduct the practice; staffing resources include anyone who will be planning or implementing the practice. Has this been documented for all, most, some, or none of your energy reduction practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=10)
All	-	2
Most	1	3
Some	1	4
None	2	1
N/A	-	-
Don’t Know	-	-
Refused	-	-

Table 34. E6c. “Which of the following have you or your organization documented for your energy reduction practices? Let’s start with the training resources that your organization will need to support the practice. Has this been documented for all, most, some, or none of your energy reduction practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=10)
All	1	2
Most	-	1
Some	1	4
None	1	3
N/A	-	-
Don’t Know	1	-
Refused	-	-

Table 35. E6d. “Which of the following have you or your organization documented for your energy reduction practices? Let’s start with the capital resources that your organization will need. Has this been documented for all, most, some, or none of your energy reduction practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=10)
All	1	3
Most	-	1
Some	1	5
None	1	1
N/A	-	-
Don’t Know	1	-
Refused	-	-

Table 36. E6e. “Which of the following have you or your organization documented for your energy reduction practices? Let’s start with the timeframe for completion. Has this been documented for all, most, some, or none of your energy reduction practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=10)
All	1	2
Most	1	4
Some	-	2
None	1	2
N/A	1	-
Don’t Know	-	-
Refused	-	-

Table 37. E6f. “Which of the following have you or your organization documented for your energy reduction practices? Let’s start with the expected impacts and/or benefits of the practice. Has this been documented for all, most, some, or none of your energy reduction practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=10)
All	1	1
Most	1	4
Some	-	4
None	1	1
N/A	1	-
Don’t Know	-	-
Refused	-	-

Table 38. F1. “Is someone at your building a designated “energy manager” or “energy champion”?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=14)
Yes	2	10
No	2	4
(Don't know)	-	-
(Refused)	-	-

Table 39. F2. “Do you have an energy team that meets regularly?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	1	5
No	3	10
(Don't know)	-	-
(Refused)	-	-

Table 40. F3a. “Please tell me are you aware that staff are engaged in updating the Portfolio Manager account with monthly energy use (benchmarking), in this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	4	12
No	-	3
N/A	-	-
(Don't know)	-	-
(Refused)	-	-

Table 41. F3b. “Please tell me are you aware that staff are engaged in identifying opportunities to improve operations, in this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	4	15
No	-	-
N/A	-	-
(Don't know)	-	-
(Refused)	-	-

Table 42. F3c. “Please tell me are you aware that staff are engaged in conducting nightwalks, in this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	2	12
No	2	3
N/A	-	-
(Don't know)	-	-
(Refused)	-	-

Table 43. F3d. “Please tell me are you aware that staff are engaged in budgeting for capital improvements in the building, in this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	13
No	1	2
N/A	-	-
(Don't know)	-	-
(Refused)	-	-

Table 44. F3e. “Please tell me are you aware that staff are engaged in engaging tenants in ways to save energy, in this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	9
No	1	6
N/A	-	-
(Don't know)	-	-
(Refused)	-	-

Table 45. F3f. “Please tell me are you aware that staff are engaged in pursuing ENERGY STAR Certification, in this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	13
No	1	2
N/A	-	-
(Don't know)	-	-
(Refused)	-	-

Table 46. F3g. “Please tell me are you aware that staff are engaged in measuring energy savings, in this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	14
No	1	1
N/A	-	-
(Don't know)	-	-
(Refused)	-	-

Table 47. F3h. “Please tell me are you aware that staff are engaged in reporting on energy savings, in this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	13
No	1	2
N/A	-	-
(Don't know)	-	-
(Refused)	-	-

Table 48. F4. “Are you aware of whether there are any additional resources allocated for energy efficiency or energy management, other than what we’ve already discussed?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	2	6
No	2	9
(Don't know)	-	-
(Refused)	-	-

Table 49. F4a. “Please describe the additional resources allocated for energy efficiency.”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=6)
Energy Trust for improvements.	-	1
Lighting changes more modern lights with less usage.	-	1
Networking anything we may need we can find on the internet.	1	-
Operation and maintained funds.	-	1
Project Bank - controls on lighting - change and upgrade lighting and heat pumps, Behavioral operating hrs.	-	1
Survey by energy trust , Energy management upgrade	-	1
The energy 350 group is looking at whole building for improvements and adding it to the competition.	-	1
we participate in the incentives that Idaho power has	1	-

Table 50. F5. “What are the reasons your company hasn’t allocated resources for energy reduction at this building?”

Response	Boise Frequency (n=1)	Portland/Vancouver Frequency (n=2)
because of the cost	-	1
because we just spent 300 thousand on a smoke evacuation system	1	-
they go to the public utilities. we are a federal agency and get our funding from congress	-	1
(Don't know)	-	-
(Refused)	-	-

Table 51. G1. “Is progress toward your goal communicated to senior management on a regular basis?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	2	11
No	1	4
Plan to in the future	-	-
(Don't know)	-	-
(Refused)	1	-

Table 52. G2. “How frequently are updates provided for management about the progress your building is making in reducing energy use?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Daily	-	-
Weekly	-	-
Monthly	1	6
Quarterly	1	4
Twice a year	-	-
Annually	-	1
Never provide updates	-	-
Whenever they are needed; no set schedule or timeline	-	-
Other [SPECIFY:_____]	-	-
(Don't know)	-	-
(Refused)	-	-

Table 53. G3. “How are these updates shared with the building management team?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Email	-	4
Website	-	-
Mailing	-	-
Company meeting, presentation	1	4
Open house presentation	-	-
Budget report	-	2
Other [SPECIFY:] By Publication (Narius)	1	2
Other [SPECIFY:] monthly reports		
Other [SPECIFY:] performance score card system		
(Don't know)	-	1
(Refused)	-	-

Table 54. G4a. “Which of the following items do the updates for management include? Do they include an update about actual performance measured against the goal?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Yes	2	7
No	-	3
N/A	-	1
Don't Know	-	-
Refused	-	-

Table 55. G4b. “Which of the following items do the updates for management include? Do they include the effectiveness of each activity on reducing energy?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Yes	1	9
No	1	1
N/A	-	1
Don't Know	-	-
Refused	-	-

Table 56. G4c. “Which of the following items do the updates for management include? Do they include whether the staffing, training, or capital resources allocated were sufficient to perform the practice or reach the energy reduction goals for the building?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Yes	2	8
No	-	2
N/A	-	1
Don't Know	-	-
Refused	-	-

Table 57. G4d. “Which of the following items do the updates for management include? Do they include changes to goals or metrics?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Yes	1	8
No	1	2
N/A	-	1
Don't Know	-	-
Refused	-	-

Table 58. G4e. “Which of the following items do the updates for management include? Do they include progress updates on implementation of previously approved energy projects?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Yes	2	10
No	-	1
N/A	-	-
Don't Know	-	-
Refused	-	-

Table 59. G4f. “Which of the following items do the updates for management include? Do they include presentation of proposed projects and their potential benefits, for approval by management?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=11)
Yes	2	11
No	-	-
N/A	-	-
Don't Know	-	-
Refused	-	-

Table 60. H1. “Now I'd like to talk about current outcomes of your energy efficiency action plan. Has your building reduced its energy consumption as much as expected?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	11
No	-	3
(Don't know)	1	1
(Refused)	-	-

Table 61. H1a. “Are you on track to meet your energy performance goals?”

Response	Boise Frequency (n=0)	Portland/Vancouver Frequency (n=3)
Yes	-	3
No	-	-
(Don't know)	-	-
(Refused)	-	-

Table 62. H2. “How helpful do you think the planned practices identified through the Kilowatt Crackdown have been in helping you reduce energy usage?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very helpful	1	8
Somewhat helpful	2	5
Not too helpful	1	-
Not helpful at all	-	2
(Don't know)	-	-
(Refused)	-	-

Table 63. H3. “Did you have enough staffing, training, and capital resources to reduce energy use as much as you intended during your participation in Kilowatt Crackdown?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	4	11
No	-	4
(Don't know)	-	-
(Refused)	-	-

Table 64. H3a. “Please explain which resources were less available than planned”

Response	Boise Frequency (n=0)	Portland/Vancouver Frequency (n=4)
Capital	-	2
Finances	-	1
Maintained techs that had to do the evaluations.	-	1

Table 65. H4. “Do you revisit your plan to reduce energy use on a regular basis, or update it when changes are needed?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Regular basis	1	6
Update as needed	2	9
(Don't know)	1	-
(Refused)	-	-

Table 66. I1a. “Thinking about your overall experience with program support in assistance with Portfolio Manager account, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very valuable	1	5
Somewhat valuable	2	8
Not too valuable	-	1
Not at all valuable	1	-
N/A	-	1
Don't know	-	-
Refused	-	-

Table 67. I1b. “Thinking about your overall experience with program support in assistance with benchmarking, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very valuable	1	6
Somewhat valuable	-	7
Not too valuable	1	-
Not at all valuable	1	2
N/A	1	-
Don’t know	-	-
Refused	-	-

Table 68. I1c. “Thinking about your overall experience with program support in technical scoping walkthrough, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very valuable	-	8
Somewhat valuable	2	5
Not too valuable	1	-
Not at all valuable	-	-
N/A	1	2
Don’t know	-	-
Refused	-	-

Table 69. I1d. “Thinking about your overall experience with program support in developing an action plan, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very valuable	1	8
Somewhat valuable	1	5
Not too valuable	1	-
Not at all valuable	1	1
N/A	-	1
Don’t know	-	-
Refused	-	-

Table 70. I1e. “Thinking about your overall experience with program support in setting an energy performance goal, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very valuable	-	5
Somewhat valuable	1	7
Not too valuable	2	2
Not at all valuable	-	-
N/A	1	1
Don’t know	-	-
Refused	-	-

Table 71. I1f. “Thinking about your overall experience with program support in engineering coaching, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very valuable	-	7
Somewhat valuable	1	4
Not too valuable	2	3
Not at all valuable	-	-
N/A	1	1
Don’t know	-	-
Refused	-	-

Table 72. I1g. “Thinking about your overall experience with program support in documenting energy-related activities taken, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very valuable	1	5
Somewhat valuable	1	9
Not too valuable	2	-
Not at all valuable	-	-
N/A	-	1
Don’t know	-	-
Refused	-	-

Table 73. I1h. “Thinking about your overall experience with program support in communicating goals and accomplishments with owners or external stakeholders, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very valuable	1	8
Somewhat valuable	1	5
Not too valuable	1	1
Not at all valuable	-	-
N/A	1	1
Don't know	-	-
Refused	-	-

Table 74. I2a. “Can you tell me the reasons you said that the competition’s assistance with assistance with Portfolio Manager account were not very valuable?”

Response	Boise Frequency (n=1)	Portland/Vancouver Frequency (n=1)
We were already doing this before the competition.	1	-
well if didn't get a hold of assistance and it was more of a hassle than anything	-	1
Don't know	-	-
Refused	-	-

Table 75. I2b. “Can you tell me the reasons you said that the competition’s assistance with assistance with benchmarking were not very valuable?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=2)
Because I already do it, and have done it for some time.	1	-
We already have a process in place.	1	-
if didn't get any assistance	-	1
there wasn't anything else we could do that wasn't done already	-	1
Don't know	-	-
Refused	-	-

Table 76. I2c. “Can you tell me the reasons you said that the competition’s assistance with technical scoping walkthrough were not very valuable?”

Response	Boise Frequency (n=1)	Portland/Vancouver Frequency (n=0)
We have Technicians on sight that knew more about our equipment than your techs It is specialized equipment.	1	-
Don't know	-	-
Refused	-	-

Table 77. I2d. “Can you tell me the reasons you said that the competition’s assistance with developing an action plan were not very valuable?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=1)
Again we have one in place already.	1	-
because I'm to busy	1	-
we didn't developed an action, we didn't find that we needed to make improvements, we just bench marked	-	1
Don't know	-	-
Refused	-	-

Table 78. I2e. “Can you tell me the reasons you said that the competition’s assistance with setting an energy performance goal were not very valuable?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=2)
It is a standard practice we, already have been doing these things.	1	-
There should not be a limit we should always strive to get better than we are now. Not just stop at a goal.	-	1
again if just don't have the time	1	-
we were already exceeding previous goals by 70%	-	1
Don't know	-	-
Refused	-	-

Table 79. I2f. “Can you tell me the reasons you said that the competition’s assistance with engineering coaching were not very valuable?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=3)
Allot of it we already addressed.	-	1
I'm not aware of any engineering coaching available	-	1
They were not familiar with the equipment, It is specialized.	1	-
our building was not really suited to the competition	-	1
the engineer did not understand our applications and did not like them	1	-
Don't know	-	-
Refused	-	-

Table 80. I2g. “Can you tell me the reasons you said that the competition’s assistance with documenting energy-related activities taken were not very valuable?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=0)
We were already doing this.	1	-
because if don't have the time to do anything with it	1	-
Don't know	-	-
Refused	-	-

Table 81. I2h. “Can you tell me the reasons you said that the competition’s assistance with communicating goals and accomplishments with owners or external stakeholders were not very valuable?”

Response	Boise Frequency (n=1)	Portland/Vancouver Frequency (n=1)
Something we had already done.	-	1
We are owner and occupant, so we know.	1	-
Don’t know	-	-
Refused	-	-

Table 82. I3. “Have you attended other professional seminars and workshops on energy management offered by different organizations that you found helpful?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	1	14
No	3	1
(Don't know)	-	-
(Refused)	-	-

Table 83. I4. “What tools provided by Kilowatt Crackdown were most useful in understanding and reducing energy use?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Benchmarking	-	1
Energy Trust of Organ	-	1
I don't know, I guess the night walk and access to the expertise knowledge.	1	-
I would say the carbon study that they had given us for additional savings.		
The carbon force study that they had done to reduce and make your building more efficient. Just seeing how much consumption you have every month and seeing if we can monitor that and re	-	1
None, nothing was new.	1	-
Project Bank	-	1
Seminars with online inputting data to figure out what building looks like, and how it could be improved.	-	1
Sight Survey	-	1
The building survey and suggestions from consultant.	-	1
The building walk that was provided.	-	1
The night walks with the energy engineer were most useful.	-	1
The expert that came through and identified items that could save energy. (he was most helpful)	-	1
if think just going through the goals and following up on them, items that were identified	1	-
if would think the program to input energy was most helpful	-	1
(Don't know)	-	2
(Refused)	-	-

Table 84. I5. “What other tools or seminars and workshops can NEEA, BOMA, your utility or the City offer to help you adopt energy management practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Benchmarking sharing lessons learned. Case studies.	-	1
Energy Trust of Oregon, rebates offered to us, and they did a survey of building on the estimated cost and pay backs.	-	1
How to understand current technology to decide what is the best way to save.(Someone to interrupt)	-	1
I think it would be just basic seminars on lighting savings. Lighting is continually changing. Studies for each individual building like the carbon force study they had done. They helped with making a project bank for us to look at this, this and this. W	-	1
Idaho power & Intermountain Gas and safety training	1	-
It would be nice for the utility to provide data feeds for portfolio mgr.	1	-
Maintenance best practices and also with behavioral practices.	-	1
More Seminars on lighting reduction.	-	1
More value reacted incentives, Monetary value incentives.	-	1
Ongoing Programs.	-	1
maybe a seminar on lighting because its changing, solar power	-	1
(None)	1	4
(Don't know)	1	2
(Refused)	-	-

Table 85. J1. “What motivated your company to participate in Kilowatt Crackdown?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
BOMA recommended it	-	2
Peers recommended it	-	1
To meet our energy performance goals	-	2
Save energy and money	1	4
Equipment manufacturer or distributor recommended it	-	-
Reduce maintenance costs	-	1
Recommended by an energy audit	-	-
Receive tax incentives or rebates	-	-
Recommended by local utility or energy efficiency organization	1	-
Other [SPECIFY:] By our Higher Council they asked us to.	1	-
Other [SPECIFY:] Getting recognition for the practices we have in place on behalf of the team and client	-	1
Other [SPECIFY:] Jack Davis with JDM Associates	-	1
Other [SPECIFY:] just told we were going to be in it	-	1
Other [SPECIFY:] most of the buildings in done did it and we decided we should participate because it was the right thing to do	1	-
Other [SPECIFY:] one of our tenants wanted to do it	-	1
Other [SPECIFY:] reducing carbon emission in the environment	-	1
Other [SPECIFY:] trying to look attractive to the tenants by being green	-	1
(Don't know)	-	2
(Refused)	-	-

Table 86. J2. “Did your company conduct any major building upgrades at [BUILDING NAME, ADDRESS] within the last two years? These upgrades are not necessarily energy-related but could impact energy use.”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	3	9
No	1	6
(Don't know)	-	-
(Refused)	-	-

Table 87. J2a. “Could you describe the type of upgrades?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Building size increased or decreased	-	1
Remodeled floor	-	-
Upgraded heating or cooling system	1	3
Building shell updates; doors, windows, roof	1	-
Cosmetic changes; carpet, paint	-	-
Solar PV system	-	-
Other [SPECIFY:] Mechanical up grades and programing building automation sys program.	-	1
Other [SPECIFY:] Replaced gas boilers to high efficiency.	-	1
Other [SPECIFY:] Upgrade t-12 to t-8 and added energy sensors to premotor offices. Step Ballast from 50 to 100%	-	1
Other [SPECIFY:] Put in a new energy management system.	-	1
Other [SPECIFY:] smoke evacuation system	1	-
Other [SPECIFY:] the water system pump	1	-
Other [SPECIFY:] we replaced the lobby light fixtures with led's, replaced stairwell lighting in the garage	-	1
Other [SPECIFY:] Cooling tower, reroofed 80 % done, installed aerators in sink areas , smoke gaskets on 60% doorways, installed kits for new lighting.	-	1
(Don't know)	-	-
(Refused)	-	-

Table 88. J3. “Before participating in Kilowatt Crackdown, how active was this building in managing energy?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very active	2	10
Somewhat active	1	4
Not too active	1	-
Not active at all	-	-
(Don't know)	-	1
(Refused)	-	-

Table 89. J4. “Did your building participate in other utility sponsored energy efficiency programs before participating in Kilowatt Crackdown?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	2	6
No	2	9
(Don't know)	-	-
(Refused)	-	-

Table 90. J4a. “What type of program was it?”

Response	Boise Frequency (n=2)	Portland/Vancouver Frequency (n=6)
Energy efficient equipment	2	-
Energy assessment	-	-
Renewable energy incentive	-	-
Energy events and education	-	-
Other [SPECIFY:] Better Bricks-if can't remember what type of program it was because if only recently took this program over.	-	1
Other [SPECIFY:] Energy Trust of Oregon	-	1
Other [SPECIFY:] Energy Trust of Organ	-	1
Other [SPECIFY:] Not sure cannot remember.	-	1
Other [SPECIFY:] LEED program	-	1
Other [SPECIFY:] Participating in upgrading lighting and windows	-	1
Other [SPECIFY:] The reclaimed water system	1	-
(Don't know)	-	-
(Refused)	-	-

Table 91. J5. “How many of the projects implemented with the assistance of the Kilowatt Crackdown team do you think would have been implemented in the absence of this competition? Would you say all, most, some, or none of the projects?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
All	-	1
Most	1	3
Some	-	7
None	3	4
(Don't know)	-	-
(Refused)	-	-

Table 92. J6. “What are your reasons for saying that?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Because of the rebates and review of buildings and knowledge of them.	-	1
Because we already had a plan in place.	-	1
Being part of the company we put the company focus on that building and made it a priority.	1	-
I think it was just awareness. They brought to light a few things that we may not have noticed or received had they not provided the reports with the backup data to show us if we do this we can reduce our electrical use by this.	-	1
Our own staff didn't know of any other ways they thought they had exhausted them all.	-	1
Some of them we had planned to do, and the others were brought to our attention by our engineer.	-	1
The building is very energy efficient without the attention of day or night walks we would not have evaluated it.	-	1
They were already implemented.	1	-
We are striving to be an energy efficiency co.	-	1
We had addressed some of the issues. They just reaffirmed our assessment.	-	1
We had already been working to get Leed certified, with Green building services	-	1
We were only aware of some.	-	1
because there were a reminder to work on the energy consumption	-	1
because we didn't do any of the projects	-	1
because we keep trying to improve what we have already	1	-
if didn't know about the items they educated me on	1	-
it helps focus people on the energy	-	1
the building is fairly new and is already energy officiate	-	1
were mandated by executive order because we are a federal organization	-	1

Table 93. J7. “What more would your company like to be doing to manage energy at this building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Boiler that needs to be changed out. And seeking further advice.	-	1
Continue to find good programs.	-	1
I would just like to continue upgrading our lighting. That is probably one or our larger consumption areas.	-	1
Light Controls	-	1
Sub metering	-	1
To have a Building automation system	1	-
To have more analytics energy wise.	-	1
Update lighting retrofitting	-	1
better documentation	-	1
chiller change out	-	1
having a new ems would be a start	-	1
we would like to implement some of the things, but nothing in particular	1	-
(Nothing more)	1	3
(Don't know)	1	2
(Refused)	-	-

Table 94. K1. “What would you say are the main benefits to your organization resulting from the Kilowatt Crackdown activities?”

Response	Boise Frequency* (n=4)	Portland/Vancouver Frequency* (n=15)
Attractive to tenants; higher occupancy rate	-	1
Energy savings	1	5
Environmental benefits	-	1
Increased occupant comfort	-	-
Lower energy bill; saved money, reduced operating costs	-	2
Lower maintenance costs	-	2
Marketing benefits	-	-
Other [SPECIFY:] Benchmarking	-	1
Other [SPECIFY:] Community Awareness	1	-
Other [SPECIFY:] Earn Energy Starr	1	-
Other [SPECIFY:] Identify things missed by our staff.	-	1
Other [SPECIFY:] It made us aware.	-	1
Other [SPECIFY:] Project Bank	-	1
Other [SPECIFY:] Employee morale and people felt more positive	-	1
Other [SPECIFY:] Everyone that participates now recognizes liberty center	-	1
Other [SPECIFY:] Giving us the overall data on how to reduce our energy use	-	1
Other [SPECIFY:] Got some exposure to the industry	-	1
Other [SPECIFY:] Helped identify areas that needed attention and made us implement them	1	-
Other [SPECIFY:] Just publicity	-	1
Other [SPECIFY:] Performance as well	-	1
(Don't know)	-	-
(Refused)	-	-

* Multiple responses allowed

Table 95. K2. “Are there any other benefits besides saving energy that you have seen from participating in the Kilowatt Crackdown?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
No	2	4
Attractive to tenants; higher occupancy rate	-	2
Environmental benefits	-	-
Increased occupant comfort	-	-
Lower maintenance costs	-	1
Marketing benefits	-	1
Other [SPECIFY:] Gas, Water, Electrical, savings	-	1
Other [SPECIFY:] Lighting LED maintenance, cost of changing bulbs don't have to do it as often.	-	1
Other [SPECIFY:] Water Energy	-	1
Other [SPECIFY:] Establishing the value through group effort	-	1
Other [SPECIFY:] lower utility cost	-	1
Other [SPECIFY:] water savings	-	1
Other [SPECIFY:] we saved because we set the system better schedules	1	-
(Don't know)	1	1
(Refused)	-	-

Table 96. K3. “What would you say are the challenges to implementing the activities in the project bank?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Age/condition of building	-	-
Budget limitations	1	4
Not a high enough return on investment	-	1
Funding competition from other company priorities	-	-
High initial cost	1	3
Lack of staff time to dedicate to pursuing energy efficiency upgrades	-	2
Lack of technical knowledge about energy efficiency equipment	-	1
Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry	-	-
Long payback period	-	1
Other [SPECIFY:] Tenant perception if it is safe. Like the lights in the parking garage they don't come on till motioned. (Getting tenants to perceive it as safe.)	-	1
Other [SPECIFY:] Tennant participation	-	1
Other [SPECIFY:] convincing the owners to spend money	-	1
Other [SPECIFY:] discipline in documenting and being consistent in the energy role	-	1
Other [SPECIFY:] they can't improve my energy	-	1
Other [SPECIFY:] time to get it completed in the time frame	1	-
Other [SPECIFY:]	-	1
Other [SPECIFY:] time	1	-
(Don't know)	1	2
(Refused)	-	-

Table 97. K4. “What do you see as the most significant challenge in implementing the activities in the project bank?”

Response	Boise Frequency (n=1)	Portland/Vancouver Frequency (n=4)
Age/condition of building	-	-
Budget limitations	-	-
Not a high enough return on investment	-	-
Funding competition from other company priorities	-	-
High initial cost	1	1
Lack of staff time to dedicate to pursuing energy efficiency upgrades	-	1
Lack of technical knowledge about energy efficiency equipment	-	-
Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry	-	-
Long payback period	-	-
Other [SPECIFY:] Getting funding allocated.	-	1
Other [SPECIFY:] Replacing the entire energy management system.- \$400,000 project-convincing senior management that it is a necessary item.	-	1
(Don't know)	-	-
(Refused)	-	-

Table 98. K5a. “Please tell me the extent of assistance you received from Kilowatt Crackdown in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with strategic Energy Management resources, approaches, or tools tailored to commercial office buildings?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
A lot of assistance	-	3
Some assistance	1	5
Little assistance	1	4
No assistance	2	3
(Don't know)	-	-
(Refused)	-	-

Table 99. K5b. “Please tell me the extent of assistance you received from Kilowatt Crackdown in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with a cost-effective system to track and manage energy for a whole building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
A lot of assistance	-	2
Some assistance	1	8
Little assistance	1	2
No assistance	2	3
(Don't know)	-	-
(Refused)	-	-

Table 100. K5c. “Please tell me the extent of assistance you received from Kilowatt Crackdown in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with communicating and promoting successes with Strategic Energy Management?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
A lot of assistance	-	3
Some assistance	1	9
Little assistance	-	1
No assistance	3	2
(Don't know)	-	-
(Refused)	-	-

Table 101. K5d. “Please tell me the extent of assistance you received from Kilowatt Crackdown in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with training staff to implement energy reduction practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
A lot of assistance	-	4
Some assistance	1	7
Little assistance	1	2
No assistance	2	2
(Don't know)	-	-
(Refused)	-	-

Table 102. K6. “What could NEEA, BOMA, your utility or the City do to help your company overcome challenges to adopting Strategic Energy Management goals and practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Continue to provide education and provide best practices.	-	1
Energy Trust and more Funds	-	1
Have publication of local benchmarks for buildings in our area.	-	1
Having a resource for an audit, or expert that can audit what is in place and give us referrals.	-	1
I would like to see more incentives from the energy trust for retrofitting-when we retro fit our lighting our equipment. More education on what some best energy practices out there. I know there are a few but I would like to see more of them. More o	-	1
It is more internal to us, we need more money and manpower. I think Need is doing what they can.	-	1
More funds, rebates.	1	-
organizations like the energy trust of Oregon provides information of the organizations that are out there	-	1
share lessons learned and benchmarking	-	1
(Nothing)	3	5
(Don't know)	-	2
(Refused)	-	-

Table 103. L1a. “Please tell me how important the following items are to you when planning energy efficiency goals and practices. The first statement is property cash flow. Is this very important, somewhat important, not very important, or not at all important when planning energy efficiency goals and practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very important	2	10
Somewhat important	1	1
Not very important	-	1
Not at all important	-	1
N/A	1	2
Don’t know	-	-
Refused	-	-

Table 104. L1b. “Please tell me how important the following items are to you when planning energy efficiency goals and practices. The first statement is company cash flow. Is this very important, somewhat important, not very important, or not at all important when planning energy efficiency goals and practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very important	3	11
Somewhat important	-	3
Not very important	-	-
Not at all important	-	-
N/A	1	1
Don’t know	-	-
Refused	-	-

Table 105. L1c. “Please tell me how important the following items are to you when planning energy efficiency goals and practices. The first statement is asset value. Is this very important, somewhat important, not very important, or not at all important when planning energy efficiency goals and practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very important	2	8
Somewhat important	2	5
Not very important	-	1
Not at all important	-	-
N/A	-	1
Don’t know	-	-
Refused	-	-

Table 106. L1d. “Please tell me how important the following items are to you when planning energy efficiency goals and practices. The first statement is total cost of adopting energy efficiency activities. Is this very important, somewhat important, not very important, or not at all important when planning energy efficiency goals and practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very important	2	10
Somewhat important	1	4
Not very important	-	-
Not at all important	1	1
N/A	-	-
Don’t know	-	-
Refused	-	-

Table 107. L1e. “Please tell me how important the following items are to you when planning energy efficiency goals and practices. The first statement is marketing and brand positioning. Is this very important, somewhat important, not very important, or not at all important when planning energy efficiency goals and practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very important	1	5
Somewhat important	-	8
Not very important	-	1
Not at all important	3	1
N/A	-	-
Don’t know	-	-
Refused	-	-

Table 108. L1f. “Please tell me how important the following items are to you when planning energy efficiency goals and practices. The first statement is company profit. Is this very important, somewhat important, not very important, or not at all important when planning energy efficiency goals and practices?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Very important	2	7
Somewhat important	-	5
Not very important	-	2
Not at all important	-	-
N/A	2	1
Don’t know	-	-
Refused	-	-

Table 109. L2. “When considering energy efficiency projects, is your company’s requirement for Return on Investment (ROI) less stringent, more stringent, or the same as for other capital investments?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Less stringent	-	4
More stringent	2	3
The same	1	8
(Don't know)	1	-
(Refused)	-	-

Table 110. L3. “Does your building have a specific policy that says you should replace worn out equipment with high efficiency equipment?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	2	9
No policy	2	2
No, but we have an informal policy	-	4
(Don't know)	-	-
(Refused)	-	-

Table 111. M1. “Does your company own, manage, or both own and manage the property?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Owns only - does not manage	-	-
Manages only - does not own	1	6
Owns and manages property	3	9
Other [SPECIFY:]	-	-
(Don't know)	-	-
(Refused)	-	-

Table 112. M2. “How would you describe the use of space in the building?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
All office space	1	4
Mostly office space	1	6
Office and retail space	1	4
Mostly retail space	-	-
Something else [SPECIFY:] health care, higher education, and retail	-	1
Something else [SPECIFY:] mostly office with some retail	1	-
(Don't know)	-	-
(Refused)	-	-

Table 113. M3. “When was this building built?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
1970 or before	2	6
1980s	-	3
1990s	-	2
2000s	1	2
2010 or after	1	2
(Don't know)	-	-
(Refused)	-	-

Table 114. N1. “Do you have any other feedback about Kilowatt Crackdown that we can provide to the program team?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Do it again in a few years.	-	1
I think it is a great program it is coming in to its own, Hot Topic.	-	1
It was an extraordinary value of my time and training and more than positive results.	-	1
More of the studies and the follow-up on the studies in the project banks.	-	1
Project Bank- To have more follow up with (rather do one study have several study's avail)	-	1
The survey is a good idea but way to long.	-	1
Very helpful and easy.	-	1
We never received the Energy Star Certification. The Engineer requested information to get us certified we gave it to him and that was the last we heard of we never got our certification for Energy Star.?	-	1
no	-	2
thank you to everybody for their team effort	-	1
that the survey is far too long	1	-
the coach did a great job	1	-
they did an excellent job, stuck with us and were consistent and a good coaching team	-	1
(Don't know)	-	-
(Refused)	-	-

Table 115. N2. “The program team would like to follow up with you later this year to support implementation of your Project Bank and energy savings. Would that be acceptable?”

Response	Boise Frequency (n=4)	Portland/Vancouver Frequency (n=15)
Yes	1	13
No	3	2
(Don't know)	-	-
(Refused)	-	-

Appendix E. Market Partners Program Firm-Level Survey Frequencies

Appendix E: MPP Firm Survey Frequencies

Table 1. Question B1: “How long have you been with [COMPANY]?”

Response	Frequency (n=9)
Less than 1 year	-
1 to less than 3 years	1
3 to less than 5 years	1
More than 5 years	7
Don't know	-
Refused	-

Table 2. Question B2: “Our records show your role is [TITLE]. Is this correct?”

Response	Frequency (n=9)	B2a What is your role at the company? (n=1)
Yes	8	N/A
No	1	Vice President
Don't know	-	-
Refused	-	-

Table 3. Question B3: “How long have you had the role of [TITLE]?”

Response	Frequency (n=9)
Less than 1 year	-
1 to less than 3 years	3
3 to less than 5 years	2
More than 5 years	4
Don't know	-
Refused	-

Table 4. Question B4: “How do your job duties relate to energy performance at this company?”

Response	Frequency (n=9)
I am the person to implement energy saving throughout the portfolio	1
I monitor all energy consumption	1
I work with our property management we manage building I work with them to implement energy management and changes to our buildings	1
In charge of sustainability for business	1
Manage property and reduce energy cost	1
Oversee all property and energy for property	1
Oversee commercial mgmt division for 9 properties, manager's report to me for efficiency and energy control	1
Prop Manager for Building	1
Responsible for energy efficiency, implementation of energy efficiency	1

Table 5. Question C1 “I would like to talk about Strategic Energy Management. In your words, could you please describe the key elements of Strategic Energy Management?”

Response	Frequency* (n=9)
Identifying energy performance improvement goals	5
Documentation of planned activities to reach the goals	6
Allocating staff or training or capital resources	1
Implementing activities toward reaching the goals	6
Reporting progress to senior management	-
Other: Identify usage, meter and monitor energy usage, make adjustments to reduce energy consumption when possible	1
Other: taking a holistic view to implement changes	1
I don't know what SEM is	-
Don't know	-
Refused	-

* Multiple responses allowed

Table 6. Question C2a: “To what extent is each of the SEM elements in place at your company? Is the Identification and adoption of energy performance improvement goals fully in place, mostly in place, partly in place, or not in place?”

Response	Frequency (n=9)
Fully in place	4
Mostly in place	4
Partly in place	1
Not in place	-
Don't know	-
Refused	-

Table 7. Question C2b: “To what extent is each of the SEM elements in place at your company? Is the documentation of planned activities to reach the goals fully in place, mostly in place, partly in place, or not in place?”

Response	Frequency (n=9)
Fully in place	2
Mostly in place	5
Partly in place	2
Not in place	-
Don't know	-
Refused	-

Table 8. Question C2c: “To what extent is each of the SEM elements in place at your company? Is the allocation of staff resources and training or allocation of capital resources fully in place, mostly in place, partly in place, or not in place?”

Response	Frequency (n=9)
Fully in place	4
Mostly in place	3
Partly in place	2
Not in place	-
Don't know	-
Refused	-

Table 9. Question C2d: “To what extent is each of the SEM elements in place at your company? Is the ongoing implementation of activities or practices toward reaching the goals fully in place, mostly in place, partly in place, or not in place?”

Response	Frequency (n=9)
Fully in place	4
Mostly in place	4
Partly in place	1
Not in place	-
Don't know	-
Refused	-

Table 10. Question C2e: “To what extent is each of the SEM elements in place at your company? Is the reporting of progress to senior management fully in place, mostly in place, partly in place, or not in place?”

Response	Frequency (n=9)
Fully in place	4
Mostly in place	3
Partly in place	2
Not in place	-
Don't know	-
Refused	-

Table 11. Question C3: “Do you intend to fully implement NEEA's five elements of Strategic Energy Management?”

Response	Frequency (n=8)
Yes	7
No	-
Don't Know	1
Refused	-

Table 12. Question C4: “What is preventing you from fully implementing Strategic Energy Management at your company?”

Response	Frequency (n=1)
Lack of time	-
Lack of staff resources	-
Lack of capital resources	1
Lack of support from senior management	-
Lack of support from building tenants	-
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 13. Question C5: “When do you plan to have fully implemented Strategic Energy Management?”

Response	Frequency (n=7)
Less than one year	2
One to two years	4
Two to five years	1
More than five years	-
Don't know	-
Refused	-

Table 14. Question C6: “How did you decide which buildings would implement SEM?”

Response	Frequency (n=9)
Based on economics and return	1
It was based on collaboration with the owner, who pays the cost of the buildings that we chose	1
The buildings with lower energy efficiency	1
Through our 20 30 district participation	1
We decided all ENERGY STAR within our portfolio would be included	1
We haven't decided. That's one of the issues we haven't figured out. It won't be all the buildings.	1
We just picked the three that I had direct impact for	1
The management of the building, If the market is good and its cash flow is good enough	1
We have three and we picked one that was old and one that was newer	1

Table 15. Question C7: “Did you implement Strategic Energy Management at other buildings differently?”

Response	Frequency (n=9)
Ownership opportunities were there. Different owners want diff things	1
Partially they were a different program	1
Yes at one of the buildings the tenants pay for the utility cost	1
Yes office w/ tenant were implemented diff than residences	1
Yes, we used a macaral approach towards other property	1
Yes, I think it really comes down to the appetite of the owner to follow SEM, depending how willing the owner is to implement things	1
Yes, as per building there are a number of factors that we consider	1
Yes, we have diff perimeters for diff buildings	1
Don't know	1
Refused	-

Table 16. Question C8: “Are there other considerations you have in how Strategic Energy Management is implemented in your firm’s buildings?”

Response	Frequency (n=9)
A return on investment	1
Because we don't own, we have 150 owners we report to every quarter. Each owner is diff regarding cash and other resources	1
Effects on tenants and cost to occupants	1
Input from brokers and on the value of the implementation	1
Our budget, financial cost	1
The desired holding period for the owners before they sell	1
Type of lease Structure triple net leased building	1
You have to take into consideration turnovers. Ownership changes factor into how willing they are to invest in it. I think type of tenant base that owns a property	1
Don't know	1
Refused	-

Table 17. Question D1. “Now I'd like to talk more specifically about your energy management goals. What is your energy performance improvement goal?”

Response	Frequency (n=9)
10% reduction	2
10% across portfolio	1
15% reduction goal	1
25%	1
Close to 40%	1
Across Portfolio 10% reduction per year for the next 2 years	1
ENERGY STAR, LEED where possible	1
Utilizing ENERGY STAR on all properties	1
Don't know	-
Refused	-

Table 18. Question D2: “What date was the energy performance improvement goal adopted?”

Response	Frequency (n=9)
01-2012	1
01/2013	1
1-2014	1
11 2013	1
Feb 2014	1
It varied form building to building	1
Oct 2011	1
Oct 2013	1
Within the last year	1
Don't know	-
Refused	-

Table 19. Question D3: “Have you set or adopted any other energy-related goals because of your participation in the Market Partners Program? Goals can be expressed as a percentage reduction or an absolute number compared to existing energy use. They can be expressed as an energy intensity reduction or through adoption of other systems such as LEED or ENERGY STAR.”

Response	Frequency* (n=9)
Percentage reduction in energy use [SPECIFY:]	-
Absolute number reduction in energy used: 10% across board	1
Energy intensity reduction [SPECIFY:]	-
LEED	1
ENERGY STAR	5
Sustainability goals: Green Globes	1
Sustainability goals: Tenant awareness	1
Other: portfolio baseline	1
Don't know	1
Refused	1

* Multiple responses allowed

Table 20. Question D4a: “What year did you adopt the goal absolute number reduction in energy used?”

Response	Frequency (n=1)
2010	-
2011	-
2012	-
2013	1
2014	-
Before 2010	-

Table 21. Question D4b: “What year did you adopt the goal LEED?”

Response	Frequency (n=1)
2010	-
2011	-
2012	-
2013	1
2014	-
Before 2010	-

Table 22. Question D4c: “What year did you adopt the goal ENERGY STAR?”

Response	Frequency (n=5)
2010	2
2011	-
2012	1
2013	1
2014	-
Before 2010	1

Table 23. Question D4d: “What year did you adopt the sustainability goals?”

Response	Frequency (n=2)
2010	-
2011	-
2012	-
2013	1
2014	1
Before 2010	-

Table 24. Question D4e: “What year did you adopt the portfolio baseline goal?”

Response	Frequency (n=1)
2010	1
2011	-
2012	-
2013	-
2014	-
Before 2010	-

Table 25. Question D5a: “Is the goal energy performance improvement for this building only, for a particular portfolio, or the entire organization?”

Response	Frequency (n=9)
Building	-
Portfolio	5
Entire organization	4
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 26. Question D5b: “Is the goal absolute number reduction in energy used for this building only, for a particular portfolio, or the entire organization?”

Response	Frequency (n=1)
Building	-
Portfolio	-
Entire organization	1
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 27. Question D5c: “Is the goal LEED for this building only, for a particular portfolio, or the entire organization?”

Response	Frequency (n=1)
Building	-
Portfolio	1
Entire organization	-
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 28. Question D5d: “Is the goal ENERGY STAR® for this building only, for a particular portfolio, or the entire organization?”

Response	Frequency (n=9)
Building	1
Portfolio	3
Entire organization	1
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 29. Question D5e: “Is the sustainability goal for this building only, for a particular portfolio, or the entire organization?”

Response	Frequency (n=2)
Building	-
Portfolio	1
Entire organization	1
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 30. Question D5f: “Is the goal portfolio baseline for this building only, for a particular portfolio, or the entire organization?”

Response	Frequency (n=1)
Building	-
Portfolio	1
Entire organization	-
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 31. Question D6: “Have the energy-related goals been formally presented or accepted by the organization?”

Response	Frequency* (n=9)
Yes, presented and accepted	9
Yes, presented only	1
No, haven't been presented or accepted	-
Other: case by case basis	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 32. Question D7: “How were the goals documented by your company?”

Response	Frequency (n=9)
EUI changes every quarter and report to team and property mgrs	1
ENERGY STAR, LEED certification	1
Internal reporting method	1
Internal tracking	1
Quarterly report to senior management	1
We published them on our website and communicated with property owners and email and newsletter	1
We use the Pillars of responsible investing. It is given to the owners yearly	1
Via e mail	1
Company didn't document; only NEEA documented the goals	1
Don't know	-
Refused	-

Table 33. Question D8: “Was the goal communicate to internal staff?”

Response	Frequency (n=9)
Yes	9
No	-
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 34. Question D9: “I’m going to read a short list of ways the goal could be communicated to internal staff. Please tell me which ways the goal was communicated.”

Response	Frequency* (n=9)
Email	4
Website	1
Mailing	-
Company meeting, presentation	7
Open house presentation	-
Budget report	2
Other: Yes we put an ad in our local newspaper	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 35. Question D10: “Has your firm communicated externally to investors, owners, tenants, or other stakeholders about your energy-related goals or accomplishments?”

Response	Frequency (n=9)
Yes	9
No	-
Don't know	-
Refused	-

Table 36. Question D11: “Who were the goals shared with outside the company?”

Response	Frequency (n=9)
Tenants	6
Agents	3
Brokers	2
Energy-related contractors	4
Energy-related service providers	5
Owners	5
Other: shareholder	1
Other: owners of properties	1
Don't know	-
Refused	-

Table 37. Question E1: “What actions have you identified to help improve energy performance in your company in the next six months? These could include all things related to energy such as capital purchases, capital improvements, operations and maintenance changes, training, certifications, other behavioral change efforts, and/or third-party service provider proposals/projects”

Response	Frequency* (n=9)
None	1
Efficient equipment	-
Maintenance changes	1
Trainings and certifications	4
Energy tracking tools	2
Installed or improved heating or cooling controls	-
Other heating or cooling changes: It is case by case for each building	1
Other heating or cooling changes: Night walks	1
Other heating or cooling changes: Training - Operations on improving energy	1
Changed lighting timing; installed occupancy sensors	-
Installed LED parking lot lights	-
Other lighting projects [SPECIFY:]	-
Other: Capital Improvements	1
Other: Energy audit	1
Other: 3rd party proposal	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 38. Question E2: “How are actions implemented differently between buildings within your organization?”

Response	Frequency (n=9)
No difference between buildings	2
This is the only building we own or manage	-
Other: capital Improvements	1
Other: Different teams property management teams	1
Other: It depends on the type of heating and lighting systems in place	1
Other: One building is energy efficient and the other is not, so actions are totally different	1
Other: Some buildings we are approaching and trying to make behavioral changes and some were trying to make capital changes	1
Other: The actual energy consumption is different between buildings; each one is based on its needs	1
Other: When you turn on and off lighting is diff for each building. Each one has their own actions	1
Don't know	-
Refused	-

Table 39. Question E3: “How are actions implemented differently between buildings within your organization?”

Response	Frequency (n=9)
Yes	7
No	2
Don't know	-
Refused	-

Table 40. Question E4: “We are aware that the Market Partner Program documents your energy management actions and practices. Does your company also document energy management activities internally?”

Response	Frequency (n=9)
Yes, we document all the actions internally	8
NEEA documented all the actions and shared their documentation with our company	1
Something else [SPECIFY:]	-
Refused	-
Don't know	-

Table 41. Question E5: “How did you or your organization document the actions and practices?”

Response	Frequency* (n=8)
Email	3
Website	1
Newsletter	1
Company meeting	1
Quarterly report	2
Other: ENERGY STAR, Portfolio	1
Other: ENERGY STAR, monthly	1
Other: Internal database	1
Refused	-
Don't know	-

* Multiple responses allowed

Table 42. Question E6a: “Which of the following energy-efficiency activities have you or your organization documented? Let’s start with a list and description of planned energy-efficiency activities. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=8)
All	3
Most	3
Some	2
None	-
N/A	-
Refused	-
Don't know	-

Table 43. Question E6b: “Which of the following energy-efficiency activities have you or your organization documented? Let’s start with the staffing resources that you or your organization will need to conduct the activity; staffing resources include anyone who will be planning or implementing the actions. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=8)
All	1
Most	2
Some	3
None	2
N/A	-
Refused	-
Don't know	-

Table 44. Question E6c: “Which of the following energy-efficiency activities have you or your organization documented? Let’s start with the training resources that you will need. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=8)
All	3
Most	1
Some	4
None	-
N/A	-
Refused	-
Don't know	-

Table 45. Question E6d: “Which of the following energy-efficiency activities have you or your organization documented? Let’s start with the capital resources that you will need. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=8)
All	3
Most	2
Some	3
None	-
N/A	-
Refused	-
Don't know	-

Table 46. Question E6e: “Which of the following energy-efficiency activities have you or your organization documented? Let’s start with the timeframe of planned projects. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=8)
All	1
Most	5
Some	2
None	-
N/A	-
Refused	-
Don't know	-

Table 47. Question E6f: “Which of the following energy-efficiency activities have you or your organization documented? Let’s start with the expected impacts and/or benefits of the energy-efficiency activity. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=8)
All	2
Most	3
Some	3
None	-
N/A	-
Refused	-
Don't know	-

Table 48. Question F1: “Are you or someone else at your company a designated ‘energy manager’ or ‘energy champion’?”

Response	Frequency (n=9)
Yes	8
No	1
Don't know	-
Refused	-

Table 49. Question F2: “Do you have an energy team that meets regularly or is energy discussed as part of other regular meetings such as operations or sustainability?”

Response	Frequency (n=9)
Yes	8
No	1
Don't know	-
Refused	-

Table 50. Question F3a: “I’m going to read a list of energy-related activities. Please tell me if your organization has allocated staff, capital, or other resources to each one by answering YES or NO. By allocating staff resources, we are referring to anyone who works with energy-efficiency practices or activities even if that isn’t the only role they have with the company. Has your firm sent or approved staff resources to attend energy-related training, energy-related coaching, or commercial real estate market awareness events?”

Response	Frequency (n=9)
Yes	8
No	1
N/A	-
Don't know	-
Refused	-

Table 51. Question F3b: “I’m going to read a list of energy-related activities. Please tell me if your organization has allocated staff, capital, or other resources to each one by answering YES or NO. By allocating staff resources, we are referring to anyone who works with energy-efficiency practices or activities even if that isn’t the only role they have with the company. Has your firm budgeted for any energy-related activities such as tools or equipment, operations and maintenance projects, capital projects, or training for staff?”

Response	Frequency (n=9)
Yes	9
No	-
N/A	-
Don't know	-
Refused	-

Table 52. Question F3c: “I’m going to read a list of energy-related activities. Please tell me if your organization has allocated staff, capital, or other resources to each one by answering YES or NO. By allocating staff resources, we are referring to anyone who works with energy-efficiency practices or activities even if that isn’t the only role they have with the company. Has your firm hired new resources or redefined existing job duties to include energy management job responsibilities?”

Response	Frequency (n=9)
Yes	7
No	2
N/A	-
Don't know	-
Refused	-

Table 53. Question F3d: “I’m going to read a list of energy-related activities. Please tell me if your organization has allocated staff, capital, or other resources to each one by answering YES or NO. By allocating staff resources, we are referring to anyone who works with energy-efficiency practices or activities even if that isn’t the only role they have with the company. Has your firm approved staff resources for monitoring electric or natural gas billing data?”

Response	Frequency (n=9)
Yes	9
No	-
N/A	-
Don't know	-
Refused	-

Table 54. Question F4: “What are the reasons your company hasn’t allocated resources for energy performance improvement?”

Response	Frequency (n=0)
[RECORD ANSWER]	-
Don't know	-
Refused	-

Table 55. Question F5: “Has your company allocated any additional resources for energy efficiency or energy management?”

Response	Frequency (n=9)
Yes	4
No	5
Don't know	-
Refused	-

Table 56. Question F5a: “Please describe the additional resources allocated for energy efficiency.”

Response	Frequency (n=4)
Set a budget of \$5,000 to continue to support energy effect at the company	1
We budget and send staff to training & industry seminars and use tools for awareness. Events for tenants and staff	1
Funds available to make improvements	1
Property manager is taking on added task	1

Table 57. Question G1: “Is progress toward your energy performance goal communicated to upper management on a regular basis?”

Response	Frequency (n=9)
Yes	8
No	1
Plan to in the future	-
Don't know	-
Refused	-

Table 58. Question G2: “Are these management updates provided for a single building, a portfolio, or the entire organization?”

Response	Frequency (n=8)
Single building	2
Portfolio	3
Entire organization	3
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 59. Question G3: “How frequently are updates provided to management about the progress your organization is making in meeting its energy performance goals?”

Response	Frequency (n=8)
Daily	-
Weekly	-
Monthly	2
Quarterly	4
Twice a year	-
Annually	2
Never provide updates	-
Whenever they are needed; no set schedule or timeline	-
Other [SPECIFY:]	-
Don't know	-
Refused	-

Table 60. Question G4: “How are these updates shared with the organization?”

Response	Frequency* (n=8)
Email	3
Website	1
Mailing	-
Company meeting, presentation	6
Open house presentation	-
Budget report	2
Other [SPECIFY:]	-
Don't know	-
Refused	-

* Multiple responses allowed

Table 61. Question G5a: “Which of the following items do management updates include? Do they include an update about actual performance measured against the goal?”

Response	Frequency (n=8)
Yes	7
No	1
N/A	-
Don't know	-
Refused	-

**Table 62. Question G5b: “Which of the following items do management updates include?
Do they include the effectiveness of each activity on reducing energy?”**

Response	Frequency (n=8)
Yes	6
No	2
N/A	-
Don't know	-
Refused	-

**Table 63. Question G5c: “Which of the following items do management updates include?
Do they include whether the staffing, training, or capital resources allocated were sufficient
to perform the practice or reach the energy performance improvement goals?”**

Response	Frequency (n=8)
Yes	5
No	3
N/A	-
Don't know	-
Refused	-

**Table 64. Question G5d: “Which of the following items do management updates include?
Do they include changes to goals or metrics?”**

Response	Frequency (n=8)
Yes	7
No	1
N/A	-
Don't know	-
Refused	-

**Table 65. Question G5e: “Which of the following items do management updates include?
Do they include progress updates on implementation of previously approved energy
projects?”**

Response	Frequency (n=8)
Yes	8
No	-
N/A	-
Don't know	-
Refused	-

Table 66. Question G5f: “Which of the following items do management updates include? Do they include presentation of proposed projects and their potential benefits, for approval by management?”

Response	Frequency (n=8)
Yes	6
No	2
N/A	-
Don't know	-
Refused	-

Table 67. Question H1: “Now I’d like to talk about current outcomes of your Strategic Energy Management actions. Has your company improved its energy performance as much as expected?”

Response	Frequency (n=9)
Yes	5
No	4
Don't know	-
Refused	-

Table 68. Question H1a: “Are you on track to meet your energy performance goals?”

Response	Frequency (n=4)
Yes	2
No	1
Don't know	1
Refused	-

Table 69. Question H2: “How helpful do you think the activities and practices you’ve planned as a result of the Market Partners Program have been in helping you improve your energy performance?”

Response	Frequency (n=9)
Very helpful	8
Somewhat helpful	1
Not too helpful	-
Not helpful at all	-
Don't know	-
Refused	-

Table 70. Question H3: “Did you have enough staffing, training, and capital resources to improve your energy performance as much as you intended?”

Response	Frequency (n=9)
Yes	6
No	3
Don't know	-
Refused	-

Table 71. Question H3a: “Please explain which resources were less available than planned.”

Response	Frequency (n=3)
Capital and staff	2
Staffing; we didn't have enough internal staffing. Management wasn't willing to make a big enough commitment	1

Table 72. Question H4: “Do you revisit your plan to improve energy performance on a regular basis, or update it when changes are needed?”

Response	Frequency (n=9)
Regular basis	4
Update as needed	5
Don't know	-
Refused	-

Table 73. Question I1a: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in establishing a management supported mission statement or vision for energy efficiency, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	3
Somewhat valuable	5
Not too valuable	1
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 74. Question I1b: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in forming a cross-functional team within your firm, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	3
Somewhat valuable	5
Not too valuable	1
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 75. Question I1c: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in establishing or supporting benchmarking in Portfolio Manager, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	6
Somewhat valuable	3
Not too valuable	-
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 76. Question I1d: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in developing an action plan, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	8
Somewhat valuable	1
Not too valuable	-
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 77. Question I1e: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in setting energy performance goals, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	8
Somewhat valuable	1
Not too valuable	-
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 78. Question I1f: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in receiving building technical scoping, identifying opportunities and engineering training, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	8
Somewhat valuable	1
Not too valuable	-
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 79. Question I1g: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in reviewing progress toward your plans and energy performance goal, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	6
Somewhat valuable	3
Not too valuable	-
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 80. Question I1h: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in reporting and communicating energy and cost savings with owners or external stakeholders, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	6
Somewhat valuable	3
Not too valuable	-
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 81. Question I1i: “I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in connecting with utility staff and use incentives, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=9)
Very valuable	5
Somewhat valuable	2
Not too valuable	2
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 82. Question I2a: “Can you tell me the reasons you said that establishing a management supported mission statement or vision for energy efficiency were not very valuable components of the program?”

Response	Frequency (n=1)
Never really finalized that piece of it, but it was still successful	1

Table 83. Question I2b: “Can you tell me the reasons you said that forming a cross-functional team within your firm were not very valuable components of the program?”

Response	Frequency (n=1)
We just are not a big organization	1

Table 84. Question I2c: “Can you tell me the reasons you said that connecting with utility staff and use incentives were not very valuable components of the program?”

Response	Frequency (n=2)
We didn't ask for that and it just didn't happen, I'm not sure why	1
We didn't make many connections for rebates	1

Table 85. Question I3: “Are there other components or assistance you received from the program that you found valuable?”

Response	Frequency (n=9)
Yes, Specify: Focus on all components for a full overview of the building	1
Yes, Specify: Having a resource; someone we could talk through things was very valuable. A resource to guide us	1
Yes, Specify: Talking through issues with John Sulkily He was very helpful	1
Yes, Specify: The creativity solutions and ability to brainstorm ideas and the Road Map was very helpful	1
Yes, Specify: Staff support	1
No	3
Don't know	-
Refused	1

Table 86. Question I4: “Have you attended other professional seminars and workshops on energy management offered by different organizations that you found helpful?”

Response	Frequency (n=9)
Yes, Specify: BOMA, Green Build	1
Yes, Specify: Green Build and Living Future	1
Yes, Specify: I go to USGBC Green build every year they offer quite a few workshops	1
Yes, Specify: with Portland General Elect Provides training	1
Yes, Specify: green steps organization	1
Yes, Specify: sustainability conf	1
No	2
Don't know	-
Refused	1

Table 87. Question I5: “What tools provided by the Market Partners Program were most useful in understanding and improving your company’s energy performance?”

Response	Frequency (n=9)
Brought an engineer to look at the buildings and communicated effectively and having the regular meetings with better bricks kept us on track and accountability	1
Energy evaluation, night walks, additional resources for additional specific building operations	1
Goal setting and training	1
Talking about it, brainstorming	1
Goal setting	1
Goal setting documentation guidelines	1
The whole thing was help full	1
Don't know	1
Refused	1

Table 88. Question I6: “What other tools, information, or training can NEEA and BetterBricks offer to motivate commercial real estate owners and managers to adopt Strategic Energy Management?”

Response	Frequency (n=9)
Continue try to get managers and owners to understand the financial benefit; that capital investment is worthwhile	1
ENERGY STAR and benchmarking and the training was very helpful. I can't think of anything else	1
Greater, more detail on how to present projects to owners	1
Just continue to be a conduit for information	1
Resources in training and information on new resources available	1
The competition is doing individual participant collaborative participation	1
To have the city come out more and point out what could be done differently. Green is the new black hard to keep up with it, it is changing so much so fast	1
None	2
Don't know	-
Refused	-

Table 89. Question I7: “What tools or strategies should be included in the Market Partners Program to encourage more coordination between property managers and building engineers or operators?”

Response	Frequency (n=9)
An easy way that pencils so everyone is on the same page	1
Cross-functional team or creating a team for environment	1
Getting us together, open dialog form	1
Incentivizing building operators is not done in our organization. It could be discussed more; it’s important. Not all of our operators have access to more information	1
More technical training for property mgr from engineers	1
Don't know	4
Refused	-

Table 90. Question J1: “What motivated your company to participate in the Market Partners Program?”

Response	Frequency* (n=9)
To stay competitive in the industry	2
To attract or retain tenants	-
To meet our energy performance goals	2
Save energy and money through reducing operating costs	3
To increase long-term asset value	-
To increase value delivered to our owners	-
Other: Meeting with the utility co	1
Other: They offer more to our client and sell the value	1
Other: We are a member of Seattle 20 30 District	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 91. Question J2: “Before participating in this program, how active was your company in managing energy?”

Response	Frequency (n=9)
Very active	1
Somewhat active	6
Not too active	1
Not active at all	1
Don't know	-
Refused	-

Table 92. Question J3: “Did your company participate in other utility-sponsored energy-efficiency programs before participating in NEEA’s Market Partners Program?”

Response	Frequency (n=6)
Energy-efficient equipment	1
Energy assessment	-
Renewable energy incentive	-
Energy events and education	-
Other: Avista rebate program	1
Other: BetterBricks in 2009	1
Other: BetterBricks	1
Other: ENERGY STAR	1
Other: LEED, ENERGY STAR	1
Don't know	-

Table 93. Question J4: “Do you plan to participate in utility-sponsored energy-efficiency programs more often in the future as a result of your participation in the Market Partners Program?”

Response	Frequency (n=9)
Yes	9
No	-
Don't know	-
Refused	-

Table 94. Question J5: “How many of the projects implemented through NEEA’s assistance do you think would have been implemented in the absence of the Market Partners Program? Would you say all, most, some, or none of the projects?”

Response	Frequency (n=9)
All	-
Most	-
Some	9
None	-
Don't know	-
Refused	-

Table 95. Question J6: “What are your reasons for saying that?”

Response	Frequency (n=9)
Awareness	1
Involved with other programs	1
Some of the stuff is based on equip life and the new equipment it is replaced with	1
The ones more specific to the energy management for HVAC	1
The property mgr and build tech implement the projects that are easy to change. We would do any way, but the creative way BetterBricks looks at the buildings differently without spending capital was very valuable	1
We have a few people that had implemented things in the past and would have continued too	1
We were not aware issues existed	1
We were not aware of everything out there	1
Sold one building	1
Don't know	-
Refused	-

Table 96. Question J7: “What more would your company like to be doing to manage energy?”

Response	Frequency (n=9)
Continue creative management team: and as technology changes, so does energy	1
Encourage better sensitivity from tenants on how they consume energy in the building, such as the choices they make in data centers (upgrade equipment for lower temps in the data processing room, older equip upgraded to newer energy-efficient equipment)	1
Expand BetterBricks to other buildings like commercial	1
Have more staff training, capital resources, required internal reporting	1
To continue to keep up-to-date, and keep on looking for new ways	1
Use the list they gave us replace items with more efficient ones	1
We want to continue to show our client that energy management is financially pliable and makes financial sense	1
Nothing more	1
Don't know	1
Refused	-

Table 97. Question K1: “What would you say are the main benefits to your organization resulting from your firm’s participation in the Market Partners Program?”

Response	Frequency* (n=9)
No benefits	-
Attractive to tenants; higher occupancy rate	2
Attractive to owners	1
Energy savings	6
Environmental benefits	-
Increased occupant comfort	-
Lower energy bill; saved money, reduced operating costs	2
Lower maintenance costs	2
More effective organization across roles	2
Marketing benefits	3
Other: Show leaderships to our clients and competitors	1
Other: tracking tools	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 98. Question K2: “Are there any other benefits besides saving energy that you have seen from implementing Strategic Energy Management?”

Response	Frequency* (n=9)
No	-
Attractive to tenants; higher occupancy rate	6
Environmental benefits	-
Increased occupant comfort	1
Lower maintenance costs	4
Marketing benefits	3
Other: A willingness to do more sustainability reduction	1
Other: It helps us focus on sustainability and recycling	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 99. Question K3: “What would you say are the challenges to adopting Strategic Energy Management?”

Response	Frequency* (n=9)
Age/condition of buildings	-
Budget limitations	3
Not a high enough return on investment	-
Funding competition from other company priorities	1
High initial cost	1
Lack of knowledgeable staff to support energy-efficiency best practices	2
Lack of staff time to dedicate to energy-efficiency training or implementation	1
Lack of technical knowledge about energy-efficiency best practices	-
Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry	-
Long payback period	-
No challenges	1
Other: For older buildings it is difficult to ask for cap investment. And the ROI is low. Working with utility co on getting rebates or finding new ones	1
Other: Organization capacity; we don't have the people in place to implement plans	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 100. Question K4: “What do you see as the most significant challenge in adopting Strategic Energy Management?”

Response	Frequency (n=2)
Age/condition of buildings	-
Budget limitations	-
Not a high enough return on investment	-
Funding competition from other company priorities	-
High initial cost	-
Lack of knowledgeable staff to support energy efficiency best practices	-
Lack of staff time to dedicate to energy efficiency training or implementation	-
Lack of technical knowledge about energy efficiency best practices	-
Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry	-
Long payback period	-
Other: Funding and organization	1
Other Time and resources	1
Don't know	-
Refused	-

Table 101. Question K5a: “Please tell me the extent of assistance you received from NEEA and BetterBricks in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with Strategic Energy Management resources, approaches, or tools tailored to commercial office buildings?”

Response	Frequency (n=9)
A lot of assistance	6
Some assistance	3
Little assistance	-
No assistance	-
Don't know	-
Refused	-

Table 102. Question K5b: “Please tell me the extent of assistance you received from NEEA and BetterBricks in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with a cost-effective system to track and manage energy for a whole-building?”

Response	Frequency (n=9)
A lot of assistance	4
Some assistance	3
Little assistance	1
No assistance	1
Don't know	-
Refused	-

Table 103. Question K5c: “Please tell me the extent of assistance you received from NEEA and BetterBricks in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with communicating and promoting successes with Strategic Energy Management?”

Response	Frequency (n=9)
A lot of assistance	6
Some assistance	3
Little assistance	-
No assistance	-
Don't know	-
Refused	-

Table 104. Question K5d: “Please tell me the extent of assistance you received from NEEA and BetterBricks in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with training staff to implement energy performance improvement activities?”

Response	Frequency (n=9)
A lot of assistance	7
Some assistance	2
Little assistance	-
No assistance	-
Don't know	-
Refused	-

Table 105. Question K6: “What could NEEA/BetterBricks do to help your company overcome challenges to adopting Strategic Energy Management practices?”

Response	Frequency (n=9)
Continue to be a conduit to connecting us with good companies to help the business with energy efficiency	1
Continue to publicize the need and the possibilities in SEM so our clients can recognize it	1
Continuing Education	1
Helping mgrs put together projects or proposals to present to/or pitch to owners	1
Training staff	1
Nothing	4
Don't know	-
Refused	-

Table 106. Question L1: “When considering energy-efficiency projects, is your company’s requirement for return-on-investment less stringent, more stringent, or the same as for other capital investments?”

Response	Frequency (n=9)
Less stringent	2
More stringent	3
The same	3
Don't know	1
Refused	-

Table 107. Question M1: “Do you have any other feedback about the Market Partners Program that we can provide to NEEA?”

Response	Frequency (n=9)
Drive companies forward and take on more efficiency projects	1
Great experience	1
I was so impressed with quality and open-mindedness to conserving energy	1
It was extremely helpful and a great value; we're appreciative even though we didn't make the progress we had hoped	1
Valuable program	1
Very good program need to meet more frequently	1
Your staff went the extra mile almost to the point of bugging but in a good way	1
No feedback	2
Don't know	-
Refused	-

Table 108. Question M2: “The program team would like to follow up with you later this year and on an annual basis to gain updates on your progress and continue to measure your energy savings. Would that be acceptable?”

Response	Frequency (n=9)
Yes	9
No	-
Don't know	-
Refused	-

Appendix F. Market Partners Program Building-Level Survey Frequencies

Appendix F: MPP Building Survey Frequencies

Table 1. Question B1: “How long have you been with [COMPANY]?”

Response	Frequency (n=5)
Less than 1 year	1
1 to less than 3 years	1
3 to less than 5 years	1
More than 5 years	2
Don't know	-
Refused	-

Table 2. Question B2: “Our records show your role is [TITLE]. Is this correct?”

Response	Frequency (n=5)
Yes	5
No	-

Table 3. Question B3: “How long have you had the role of [TITLE]?”

Response	Frequency (n=5)
Less than 1 year	2
1 to less than 3 years	1
3 to less than 5 years	-
More than 5 years	2
Don't know	-
Refused	-

Table 4. Question B4: “How do your job duties relate to energy performance at this building?”

Response	Frequency (n=5)
I am in charge of all buildings energy performance, operation, and maintenance	1
I look at the elect bill and make sure equipment is running efficiently and using efficient light fixtures	1
My job is to monitor energy efficiency for the building and look for better ways to conservation energy	1
Property manager analyze energy performance, and walk through	1
Operating the digital control system for the HVAC unit and also identifying energy-saving projects like lighting and high-efficiency boilers	1
Energy champion/energy manager	-

Table 5. Question D1: “Do you have an energy performance improvement goal for [BUILDING NAME]?”

Response	Frequency (n=5)
Yes	3
No	2
Don't know	-
Refused	-

Table 6. Question D2: “What is the energy performance improvement goal?”

Response	Frequency (n=3)
15%	1
Just to continue improvements.	1
An upgrade of the digital control system for the HVAC equipment. And upgrade lighting. And exterior window upgrade	1
We don't have a goal	-
Don't know	-
Refused	-

Table 7. Question D3: “When was this goal adopted and accepted by senior management?”

Response	Frequency (n=3)
Jan-2009	1
January 2014	1
June 2011	1
Has not been accepted by senior management	-
Don't know	-
Refused	-

Table 8. Question E1: “Our records show that you recently implemented these activities at [INSERT BUILDING NAME] [INSERT PRACTICE 1, PRACTICE2, AND PRACTICE3]. Is this correct?”

Response	Frequency (n=3)
Yes, all correct	2
No	-
Don't know	1
Refused	-

Table 9. Question E2: “Our records show that in previous years you implemented these operational best practices at [INSERT BUILDING NAME] [INSERT BEHAVIOR1, BEHAVIOR2, AND BEHAVIOR3]. Are these activities still in place?”

Response	Frequency (n=5)
Yes, all still in place	4
No	-
Don't know	1
Refused	-

Table 10. Question E3: “What activities have you identified to help improve energy performance in this building in the next six months? These could include all things related to energy such as capital purchases, capital improvements, operations and maintenance changes, training, certifications, other behavioral change efforts, and/or third-party service provider proposals/projects.”

Response	Frequency* (n=5)
None	-
Efficient equipment	1
Maintenance changes	-
Trainings and certifications	-
Energy tracking tools	1
Installed or improved heating or cooling controls	-
Other heating or cooling changes [SPECIFY:]	-
Changed lighting timing; installed occupancy sensors	-
Installed LED parking lot lights	1
Other lighting projects [SPECIFY:]	-
Other: BetterBricks energy performance checklists	1
Don't know	2
Refused	-

* Multiple responses allowed

Table 11. Question E4: “Has your firm taken action to conduct outreach, education, or to challenge tenants to improve energy performance?”

Response	Frequency (n=5)
Yes	5
No	-
Don't know	-
Refused	-

Table 12. Question E5: “We are aware that the Market Partner Program documents your energy management activities. Does someone at your building also document energy management activities internally?”

Response	Frequency (n=5)
Yes, we document all the activities internally	3
NEEA documented all the practices and shared their documentation with our company	2
Something else [SPECIFY:]	-
Don't know	-
Refused	-

Table 13. Question E6: “How did you or your colleagues document the activities?”

Response	Frequency* (n=3)
Email	1
Website	-
Newsletter	-
Company meeting	-
Quarterly report	-
Other: ENERGY STAR	1
Other: Operation manual/ property mgr. and engineering staff is shared	1
Other: Quotes and documents	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 14. Question E7a: “Which of the following have you or your colleagues documented for your energy-efficiency activities at this building? Let’s start with a list and description of planned energy-efficiency activities. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=3)
All	2
Most	1
Some	-
None	-
N/A	-
Don't Know	-
Refused	-

Table 15. Question E7b: “Which of the following have you or your colleagues documented for your energy-efficiency activities at this building? Let’s start with the staffing resources that you or your organization will need to conduct the activity; staffing resources include anyone who will be planning or implementing the activities. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=3)
All	1
Most	1
Some	-
None	1
N/A	-
Don’t Know	-
Refused	-

Table 16. Question E7c: “Which of the following have you or your colleagues documented for your energy-efficiency activities at this building? Let’s start with the training resources that you will need. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=3)
All	-
Most	1
Some	2
None	-
N/A	-
Don’t Know	-
Refused	-

Table 17. Question E7d: “Which of the following have you or your colleagues documented for your energy-efficiency activities at this building? Let’s start with the capital resources that you will need. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=3)
All	1
Most	1
Some	1
None	-
N/A	-
Don’t Know	-
Refused	-

Table 18. Question E7e: “Which of the following have you or your colleagues documented for your energy-efficiency activities at this building? Let’s start with the timeframe of planned projects. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=3)
All	1
Most	1
Some	1
None	-
N/A	-
Don’t Know	-
Refused	-

Table 19. Question E7f: “Which of the following have you or your colleagues documented for your energy-efficiency activities at this building? Let’s start with the expected impacts and/or benefits of the energy-efficiency activity. Has this been documented for all, most, some, or none of your energy-efficiency activities?”

Response	Frequency (n=3)
All	1
Most	-
Some	2
None	-
N/A	-
Don’t Know	-
Refused	-

Table 20. Question F1: “Are you or someone else at your building a designated ‘energy manager’ or ‘energy champion’?”

Response	Frequency (n=5)
Yes	3
No	2
Don't know	-
Refused	-

Table 21. Question F2: “Do you have an energy team that meets regularly or is energy discussed as part of other regular meetings such as operations or sustainability?”

Response	Frequency (n=5)
Yes	3
No	2
Don't know	-
Refused	-

Table 22. Question F3a: “I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in. Updating the Portfolio Manager account with monthly energy use (benchmarking?”

Response	Frequency (n=5)
Yes	3
No	2
N/A	-
Don’t Know	-
Refused	-

Table 23. Question F3b: “I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in. Identifying opportunities to improve operations?”

Response	Frequency (n=5)
Yes	5
No	-
N/A	-
Don’t Know	-
Refused	-

Table 24. Question F3c: “I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in. Conducting nightwalks?”

Response	Frequency (n=5)
Yes	4
No	1
N/A	-
Don’t Know	-
Refused	-

Table 25. Question F3d: “I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in. Budgeting for capital improvements in the building?”

Response	Frequency (n=5)
Yes	5
No	-
N/A	-
Don’t Know	-
Refused	-

Table 26. Question F3e: “I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in. Engaging tenants in ways to save energy?”

Response	Frequency (n=5)
Yes	3
No	2
N/A	-
Don’t Know	-
Refused	-

Table 27. Question F3f: “I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in. Pursuing ENERGY STAR Certification?”

Response	Frequency (n=5)
Yes	4
No	1
N/A	-
Don’t Know	-
Refused	-

Table 28. Question F3g: “I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in. Measuring energy savings?”

Response	Frequency (n=5)
Yes	4
No	1
N/A	-
Don’t Know	-
Refused	-

Table 29. Question F3h: “I’m going to read a list of energy-related activities. Please tell me which ones your staff are engaged in. Reporting on energy savings?”

Response	Frequency (n=5)
Yes	3
No	2
N/A	-
Don’t Know	-
Refused	-

Table 30. Question F4: “Do you know if your company has allocated any additional resources for energy efficiency or energy management?”

Response	Frequency (n=5)
Yes, our company allocates additional resources	1
No	3
Don't know	1
Refused	-

Table 31. Question F4a: “Please describe the additional resources allocated for energy efficiency.”

Response	Frequency (n=1)
Capital expenditure in the form of budget line items	1

Table 32. Question G1: “Is progress toward your energy performance goal communicated to senior management on a regular basis?”

Response	Frequency (n=3)
Yes	3
No	-
Plan to in the future	-
Don't know	-
Refused	-

Table 33. Question G2: “How frequently are updates provided for management about the progress your building is making with regards to its energy performance?”

Response	Frequency (n=3)
Daily	-
Weekly	-
Monthly	1
Quarterly	2
Twice a year	-
Annually	-
Never provide updates	-
Whenever they are needed; no set schedule or timeline	-
Other [SPECIFY:_____]	-
Don't know	-
Refused	-

Table 34. Question G3: “How are these updates shared with the building?”

Response	Frequency* (n=3)
Email	2
Website	-
Mailing	-
Company meeting, presentation	2
Open house presentation	-
Budget report	1
Other [SPECIFY:_____]	-
Don't know	-
Refused	-

* Multiple responses allowed

Table 35. Question G4a: “Which of the following items do updates for management include? Do they include an update about actual performance measured against the goal?”

Response	Frequency (n=3)
Yes	3
No	-
N/A	-
Don't know	-
Refused	-

Table 36. Question G4b: “Which of the following items do updates for management include? Do they include the effectiveness of each activity on improving energy performance?”

Response	Frequency (n=3)
Yes	3
No	-
N/A	-
Don't know	-
Refused	-

Table 37. Question G4c: “Which of the following items do updates for management include? Do they include whether the staffing, training, or capital resources allocated were sufficient to perform the practice or reach the energy performance improvement goals for the building?”

Response	Frequency (n=3)
Yes	2
No	1
N/A	-
Don't know	-
Refused	-

Table 38. Question G4d: “Which of the following items do updates for management include? Do they include changes to goals or metrics?”

Response	Frequency (n=3)
Yes	2
No	1
N/A	-
Don't know	-
Refused	-

Table 39. Question G4e: “Which of the following items do updates for management include? Do they include progress updates on implementation of previously approved energy projects?”

Response	Frequency (n=3)
Yes	3
No	-
N/A	-
Don't know	-
Refused	-

Table 40. Question G4f: “Which of the following items do updates for management include? Do they include presentation of proposed projects and their potential benefits, for approval by management?”

Response	Frequency (n=3)
Yes	3
No	-
N/A	-
Don't know	-
Refused	-

Table 41. Question H1: “Now I’d like to talk about current outcomes of your energy-efficiency activities. Has your company improved its energy performance as much as expected?”

Response	Frequency (n=5)
Yes	3
No	1
Don't know	1
Refused	-

Table 42. Question H1a: “Are you on track to meet your energy performance goals?”

Response	Frequency (n=1)
Yes	1
No	-
Don't know	-
Refused	-

Table 43. Question H2: “How helpful do you think the planned activities in the BetterBricks scoping report have been in helping you improve your energy performance?”

Response	Frequency (n=5)
Very helpful	2
Somewhat helpful	3
Not too helpful	-
Not helpful at all	-
Don't know	-
Refused	-

Table 44. Question H3: “Did you have enough staffing, training, and capital resources to improve your energy performance as much as you intended?”

Response	Frequency (n=5)
Yes	3
No	2
Don't know	-
Refused	-

Table 45. Question H3a: “Please explain which resources were less available than planned?”

Response	Frequency (n=2)
Capital	1
Funding	1

Table 46. Question I1: “How familiar are you with Building Operator Certification training offered by NEEA?”

Response	Frequency (n=5)
Very familiar	1
Somewhat familiar	2
Not too familiar	1
Not at all familiar	1
Don't know	-
Refused	-

Table 47. Question I2: “Have you attended Building Operator Certification training offered by NEEA?”

Response	Frequency (n=4)
Yes	1
No	3
Don't know	-
Refused	-

Table 48. Question I2a: “Are you aware of other staff at your company attending the NEEA training?”

Response	Frequency (n=3)
Yes	1
No	2
Don't know	-

Table 49. Question I3: “What was the most valuable aspect of the Building Operator Certification training?”

Response	Frequency (n=1)
The lighting elect and more were covered but most valuable was interrelated panorama of practices. Most valuable would be the overall training on fundamentals	1
Don't know	-
Refused	-

Table 50. Question I4: “Have you attended other professional seminars and workshops offered by different organizations that you found helpful?”

Response	Frequency (n=5)
Yes	4
No	1
Don't know	-
Refused	-

Table 51. Question I5: “What tools or seminars and workshops can NEEA offer to motivate building engineers, operators, or facility managers to adopt energy management activities?”

Response	Frequency (n=5)
Energy efficiency ones, case study related seminars	1
Getting people interested	1
Lighting and HVAC operations seminars	1
None	-
Don't know	2
Refused	-

Table 52. Question I6: “What tools or strategies should be included in the Market Partners Program to encourage more coordination between property managers and building engineers or operators?”

Response	Frequency (n=5)
Managers need to take the LEED in coordination. The resources are there, we just need to take advantage of them	1
No cost in with implementing recommendations	1
Offer classes or e mail class- variety of classes	1
Don't know	2
Refused	-

Table 53. Question I7a: “I’m going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in Portfolio Manager account set up and benchmarking support, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=5)
Very valuable	-
Somewhat valuable	4
Not too valuable	1
Not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 54. Question I7b: “I’m going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in developing an action plan, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=5)
Very valuable	3
somewhat valuable	2
not too valuable	-
not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 55. Question I7c: “I’m going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in setting energy performance goals, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=3)
Very valuable	1
somewhat valuable	2
not too valuable	-
not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 56. Question I7d: “I’m going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in engineering coaching or training (one-on-one’s or seminars, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=5)
Very valuable	2
somewhat valuable	3
not too valuable	-
not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 57. Question I7e: “I’m going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in documenting energy-related activities taken, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=5)
Very valuable	3
somewhat valuable	1
not too valuable	1
not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 58. Question I7f: “I’m going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in measuring energy and cost savings, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=5)
Very valuable	2
somewhat valuable	3
not too valuable	-
not at all valuable	-
N/A	-
Don't know	-
Refused	-

Table 59. Question I7g: “I’m going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in reporting on progress, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=5)
Very valuable	3
somewhat valuable	1
not too valuable	-
not at all valuable	-
N/A	1
Don't know	-
Refused	-

Table 60. Question I7h: “I’m going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in ENERGY STAR certification support, would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?”

Response	Frequency (n=5)
Very valuable	2
somewhat valuable	1
not too valuable	1
not at all valuable	-
N/A	1
Don't know	-
Refused	-

Table 61. Question I8a: “Can you tell me the reasons you said that Portfolio Manager account set up and benchmarking support were not very valuable components of the program?”

Response	Frequency (n=1)
In my situation it is minimal	1

Table 62. Question I8b: “Can you tell me the reasons you said that documenting energy-related activities taken were not very valuable components of the program?”

Response	Frequency (n=1)
With this being the only thing involved, it was not a benefit. Just didn't need it or use it	1

Table 63. Question I8c: “Can you tell me the reasons you said that ENERGY STAR certification support were not very valuable components of the program?”

Response	Frequency (n=1)
To me in my situation is minimal	1

Table 64. Question J1: “Did your company conduct any major building upgrades at [BUILDING NAME, ADDRESS] within the last two years? These upgrades are not necessarily energy related but could impact energy use.”

Response	Frequency (n=5)
Yes	2
No	3
Don't know	-
Refused	-

Table 65. Question J1a: “Could you describe the type of upgrades?”

Response	Frequency (n=2)
Building size increased or decreased	-
Remodeled floor	-
Upgraded heating or cooling system	2
Building shell updates; doors, windows, roof	-
Cosmetic changes; carpet, paint)	-
Other [SPECIFY: _____]	-
Don't know	-
Refused	-

Table 66. Question J2: “Before participating in the Market Partners Program, how active was this building in managing energy?”

Response	Frequency (n=5)
Very active	1
Somewhat active	-
Not too active	1
Not active at all	2
Don't know	1
Refused	-

Table 67. Question J3: “Did this building participate in other utility-sponsored energy-efficiency rebate programs before participating in NEEA’s Market Partners Program?”

Response	Frequency (n=5)
Yes	2
No	1
Don't know	2
Refused	-

Table 68. Question J3a: “What type of rebate program was it?”

Response	Frequency (n=2)
Energy-efficient equipment	1
Energy assessment	-
Renewable energy incentive	-
Energy events and education	-
Other: Idaho Power lighting program	1
Don't know	-

Table 69. Question J4: “What more would your company like to be doing to manage energy at this building?”

Response	Frequency (n=5)
To have a web-based HVAC control system	1
We could update some of the HVAC controls and replace more of the outdated lighting	1
We would like to track historical energy usage	1
Nothing more	1
Don't know	1
Refused	-

Table 70. Question K1: “What would you say are the main benefits to your organization resulting from your building’s participation in the Market Partners Program?”

Response	Frequency* (n=5)
Attractive to tenants; higher occupancy rate	-
Energy savings	3
Environmental benefits	1
Increased occupant comfort	-
Lower energy bill; saved money, reduced operating costs	2
Lower maintenance costs	-
Marketing benefits	-
Other: Identifying projects	1
ENERGY STAR	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 71. Question K2: “Are there any other benefits besides saving energy that you have seen from the program?”

Response	Frequency* (n=5)
No	1
Attractive to tenants; higher occupancy rate	2
Environmental benefits	-
Increased occupant comfort	-
Lower maintenance costs	2
Marketing benefits	-
Other: It is informative and educational It gives us things to think about	1
Don't know	-
Refused	-

* Multiple responses allowed

Table 72. Question K3: “What would you say are the challenges to adopting Strategic Energy Management?”

Response	Frequency* (n=5)
Age/condition of building	-
Budget limitations	1
Not a high enough return on investment	-
Funding competition from other company priorities	-
High initial cost	3
Lack of staff time to dedicate to pursuing energy-efficiency upgrades	1
Lack of technical knowledge about energy-efficiency equipment	-
Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry	-
Long payback period	1
Other [SPECIFY: _____]	-
Don't know	-
Refused	-

* Multiple responses allowed

Table 73. Question K4: “What do you see as the most significant challenge in adopting Strategic Energy Management?”

Response	Frequency (n=1)
Age/condition of building	-
Budget limitations	-
Not a high enough return on investment	-
Funding competition from other company priorities	-
High initial cost	1
Lack of staff time to dedicate to pursuing energy-efficiency upgrades	-
Lack of technical knowledge about energy-efficiency equipment	-
Lack or inadequate resources, approaches, or tools tailored to the commercial real estate industry	-
Long payback period	-
Other [SPECIFY: _____]	-
Don't know	-
Refused	-

Table 74. Question K5: “What could NEEA do to help your company overcome challenges to adopting Strategic Energy Management goals and practices?”

Response	Frequency (n=5)
Help facilitate unique rebates that we might be not be aware of	1
Provide funding	1
Nothing	-
Don't know	3
Refused	-

Table 75. Question L1a: “Please tell me how important the following items are to you when planning energy-efficiency goals and practices. The first statement is net operating incomes for property. Is this very important, somewhat important, not very important, or not at all important when planning energy-efficiency goals and practices?”

Response	Frequency (n=5)
Very Important	4
Somewhat Important	1
Not Very Important	-
Not at All Important	-
N/A	-
Don't Know	-
Refused	-

Table 76. Question L1b: “Please tell me how important the following items are to you when planning energy-efficiency goals and practices. The first statement is company cash flow. Is this very important, somewhat important, not very important, or not at all important when planning energy-efficiency goals and practices?”

Response	Frequency (n=5)
Very Important	4
Somewhat Important	1
Not Very Important	-
Not at All Important	-
N/A	-
Don't Know	-
Refused	-

Table 77. Question L1c: “Please tell me how important the following items are to you when planning energy-efficiency goals and practices. The first statement is asset value. Is this very important, somewhat important, not very important, or not at all important when planning energy-efficiency goals and practices?”

Response	Frequency (n=5)
Very Important	3
Somewhat Important	2
Not Very Important	-
Not at All Important	-
N/A	-
Don’t Know	-
Refused	-

Table 78. Question L1d: “Please tell me how important the following items are to you when planning energy-efficiency goals and practices. The first statement is total cost of adopting energy efficiency. Is this very important, somewhat important, not very important, or not at all important when planning energy-efficiency goals and practices?”

Response	Frequency (n=5)
Very Important	4
Somewhat Important	1
Not Very Important	-
Not at All Important	-
N/A	-
Don’t Know	-
Refused	-

Table 79. Question L1e: “Please tell me how important the following items are to you when planning energy-efficiency goals and practices. The first statement is marketing and brand positioning. Is this very important, somewhat important, not very important, or not at all important when planning energy-efficiency goals and practices?”

Response	Frequency (n=5)
Very Important	2
Somewhat Important	3
Not Very Important	-
Not at All Important	-
N/A	-
Don’t Know	-
Refused	-

Table 80. Question L1f: “Please tell me how important the following items are to you when planning energy-efficiency goals and practices. The first statement is company profit. Is this very important, somewhat important, not very important, or not at all important when planning energy-efficiency goals and practices?”

Response	Frequency (n=5)
Very Important	3
Somewhat Important	1
Not Very Important	1
Not at All Important	-
N/A	-
Don't Know	-
Refused	-

Table 81. Question L2: “When considering energy-efficiency projects, is your company’s requirement for return-on-investment ROI) less stringent, more stringent, or the same as for other capital investments?”

Response	Frequency (n=5)
Less stringent	-
More stringent	1
The same	3
Don't know	1
Refused	-

Table 82. Question L3: “Does your building have a specific policy that says you should replace worn out equipment with high-efficiency equipment?”

Response	Frequency (n=5)
Yes	3
No policy	1
No, but we have an informal policy	1
Don't know	-
Refused	-

Table 83. Question M1: “Do you have any other feedback about the Market Partners Program that we can provide to NEEA?”

Response	Frequency (n=5)
When engineers do the walk through, they need to put on a owner’s hat when they look at projects. When funding a project, the cost and pay back need to be considered	1
Don't know	4
Refused	-

Appendix G. Survey Scoring Methodologies Based on the CRE SEM Definition

Appendix G: Scoring Methodology per the CRE SEM Definition

Table 1. Scoring Methodology for MPP

SEM Element	Survey Question(s)	Level of SEM implementation			Notes	Explanation of “Some” Implementation Scoring
		Full	Some	None		
Adoption of management-approved energy performance improvement goal at the firm, portfolio, and/or building level;	D1. What is your energy performance improvement goal? D1b. Our records show that your company has adopted an energy performance improvement goal of [PORTFOLIO GOAL]. Is this correct?	D1.1. [GOAL] OR D1b.1. (Yes) D1b.2. No and can correct the goal	D1.1. [GOAL] OR D1b.1. (Yes) D1b.2. No and can correct the goal	All other responses		This element receives a partial score if they have a goal but it was not yet adopted
	D6. Has the goal [INSERT GOAL FROM D1] been formally presented or accepted adopted by the organization? [DO NOT READ LIST]	1. (Yes, presented and accepted)	2. (Yes, presented only) 3. (No, haven't been presented or accepted) 4. (Other [SPECIFY: _____])	All other responses		
Documentation of planned activities to achieve the goal;	E1. What actions have you identified to help improve energy performance in your company in the next six months? These could include all things related to energy such as capital purchases, capital improvements, operations and maintenance changes, training,	one or more of 2-15	one or more of 2-15	All other responses		This element receives a partial score if they have identified practices but they haven't documented them. If NEEA's implementation team documented the practices, this is considered partial

SEM Element	Survey Question(s)	Level of SEM implementation			Notes	Explanation of “Some” Implementation Scoring
		Full	Some	None		
	certifications, other behavioral change efforts, and/or third-party service provider proposals/projects. [DO NOT READ LIST; MULTIPLE RESPONSE; IF NEEDED: “We are only looking for types of projects you plan to implement, not specific details about these projects”]					adoption because they are not yet doing it on their own.
	E4. We are aware that the Market Partner Program documents your energy management actions and practices. Does your company also document energy management activities internally? [RECORD ALL THAT APPLY]	1. (Yes, we document all the practices internally)	2. (NEEA documented all the practices and shared their documentation with our company) 3. (Something else)	All other responses		
Allocation of resources (staff, training or capital) towards the goal;	F3. I’m going to read a list of energy-related activities. Please tell me if your organization has allocated staff, capital, or other resources to each one by answering YES or NO. By allocating staff resources we are referring to anyone who	1. (Yes) on one or more		All other responses	OR	No partial score on this one. It's full implementation if they say "Yes" to F3 OR F5

SEM Element	Survey Question(s)	Level of SEM implementation			Notes	Explanation of “Some” Implementation Scoring
		Full	Some	None		
	works with energy efficiency practices or activities even if that isn’t the only role they have with the company. [READ EACH AND RECORD 1 FOR YES, 2 FOR NO; 96 FOR N/A, 98 FOR DON’T KNOW, 99 FOR REFUSED] [RANDOMIZE a-d]					
	F5. Has your company allocated any additional resources for energy efficiency or energy management?	1. (Yes)		All other responses		
Implementation of planned activities;	MPP documentation from NEEA	At least one activity was implemented during 2013 OR Any response that meets the “Full” criteria for the “Allocation of Resources” element		No activities implemented during 2013 AND Any response that meets the “None” criteria for the “Allocation of Resources” element		No partial score for this element because they have either implemented an activity or allocated resources or they have not.

SEM Element	Survey Question(s)	Level of SEM implementation			Notes	Explanation of “Some” Implementation Scoring
		Full	Some	None		
Regular reporting to management on progress towards goal(s) and effectiveness of SEM practices	G1. Is progress toward your goal communicated to senior management on a regular basis?	1. (Yes)	1. (Yes) 3. (Plan to in the future)	All other responses		Partial scores for: (1) G1 = 3 (2) G1 = 1 AND G2 = 8
	G2. How frequently are updates provided for management about the progress your building is making in reducing energy use?	1. (Daily) 2. (Weekly) 3. (Monthly) 4. (Quarterly) 5. (Twice a year) 6. (Annually) 9. (Other)	1. (Daily) 2. (Weekly) 3. (Monthly) 4. (Quarterly) 5. (Twice a year) 6. (Annually) 8. (Whenever they are needed; no set schedule or timeline) 9. (Other)	All other responses	If Other, must be a regular interval for full adoption	(3) G1 = 1 AND (G2 < 8 OR G2 = 9 and it's a regular interval) AND (G4b = (No) AND G4c = (No) AND G4d = (No))
	G4. Which of the following items do your management reviews include? Do they include ...	G4b (Yes) G4c (Yes) G4d (Yes)	G4b (No), AND G4c (No), AND G4d (No)	All other responses		
Overall	SEM implementation score	100%	20%-80%	0%		

Table 2. MPP Results

Firm	Element 1 Score	Element 2 Score	Element 3 Score	Element 4 Score	Element 5 Score	Total SEM Adoption Score
Firm 1	20%	20%	20%	20%	20%	100%
Firm 3	20%	20%	20%	20%	0%	80%
Firm 4	20%	20%	20%	20%	20%	100%
Firm 5	20%	20%	20%	20%	20%	100%
Firm 6	20%	0%	20%	20%	20%	80%
Firm 7	0%	20%	20%	20%	20%	80%
Firm 9	20%	20%	20%	20%	20%	100%
Firm 10	20%	0%	20%	20%	20%	80%
Firm 11	20%	20%	20%	20%	20%	100%

Table 3. Scoring Methodology for OC

SEM Element	Survey Question(s)	Level of SEM implementation			Notes	Explanation of "Some" Scoring
		Full	Some	None		
Adoption of management-approved energy performance improvement goal at the firm, portfolio, and/or building level;	D1. What is your building's energy performance goal to reduce energy?	D1.1. [GOAL]	D1.1. [GOAL]	All other responses		This element receives a partial score if they have a goal but it was not yet adopted
	D2. When was this goal adopted and accepted by senior management?	1. [RECORD GOAL ADOPTION DATE (MONTH/YEAR): _____]	All other responses	All other responses		
Documentation of planned activities to achieve the goal;	E2. What practices have you identified to help you reduce energy in this building in the next 6 months as a result of the Kilowatt Crackdown?	one or more of 2-15	one or more of 2-15	All other responses		This element receives a partial score if they have identified practices but they haven't documented them. If NEEA's implementation team documented the practices, this is considered partial adoption because they are not yet doing it on their own.
	E4. We are aware that your Kilowatt Crackdown coach helped you document your plans through the Project Bank action plan. Does someone in your building also document energy management practices internally?	1. (Yes, we document all the practices internally)	2. (NEEA documented all the practices and shared their documentation with our company) 3. (Something else)	All other responses		
Allocation of resources (staff, training or capital) towards the goal;	F3. I'm going to read a list of energy-related activities. Please tell me which ones you are aware that staff are engaged in, in this building?	1. (Yes) on one or more		All other responses	OR	No partial score on this one. It's full implementation if they say "Yes" to F3 OR F4
	F4. Are you aware of whether there are any additional resources allocated for energy efficiency or energy management, other than what we've already discussed?	1. (Yes)		All other responses		

SEM Element	Survey Question(s)	Level of SEM implementation			Notes	Explanation of “Some” Scoring
		Full	Some	None		
Implementation of planned activities;	E1. Your Project Bank action plan shows that you have planned or completed implementation of these practices or measures at [INSERT BUILDING NAME]. Were [INSERT PRACTICE1, PRACTICE2, AND PRACTICE3] implemented?	1. (Yes, all correct) 2. (No) to some practices OR Any response that meets the “Full” criteria for the SEM Element “Allocation of Resources”		2. (No) for all practices; All other responses AND Any response meeting the “None” criteria for the SEM Element “Allocation of Resources”	not everyone had three practices to ask about	Full adoption if the documentation is correct and all practices were planned or completed, or if resources were allocations. No partial adoption for this element because they have either implemented practices or allocated resources or they have not.
Regular reporting to management on progress towards goal(s) and effectiveness of SEM practices	G1. Is progress toward your goal communicated to senior management on a regular basis?	1. (Yes)	1. (Yes) 3. (Plan to in the future)	All other responses		Partial scores for: (1) G1 = 3 (2) G1 = 1 AND G2 = 8
	G2. How frequently are updates provided for management about the progress your building is making in reducing energy use?	1. (Daily) 2. (Weekly) 3. (Monthly) 4. (Quarterly) 5. (Twice a year) 6. (Annually) 9. (Other)	1. (Daily) 2. (Weekly) 3. (Monthly) 4. (Quarterly) 5. (Twice a year) 6. (Annually) 8. (Whenever they are needed; no set schedule or timeline) 9. (Other)	All other responses	If Other, must be a regular interval for full adoption	(3) G1 = 1 AND (G2 < 8 OR G2 = 9 and it's a regular interval) AND (G4b = (No) AND G4c = (No) AND G4d = (No))
	G4. Which of the following items do your management reviews include? Do they include ...	G4b (Yes), OR G4c (Yes), OR G4d (Yes)	G4b (No), AND G4c (No), AND G4d (No)	All other responses		
Overall	SEM implementation score	100%	20%-80%	0%		

Table 4. OC Results

City	Building ID	Element Classification					Total SEM Adoption Score	SEM Adoption Classification
		Element 1	Element 2	Element 3	Element 4	Element 5		
Boise	1	None	Full	Full	Full	None	60%	Some
	2	None	Full	Full	Full	None	60%	Some
	3	None	Full	Full	Full	Full	80%	Some
	4	Full	Full	Full	Full	Full	100%	Full
Portland/ Vancouver	5	Full	Full	Full	Full	Full	100%	Full
	6	Some	Full	Full	Full	None	60%	Some
	7	Full	Full	Full	Full	None	80%	Some
	8	Full	Some	Full	Full	Full	80%	Some
	9	Some	Some	Full	Full	Full	60%	Some
	10	Full	None	Full	Full	Full	80%	Some
	11	None	Full	Full	Full	Full	80%	Some
	12	Some	Full	Full	Full	None	60%	Some
	13	Some	Some	Full	Full	Some	40%	Some
	14	Full	Full	Full	Full	None	80%	Some
	15	Some	None	Full	Full	Full	60%	Some
	16	Some	Full	Full	Full	Some	60%	Some
	17	None	Some	Full	Full	Full	60%	Some
	18	None	Full	Full	Full	Full	80%	Some
	19	Full	Full	Full	Full	Full	100%	Full

Appendix H. Survey Scoring Methodologies and Results Based on the SEM Maturity Model

Appendix H: Scoring Methodology Based on the SEM Development Matrix

Table 1. OC Methodology

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
1	Management Commitment	no goal: (D1 = 2) AND (D3 = no other goal)	goal set: D1 = 1 and D2 = 2 OR (D3 = any goal) AND (D5 > 1)	goal adopted: (D1 = 1 and D2 = 1) OR (D3 = any goal AND D5 = 1)	goal communicated: D7 = 1 OR D9 = 1	goal communicated: D7 = 1 OR D9 = 1	goal communicated: D7 = 1 OR D9 = 1
					AND Discussed regularly: F2 = 1	AND Discussed regularly: F2 = 1	AND Discussed regularly: F2 = 1
					AND Regular updates: H4 = 1 OR 2	AND Regular updates: H4 = 1 OR 2	AND Regular updates: H4 = 1 OR 2
						AND Purchase of efficient products: L2 = 1 OR L3 = 1	AND Purchase of efficient products: L2 = 1 OR L3 = 1
						AND Goal Documentation: D6 = 1	AND Goal Documentation: D6 = 1
							AND Additional commitments: D3 = any goal (which is in addition to D1) AND D5 = 1
2	Resources	no energy manager: F1 = 2	no energy manager: F1 = 2	energy manager: F1 = 1 OR team meetings: F2 = 1	team meetings: F2 = 1	energy manager: F1 = 1	energy manager: F1 = 1
		AND no energy team meetings: F2 = 2	AND no energy team meetings: F2 = 2	AND adequate resources: H3 = 1	AND adequate resources: H3 = 1	AND team meetings: F2 = 1	AND team meetings: F2 = 1
		AND no energy-related activities: F3a-h = 2	AND some activities: F3a-h = 1 for at least 1 activity OR F4 = 1			AND adequate resources: H3 = 1	AND adequate resources: H3 = 1

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
		AND no other energy-related activities: F4 = 2					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
3	Energy Review and Analysis	Building does not have a Project Bank action plan	Building has a Project Bank action plan; OR E2 > 1 and < 98	Building has a Project Bank action plan; OR E2 > 1 and < 98	Building has a Project Bank action plan; OR E2 > 1 and < 98	Building has a Project Bank action plan; OR E2 > 1 and < 98	Building has a Project Bank action plan; OR E2 > 1 and < 98
		AND no activities: E2 = 1	AND Building has a Portfolio Manager account	AND Building has a Portfolio Manager account	AND Report progress to mgmt.: G1 =1	AND Report progress to mgmt.: G1 =1	AND Report progress to mgmt.: G1 =1
				NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 2 ACTIVITIES		AND <input type="checkbox"/> Repo regularly: G2 = any of 1-6 or Other and it's a regular interval	AND <input type="checkbox"/> Repo regularly: G2 = any of 1-6 or Other and it's a regular interval
						AND Energy savings reporting: G4a = 1	AND Energy savings reporting: G4a = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
4	Energy KPIs and Targets	no goal: (D1 = 2)	adopted goal: (D1 = 1 AND D2 = 2) OR (D3 = any goal AND D5 = > 1)	adopted goal: (D1 = 1 AND D2 = 1) OR (D3 = any goal AND D5 = 1)	adopted goal: (D1 = 1 AND D2 = 1) OR (D3 = any goal AND D5 = 1)	adopted goal: (D1 = 1 AND D2 = 1) OR (D3 = any goal AND D5 = 1)	adopted goal: (D1 = 1 AND D2 = 1) OR (D3 = any goal AND D5 = 1)
			AND update Portfolio Manager: F3a = 1	AND update Portfolio Manager: F3a = 1	AND update Portfolio Manager: F3a = 1	AND update Portfolio Manager: F3a = 1	AND update Portfolio Manager: F3a = 1

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
5	Action Plans	Building does <i>not</i> have a Project Bank action plan	Building has a Project Bank action plan	AND update mgmt about progress: G4a = 1	AND update mgmt about progress: G4a = 1	AND update mgmt about progress: G4a = 1	AND update mgmt about progress: G4a = 1
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES	AND goals/metrics adjusted if needed: G4d = 1	AND goals/metrics adjusted if needed: G4d = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
				AND update plan as needed: H4 = 1 or 2	AND update plan as needed: H4 = 1 or 2	AND update plan as needed: H4 = 1 or 2	AND update plan as needed: H4 = 1 or 2
					AND prove plan: H1 = 1 OR H1a = 1	AND prove plan: H1 = 1 OR H1a = 1	AND prove plan: H1 = 1 OR H1a = 1
						AND designate responsibility: E6b = 1	AND designate responsibility: E6b = 1
						AND timeframe: E6e = 1	AND timeframe: E6e = 1
							AND endorsed by mgmt.: D2 = 1 OR D5 = 1
							AND measures progress: G4a = 1

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
6	O&M	Project Bank action plan does <i>not</i> contain O&M activities (either planned or implemented)	Project Bank action plan does <i>not</i> contain O&M activities (either planned or implemented)	Project Bank action plan contains O&M activities (planned or implemented)	Project Bank action plan contains O&M activities (planned or implemented)	Project Bank action plan contains O&M activities (planned or implemented)	Project Bank action plan contains O&M activities (planned or implemented)
			NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 1 ACTIVITIES		AND staff assigned: E6b = 1 (Note that E6b is not specific to O&M practices)	AND staff assigned: E6b = 1 (Note that E6b is not specific to O&M practices)	AND staff assigned: E6b = 1 (Note that E6b is not specific to O&M practices)
						AND training resources documented: E6c = 1	AND training resources documented: E6c = 1
						AND timeframe: E6e = 1	AND timeframe: E6e = 1
						AND impacts documented: E6f = 1	AND impacts documented: E6f = 1
7	Monitoring & Analysis	no updates to Portfolio Manager: F3a = 2	updates Portfolio Manager: F3a = 1	updates Portfolio Manager: F3a = 1	updates Portfolio Manager: F3a = 1	updates Portfolio Manager: F3a = 1	updates Portfolio Manager: F3a = 1
				NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 2 ACTIVITIES	AND analyzing savings: F3g = 1	AND analyzing savings: F3g = 1	AND analyzing savings: F3g = 1
						AND proves plan: H1 = 1 OR H1a = 1	AND proves plan: H1 = 1 OR H1a = 1

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
8	Employee Engagement	no activities: F3a-h = 2 for all options AND F4 = 2	some activities: F3a-h = 1 for at least one option OR F4a = any other resource	some activities: F3a-h = 1 for at least one option OR F4a = any other resource	some activities: F3a-h = 1 for at least one option OR F4a = any other resource	some activities: F3a-h = 1 for at least one option OR F4a = any other resource	NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
				AND goal awareness: D7 = 1	AND goal awareness: D7 = 1	AND goal awareness: D7 = 1	AND goal awareness: D7 = 1
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES	AND Engaging tenants: E3 = 1 OR F3e = 1	AND Engaging tenants: E3 = 1 OR F3e = 1
						AND Identifying opportunities: F3b = 1	
9	Regular reporting, review, and assessment	No goal adoption: D2 = 2 AND D5 = 2 or 3	Goal adoption: D2 = 1 OR D5 = 1	Reporting energy savings: F3h = 1	Reporting energy savings: F3h = 1	Reporting energy savings: F3h = 1	Reporting energy savings: F3h = 1
			OR reporting to mgmt.: G1 = 1	AND Reporting to stakeholders: D9 = 1	AND Reporting to stakeholders: D9 = 1	AND Reporting to stakeholders: D9 = 1	AND Reporting to stakeholders: D9 = 1
				AND Energy team meets regularly: F2 = 1	AND Energy team meets regularly: F2 = 1	AND Energy team meets regularly: F2 = 1	AND Energy team meets regularly: F2 = 1
					AND Report progress to mgmt.: G1 = 1	AND Report progress to mgmt.: G1 = 1	AND Report progress to mgmt.: G1 = 1
					AND Review energy policy regularly: H4 = 1	AND Review energy policy regularly: H4 = 1	

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
						AND Review energy performance: G4a = 1	AND Review energy performance: G4a = 1
						AND Improvement recommendations: G4f = 1	AND Improvement recommendations: G4f = 1
						AND Changes to goals/metrics: G4d = 1	AND Changes to goals/metrics: G4d = 1
						AND Resource allocation: G4c = 1	AND Resource allocation: G4c = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
10	Procurement & Design	ROI requirements: L2 = 3	ROI requirements: L2 = 3	ROI requirements: L2 = 3	ROI requirements: L2 = 3	ROI requirements: L2 = 1	ROI requirements: L2 = 1
		AND Equipment policy: L3 = 2	AND Equipment policy: L3 = 2	AND Equipment policy: L3 = 2	AND Equipment policy: L3 = 1 or 3	AND Equipment policy: L3 = 1 or 3	AND Equipment policy: L3 = 1
			NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 1 ACTIVITIES	AND identified efficient equipment measures: E2 = 2			
11	Documentation and Records	Building does <i>not</i> have a Project Bank action plan	Staff have a Portfolio Manager account	Building has a Project Bank action plan	Building has a Project Bank action plan	Building has a Project Bank action plan	Building has a Project Bank action plan
		AND Staff do not use Portfolio Manager		AND Staff use Portfolio Manager	AND Staff use Portfolio Manager	AND Staff use Portfolio Manager	AND Staff use Portfolio Manager

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
				AND Energy goals documented: D6 = 1	AND Energy goals documented: D6 = 1	AND Energy goals documented: D6 = 1	AND Energy goals documented: D6 = 1
				AND Regular reporting: G2 < 7	AND Regular reporting: G2 < 7	AND Regular reporting: G2 < 7	AND Regular reporting: G2 < 7
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES	AND Equipment policy: L3 = 1	AND Equipment policy: L3 = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
12	EMS audit	have not rated current practices: No Portfolio Manager scorecard	rated current practices: Portfolio Manager scorecard	rated current practices: Portfolio Manager scorecard	rated current practices: Portfolio Manager scorecard	rated current practices: Portfolio Manager scorecard	rated current practices: Portfolio Manager scorecard
				AND Attainment to plan: G4a = 1	AND Attainment to plan: G4a = 1	AND Attainment to plan: G4a = 1	AND Attainment to plan: G4a = 1
				AND Reassess plan: H4 = 1	AND Reassess plan: H4 = 1	AND Reassess plan: H4 = 1	AND Reassess plan: H4 = 1
				AND Reassess goals/metrics: G4d = 1	AND Reassess goals/metrics: G4d = 1	AND Reassess goals/metrics: G4d = 1	AND Reassess goals/metrics: G4d = 1
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES	NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 4 ACTIVITIES	NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES

Table 2. OC Results

Building ID	SEM Components 1-12											
	1	2	3	4	5	6	7	8	9	10	11	12
	Management Commitment	Resources	Energy Review and Analysis	Energy KPI and Targets	Action Plans	O&M	Monitoring & Analysis	Employee Engagement	Regular reporting, review, and Assessment	Procurement and Design	Documentation and Records	EMS Audit
1	0	2	1	0	3	2	4	1	0	0	1	1
2	0	1	1	0	1	2	1	1	0	0	1	1
3	2	1	4	2	3	2	4	2	1	0	0	0
4	5	4	4	4	3	2	4	5	3	0	4	1
5	2	2	3	1	3	2	4	5	2	3	2	1
6	1	3	1	1	0	0	4	5	3	0	0	0
7	2	1	1	1	3	2	4	2	2	2	1	1
8	2	2	3	0	3	2	0	5	1	3	4	1
9	2	1	3	0	2	3	0	5	1	0	2	1
10	2	2	4	4	3	2	4	5	2	5	4	1
11	5	1	4	4	5	0	4	5	4	3	4	2
12	1	4	1	1	3	2	4	1	0	5	1	1
13	1	1	3	1	3	2	4	1	1	3	4	1
14	4	4	1	1	0	0	4	5	1	0	0	0
15	1	1	4	1	3	2	1	1	1	3	4	2
16	2	2	4	2	3	2	4	5	2	4	2	1
17	0	2	4	0	3	2	4	1	1	5	1	1
18	0	2	4	0	3	2	0	1	1	0	1	1
19	5	1	4	4	3	2	4	2	3	3	4	1

Table 3. MPP Methodology

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
1	Management Commitment	no goal: (D1 > 1 AND D1b > 2) AND (D3 = no other goal)	goal set: (D1 = 1, OR D1b = 1, OR D1b = 2 and a goal is given) AND not adopted: D6 > 1	goal set: (D1 = 1, OR D1b = 1, OR D1b = 2 and a goal is given) AND adopted: D6 = 1	goal communicated: D8 = 1 OR D10 = 1	goal communicated: D8 = 1 OR D10 = 1	goal communicated: D8 = 1 OR D10 = 1
					AND Discussed regularly: F2 = 1	AND Discussed regularly: F2 = 1	AND Discussed regularly: F2 = 1
					AND Regular updates: H4 = 1 OR 2	AND Regular updates: H4 = 1 OR 2	AND Regular updates: H4 = 1 OR 2
						AND Purchase of efficient products: L1 = 1	AND Purchase of efficient products: L1 = 1
						AND Goal Documentation: D7 = 1	AND Goal Documentation: D7 = 1
2	Resources	no energy manager: F1 = 2	no energy manager: F1 = 2	energy manager: F1 = 1 OR team meetings: F2 = 1	team meetings: F2 = 1	energy manager: F1 = 1	energy manager: F1 = 1
		AND no energy team meetings: F2 = 2	AND no energy team meetings: F2 = 2	AND adequate resources: H3 = 1	AND adequate resources: H3 = 1	AND team meetings: F2 = 1	AND team meetings: F2 = 1
		AND no energy-related activities: F3a-d = 2	AND some activities: F3a-d = 1 for at least 1 activity OR F5 = 1			AND adequate resources: H3 = 1	AND adequate resources: H3 = 1

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
		AND no other energy-related activities: F5 = 2					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
3	Energy Review and Analysis	Firm did not undergo a scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study
		AND no activities implemented	AND tracking consumption: F3d = 1	AND tracking consumption: F3d = 1	AND Report progress to mgmt.: G1 = 1	AND Report progress to mgmt.: G1 = 1	AND Report progress to mgmt.: G1 = 1
				NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 2 ACTIVITIES		AND Report regularly: G3 = any of 1-6, or Other and it's a regular interval	AND Report regularly: G3 = any of 1-6, or Other and it's a regular interval
						AND Energy savings reporting: G5a = 1	AND Energy savings reporting: G5a = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
4	Energy KPIs and Targets	no goal: (D1 > 1 AND D1b > 2) AND (D3 = no other goal)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)
			AND tracking consumption: F3d = 1	AND tracking consumption: F3d = 1	AND tracking consumption: F3d = 1	AND tracking consumption: F3d = 1	AND tracking consumption: F3d = 1
				AND update mgmt about progress: G5a = 1	AND update mgmt about progress: G5a = 1	AND update mgmt about progress: G5a = 1	AND update mgmt about progress: G5a = 1

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES	AND goals/metrics adjusted if needed: G5d = 1	AND goals/metrics adjusted if needed: G5d = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
5	Action Plans	Firm did not undergo a scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study
				AND update plan as needed: H4 = 1 or 2	AND update plan as needed: H4 = 1 or 2	AND update plan as needed: H4 = 1 or 2	AND update plan as needed: H4 = 1 or 2
					AND prove plan: H1 = 1 OR H1a = 1	AND prove plan: H1 = 1 OR H1a = 1	AND prove plan: H1 = 1 OR H1a = 1
						AND designate responsibility: E6b = 1	AND designate responsibility: E6b = 1
						AND timeframe: E6e = 1	AND timeframe: E6e = 1
							AND endorsed by mgmt.: D6 = 1
							AND measures progress: G5a = 1
6	O&M	Firm Partner workbook does not recommend O&M activities from the scoping study	Firm Partner workbook does not recommend O&M activities from the scoping study	Firm Partner workbook recommends O&M activities from the scoping study	Firm Partner workbook recommends O&M activities from the scoping study	Firm Partner workbook recommends O&M activities from the scoping study	Firm Partner workbook recommends O&M activities from the scoping study

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
			NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 1 ACTIVITIES		AND staff assigned: E6b = 1 (Note that E6b is not specific to O&M practices)	AND staff assigned: E6b = 1 (Note that E6b is not specific to O&M practices)	AND staff assigned: E6b = 1 (Note that E6b is not specific to O&M practices)
						AND training resources documented: E6c = 1	AND training resources documented: E6c = 1
						AND timeframe: E6e = 1	AND timeframe: E6e = 1
						AND impacts documented: E6f = 1	AND impacts documented: E6f = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
7	Monitoring & Analysis	no staff resources for monitoring of consumption: F3d = 2	staff resources for monitoring consumption: F3d = 1	staff resources for monitoring consumption: F3d = 1	staff resources for monitoring consumption: F3d = 1	staff resources for monitoring consumption: F3d = 1	staff resources for monitoring consumption: F3d = 1
				NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 2 ACTIVITIES	AND analyzing savings: G5a = 1	AND analyzing savings: G5a = 1	AND analyzing savings: G5a = 1
						AND proves plan: H1 = 1 OR H1a = 1	AND proves plan: H1 = 1 OR H1a = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
8	Employee Engagement	no activities: F3a-d = 2 for all options AND F5 = 2	some activities: F3a-d = 1 for at least one option OR F5a = any other resource	some activities: F3a-d = 1 for at least one option OR F5a = any other resource	some activities: F3a-d = 1 for at least one option OR F5a = any other resource	some activities: F3a-d = 1 for at least one option OR F5a = any other resource	some activities: F3a-d = 1 for at least one option OR F5a = any other resource
				AND goal awareness: D8 = 1	AND goal awareness: D8 = 1	AND goal awareness: D8 = 1	AND goal awareness: D8 = 1
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES	AND Engaging tenants: E3 = 1	AND Engaging tenants: E3 = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
9	Regular reporting, review, and assessment	no goal adopted: D2 = 2 OR D6 > 1	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)	goal adopted: (D1 = 1 and D6 = 1) OR (D3 = any goal AND D6 = 1)
			OR reporting to mgmt.: G1 = 1	AND Reporting to stakeholders: D10 = 1	AND Reporting to stakeholders: D10 = 1	AND Reporting to stakeholders: D10 = 1	AND Reporting to stakeholders: D10 = 1
					AND Energy team meets regularly: F2 = 1	AND Energy team meets regularly: F2 = 1	AND Energy team meets regularly: F2 = 1
						AND Report progress to mgmt.: G1 = 1	AND Report progress to mgmt.: G1 = 1
						AND Review energy policy regularly: H4 = 1	AND Review energy policy regularly: H4 = 1

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
						AND Review energy performance: G5a = 1	AND Review energy performance: G5a = 1
						AND Improvement recommendations: G5f = 1	AND Improvement recommendations: G5f = 1
						AND Changes to goals/metrics: G5d = 1	AND Changes to goals/metrics: G5d = 1
						AND Resource allocation: G5c = 1	AND Resource allocation: G5c = 1
							NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
10	Procurement & Design	ROI requirements: L1 = 3	ROI requirements: L1 = 3	ROI requirements: L1 = 3	ROI requirements: L1 = 3	ROI requirements: L1 = 1	ROI requirements: L1 = 1
			NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 1 ACTIVITIES	AND identified efficient equipment measures: E1 = 2	AND identified efficient equipment measures: E1 = 2		
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES		NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
11	Documentation and Records	Firm Partner workbook does not contain recommended activities from the scoping study	firm has a Portfolio Manager account	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study	Firm Partner workbook contains recommended activities from the scoping study

Component Number	SEM Component	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
		firm does not use Portfolio manager		AND staff resources for monitoring consumption: F3d = 1	AND staff resources for monitoring consumption: F3d = 1	AND staff resources for monitoring consumption: F3d = 1	AND staff resources for monitoring consumption: F3d = 1
				AND Energy goals documented: D7 = 1	AND Energy goals documented: D7 = 1	AND Energy goals documented: D7 = 1	AND Energy goals documented: D7 = 1
				AND Regular reporting: G3 < 7	AND Regular reporting: G3 < 7	AND Regular reporting: G3 < 7	AND Regular reporting: G3 < 7
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES	NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 4 ACTIVITIES	NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES
12	EMS audit	have not rated current practices: No Portfolio Manager scorecard	rated current practices: Portfolio Manager scorecard for at least one building	rated current practices: Portfolio Manager scorecard for at least one building	rated current practices: Portfolio Manager scorecard for at least one building	rated current practices: Portfolio Manager scorecard for at least one building	rated current practices: Portfolio Manager scorecard for at least one building
				AND Attainment to plan: G5a = 1	AND Attainment to plan: G5a = 1	AND Attainment to plan: G5a = 1	AND Attainment to plan: G5a = 1
				AND Reassess plan: H4 = 1	AND Reassess plan: H4 = 1	AND Reassess plan: H4 = 1	AND Reassess plan: H4 = 1
				AND Reassess goals/metrics: G5d = 1	AND Reassess goals/metrics: G5d = 1	AND Reassess goals/metrics: G5d = 1	AND Reassess goals/metrics: G5d = 1
					NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 3 ACTIVITIES	NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 4 ACTIVITIES	NO QUESTIONS IN SURVEY TO ADDRESS LEVEL 5 ACTIVITIES

Table 4. MPP Results

Firm	SEM Components 1-12											
	1	2	3	4	5	6	7	8	9	10	11	12
	Management Commitment	Resources	Energy Review and Analysis	Energy KPI and Targets	Action Plans	O&M	Monitoring & Analysis	Employee Engagement	Regular reporting, Review, and Assessment	Procurement and Design	Documentation and Records	EMS Audit
Firm 1	3	4	4	4	3	2	4	2	3	0	2	1
Firm 3	3	1	1	1	3	2	1	2	3	0	1	1
Firm 4	5	4	4	4	5	4	4	4	3	4	2	1
Firm 5	3	4	4	4	3	2	4	4	3	0	2	1
Firm 6	1	1	4	4	2	2	3	4	2	0	2	1
Firm 7	1	3	4	0	3	2	4	4	1	4	2	2
Firm 9	3	1	4	4	3	2	4	4	3	0	2	2
Firm 10	3	4	4	2	2	2	3	4	3	0	1	1
Firm 11	3	4	3	1	3	2	1	4	3	0	2	1

Appendix I. MPP Survey Findings Memo

MEMORANDUM

To: Rita Siong, NEEA
From: Heidi Ochsner, Kristie Rupper, and Maya Alunkal, Cadmus
Subject: Market Partners Program Survey Findings
Date: October 27, 2014

This memo presents 2013 survey results for firms participating in the Northwest Energy Efficiency Alliance's (NEEA's) Market Partners Program (MPP), also called BetterBricks. Cadmus' main objective for the surveys was to establish MPP cohort's level of Strategic Energy Management (SEM) adoption.¹

NEEA defines SEM for the CRE Initiatives as the following:

1. Adoption of a management-approved energy performance improvement goal at the firm, portfolio, and/or building level;
2. Documented planned activities to achieve the goal;
3. Allocation of resources (staff and training and/or capital) towards the goal;
4. Implementation of planned activities; and
5. Regular management review of progress achieved toward energy performance goal and effectiveness of SEM practices.

NEEA has guidelines for minimum activities for each element that must be in place for a firm to meet the minimum SEM requirements. Cadmus used these guidelines to design the surveys to assess the level of implementation of each SEM element. The team then surveyed MPP firm executives and building managers about their SEM activities. The team scored the survey responses to assign a level of SEM adoption (*no SEM*, *some SEM*, or *full SEM*) to each MPP firm.

Cadmus surveyed nine of the 11 firms involved in the MPP. Five of the nine surveyed firms (56%) met the minimum SEM requirements for all five elements (*full SEM*). The other four firms (44%) met the minimum SEM requirements for at least four of the five elements (with one or more element considered *some SEM*). In comparison, the CRE market characterization revealed

¹ The Commercial Real Estate (CRE) 2013 Office Competition cohort was also surveyed. Those results, including the SEM adoption level findings, are in a separate memo.

that 8% of the market met the minimum SEM requirements for all five elements and another 45% of the market met the minimum requirements for at least three of the five elements.²

The remainder of this memo describes the Cadmus team's methodology and results in more detail.

1 Methodology

1.1 Survey Instrument Design

Cadmus designed survey instruments to assess the level of SEM adoption at the MPP firms. NEEA's SEM definition for the CRE cohorts guided the survey question development. The team surveyed both executives (firm-level respondents) and building managers (building-level respondents) to learn both perspectives about SEM adoption. NEEA implements the MPP at the firm-level; therefore, the firm-level survey guide included questions about program and implementation experiences for SEM across all buildings managed by the firm. The building-level survey guide included questions about specific SEM activities implemented at a given building, for example, verifying that activities recorded in NEEA's documentation were implemented at the building. The firm-level and building-level surveys contained many of the same questions in order to gauge whether respondents' SEM views and practices align.

The survey guides included questions on these topics:

- Understanding of SEM
- Energy performance goal adoption and communication
- Identification, implementation, and documentation of SEM activities
- Allocation of resources towards SEM activities
- Reviewing progress towards the energy performance goal
- Program participation outcomes
- CRE SEM program delivery and value
- NEEA's influence on the decision to adopt SEM
- Barriers and benefits to implementing SEM activities

The survey guides are included as Appendices A and B.

1.2 Survey Frame and Achieved Sample

Eleven firms participated in the MPP in 2013, representing 89 buildings. The Cadmus team completed fourteen surveys between May 22, 2014 and June 27, 2014; nine with firm-level

² Cadmus. *Market Characterization and Establishing the Market Baseline for the Commercial Real Estate Initiative* (Report No. E14-288). June 12, 2014. Portland, OR: Prepared for Northwest Energy Efficiency Alliance. Available online: <http://neea.org/docs/default-source/reports/market-characterization-and-establishing-the-market-baseline-for-the-commercial-real-estate-initiative.pdf?sfvrsn=5>.

respondents and five with building-level respondents. The team contacted each of the unique contacts until the record was resolved or until it had been attempted six times. Only three of the five building-level respondents who completed a survey represented firms that also completed firm-level surveys. The team obtained firm-level results for nine of the 11 firms, meeting 90% confidence with $\pm 6\%$ precision. Table 1 shows the sample frame attrition.

Table 1. MPP Firm and Building Sample Attrition

Description	MPP Firm	MPP Building
Population of unique respondents	11	11
Completed surveys	9	5
Removed*	0	1
No answer, answering machine, respondent not available**	2	5
*Record was removed because the company no longer owned the buildings		
**Attempted six times		

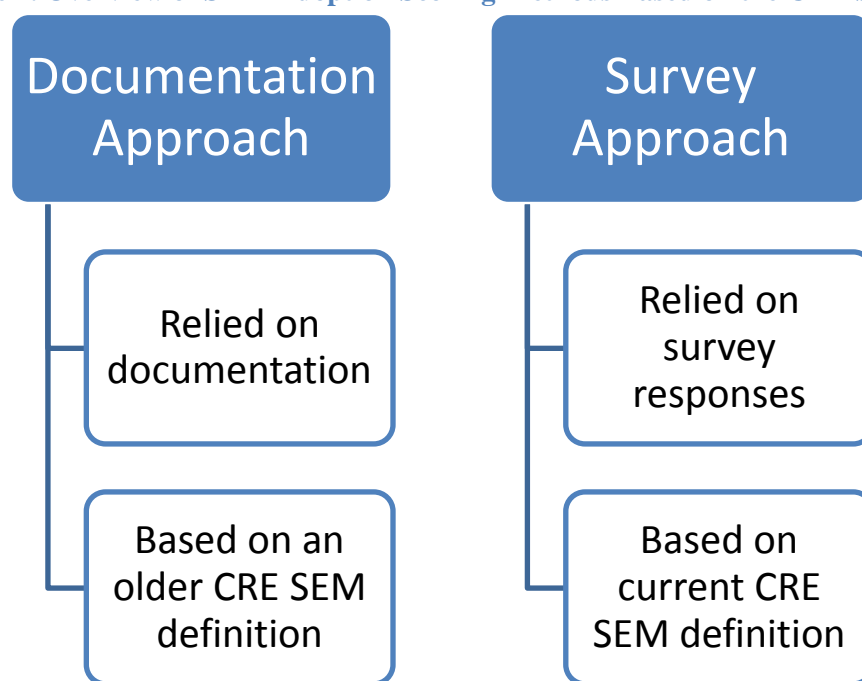
1.3 SEM Adoption Level Scoring

The Cadmus team developed methods to measure each respondents' SEM adoption level based on NEEA's CRE SEM definition and based on NEEA's SEM Development Matrix. Both approaches are described below.

1.3.1 CRE SEM Definition Method

Cadmus developed two scoring methods based on NEEA's CRE SEM definition. The first method relied on the documentation and data collected by NEEA for each firm. The second method relied primarily on the firm-level survey responses. The team then compared the SEM adoption levels from both methods to understand whether the documentation results matched the survey results. If the documentation and survey results aligned, NEEA could rely on their documentation to assess SEM adoption levels in the future and conduct interviews less frequently. The two methodologies are depicted in Figure 1.

Figure 1. Overview of SEM Adoption Scoring Methods Based on the CRE SEM Definition



1.3.1.1 Documentation Approach

NEEA provided Cadmus with SEM progress documentation for each MPP firm. To determine the adoption progress for each firm within the MPP, Cadmus first reviewed the most recent quarterly report; depending on the individual firm, this report was from the third or fourth quarter of 2013. These quarterly reports explicitly stated if a firm was engaged, committed, advancing, or sustaining in the MPP and denoted whether key indicators for each step were in place. Cadmus supplemented this assessment by reviewing a Microsoft PowerPoint presentation provided by NEEA. Both documents detailed whether each firm completed the following steps:

1. Setting energy performance goal(s);
2. Allocating resources at both staff and budgetary levels;
3. Developing an implementation plan;
4. Reporting on energy performance goal(s) progress; and
5. Successfully integrating and documenting energy planning into the company's operational procedures.

A firm met the *full* SEM adoption if they completed all the above steps. Similarly, a firm had *some* SEM adoption if they had at least completed steps one and two. Note that these steps are similar, but are not exactly the same as NEEA's current SEM definition for CRE; the key indicators in the documentation were based on this older CRE SEM definition. For example, NEEA documented the planned activities for each firm, but we did not have evidence to determine whether a firm documents their planned activities on their own.

Cadmus compared the adoption level result based on the documentation to the adoption level result based on the survey responses to assess whether the documentation could be relied on in future studies to measure SEM adoption.

1.3.1.2 Survey Responses Approach

Cadmus developed a scoring method based on the survey responses, aligned with the scoring method used to determine the level of SEM adoption for the market characterization study (Cadmus 2014). This allowed for comparing the MPP cohort SEM adoption level to the market baseline.

Cadmus asked survey questions corresponding to each of the five elements in NEEA's CRE SEM definition, using the responses as evidence of that element's implementation. Firms received a score of 20% for each element where it met the minimum requirements. If a firm met the minimum requirements for all five elements, they received a score of 100% and were classified as having *full SEM* adoption. If a firm met the minimum requirements for one to four elements, they received a score ranging from 20% to 80% and were classified as having *some SEM* adoption. Those firms which did not meet the minimum requirement for any elements were classified as having *no SEM* adoption.

The MPP firm-level survey included questions about activities relevant to each element, except for the implementation of planned activities element, which was included in the MPP building-level survey. The original scoring was designed for combining the firm-level and building-level responses to determine the overall SEM adoption level. However, due to the low response rate from building-level contacts, Cadmus instead relied on firm documentation about activities conducted in 2013 to assess the implementation element.

In addition to measuring the overall SEM adoption level, Cadmus considered more than one criteria and scored firms' progress with each element as *no*, *some*, or *full* adoption. The detailed scoring methodology and results are in Appendix E.

1.3.2 SEM Development Matrix Method

NEEA requested that Cadmus develop a scoring method based on the SEM Development Matrix, which contains 12 SEM components and outlines the criteria for six levels of SEM adoption: 0 - unengaged, 1 - engaged, 2 - systemic, 3 - sustaining, 4- integrated, and 5 - world class.³

NEEA's SEM Development Matrix contains more detail and more activities than the CRE SEM definition. NEEA was designing the SEM Development Matrix concurrently to this study, and the matrix was not available at the time Cadmus designed the survey guides. Cadmus designed the survey guides based on the CRE SEM definition with five elements; therefore, it was not always possible to distinguish between two adjacent matrix scoring levels. However, the goal

³ Leritz, N., Strategic Energy Management, It's Time to Grow Up!; A Maturity Model for SEM Implementation. ACEEE Building Efficiency Summer Study. 2014.

was to design an approach to measure SEM adoption according to the matrix criteria, which could guide future studies. In the future, NEEA or NEEA's contractor can refine this approach by asking survey questions that are more directly based on the matrix criteria.

Cadmus assigned a score of 0 through 5 to each of the 12 components, depending on which level criteria the firm met. A firm that satisfied the Level 2 criteria or higher for all elements would meet the minimum requirements of SEM and were classified as *full SEM* adoption. A firm has *some SEM* adoption if they satisfied the Level 1 criteria or higher for at least six of the 12 elements.

The detailed scoring methodology and results based on the SEM Development Matrix is in Appendix F.

2 Key Survey Findings

The key survey findings are summarized below. The firm-level survey frequencies are in Appendix C and the building-level survey frequencies are in Appendix D.

2.1 Respondent Characteristics

The Cadmus team conducted 14 surveys (nine firm level and five building level). Seven out of nine firm-level respondents and two out of five building-level respondents have been employed at their company for over five years. Six out of nine firm-level respondents and two of five building-level respondents have been in their current role for three or more years. Table 2 provides a profile of survey respondents' length of employment, title, and length of time with current title.

Table 2. Respondent Profile

Characteristic		Firm (n=9)	Building (n=5)
Length of employment	Less than 1 year	0	1
	1 year to less than 3 years	1	1
	3 years to less than 5 years	1	1
	More than 5 years	7	2
Title	Vice president	1	0
	Principal	1	0
	Director of architecture	1	0
	Director of sustainability	2	0
	Director of operations	1	0
	Project director	1	0
	Lead engineer	0	1
	Facility technician	0	1
	Senior property manager	1	1
	Property manager	0	2
	Assistant property manager	1	0
	Less than 1 year	0	2
	1 year to less than 3 years	3	1
Length at current title	3 years to less than 5 years	2	0
	5 years or more	4	2

Notes: Results show responses to questions B1, B2, and B3 in the firm-level and building-level surveys: *How long have you been with [COMPANY]? What is your title? How long have you had the role of [TITLE]?*

Table 3 summarizes how each respondent's job duties relate to energy use at the building. Respondents said they monitor energy use and implement energy-efficiency projects. Six of nine firm-level respondents say they do this for multiple buildings while only one of five building-level respondents manages multiple facilities.

Table 3. Job Duties

Firm (n=9)	Building (n=5)
<i>I am the person who implements energy saving throughout the portfolio.</i>	<i>I am in charge of all buildings' energy performance, operations, and maintenance.</i>
<i>I monitor all energy consumption.</i>	<i>I look at the electric bill and make sure equipment is running efficiently and using efficient light fixtures.</i>
<i>I work with the property managers who manage our buildings. I work with them to implement energy management and changes to our buildings.</i>	<i>My job is to monitor energy efficiency for the building and look for better ways to conserve energy.</i>
<i>I'm in charge of sustainability for our businesses.</i>	<i>Property manager. I analyze energy performance and perform walk-throughs.</i>
<i>I manage our property and reduce energy costs.</i>	<i>I operate the digital control system for the HVAC unit and identify energy-saving projects like lighting and high-efficiency boilers.</i>
<i>Oversee all property and energy for property.</i>	
<i>Oversee the commercial management division for nine properties. The manager's report to me for efficiency and energy control.</i>	
<i>Property manager for the building.</i>	
<i>Responsible for energy efficiency and the implementation of energy efficiency.</i>	

Notes: Results show responses to question B4 in the firm-level and building-level surveys: *How do your job duties relate to energy use at this building?*

2.2 SEM Adoption Level per NEEA's CRE Definition with Five Elements

As discussed above, NEEA's SEM definition for the CRE cohorts is:

1. Adoption of a management-approved energy performance improvement goal at the firm, portfolio, and/or building level;
2. Documented planned activities to achieve the goal;
3. Allocation of resources (staff and training and/or capital) towards the goal;
4. Implementation of planned activities; and
5. Regular management review of progress achieved toward energy performance goal and effectiveness of SEM practices.

Table 4 shows each firm's overall SEM adoption level based on the documentation and survey results. The nine firm-level respondents met the minimum requirements for four or more of the five SEM elements. Five of the nine firms met the minimum requirements for *full SEM* adoption, according to their survey responses.

The adoption level based on the survey responses differed from the adoption level based on the documentation for three of nine surveyed firms. One of these three firms graduated from the MPP before 2013, so their documentation may have been outdated.

The other two firms scored higher from the survey results than from the documentation. The Cadmus team conducted the survey in June 2014, while NEEA’s team last updated the documentation in the fourth quarter of 2013; therefore, the survey results may reflect progress with SEM activities over the past six months (while the documentation does not).

Table 4. Overall SEM Adoption Level by Firm

Firm	Year Began the MPP	SEM Adoption Level per Documentation Method	SEM Adoption Level per Survey Method*
Firm 1	2011	Some	Full
Firm 2	2009 (Graduated)	Full	No survey response
Firm 3	2012	Some	Some
Firm 4	2011	Full	Full
Firm 5	2011	Full	Full
Firm 6	2008 (Graduated)	Full	Some
Firm 7	2009	Some	Some
Firm 8	2008	Some	No survey response
Firm 9	2007 (Graduated)	Full	Full
Firm 10	2012	Some	Some
Firm 11	2011	Full	Some

*These are the results using the CRE SEM definition scoring method based on survey responses

Five of the nine surveyed firms (56%) met the minimum SEM requirements for all five elements (*full SEM*). The other four firms (44%) met the minimum SEM requirements for at least four of the five elements (one or more element is considered *some SEM*). In comparison, the CRE market characterization revealed that 8% of the market met the minimum SEM requirements for all five elements and another 45% of the market met the minimum requirements for at least three of the five elements (Cadmus 2014). The market characterization study included survey data for 40 commercial buildings, and included 11 CRE cohort members. Table 5 compares the results from these studies.

Table 5. Comparison of Market Baseline to MPP SEM Implementation

Level of SEM Implementation	Market Baseline			MPP Firms		
	Number of Total Surveys (n=40)	Percentage of Total Surveys (n=40)	Absolute Precision based on 90% Confidence	Number of Surveyed Firms (n=9)	Percentage of Total Surveyed Firms (n=9)	Absolute Precision based on 90% Confidence
Full SEM (5 components)	3	8%	7%	5	56%	13%
Some SEM	29	72%	12%	4	44%	13%
4 SEM components	7	18%	10%	4	44%	13%
3 SEM components	9	23%	11%	0	0%	N/A
2 SEM components	10	25%	11%	0	0%	N/A
1 SEM component	3	8%	7%	0	0%	N/A
No SEM (0 components)	8	20%	10%	0	0%	N/A
Total	40	100%		9	100%	

The Cadmus team asked all surveyed firms if they intend to fully implement NEEA's five elements of SEM; Table 6 shows that seven of the nine surveyed firms confirmed. One firm-level respondent was not sure if they would fully implement SEM and stated capital resources as a barrier.

Table 6. Intention to Fully Implement SEM

Response	Number of Responses (n=9)
Yes	7
No	0
Don't know	1
No response	1
Total	9

Notes: Results show responses to question C3 in the firm-level survey: *Do you intend to fully implement NEEA's five elements of Strategic Energy Management?*

Table 7 shows that two firm-level respondents plan to fully implement SEM within the next year, four plan to fully implement SEM within one to two years, and one plans to fully implement SEM within two to five years.

Table 7. Planned Timeline for Fully Implementing SEM

Response	Number of Responses (n=9)
Less than one year	2
One year to two years	4
Two year to five years	1
More than five years	0
Not applicable	2
Total	9

Notes: Results show responses to question C5 in the firm-level survey: *When do you plan to have fully implemented Strategic Energy Management? Is it in less than one year, one to two years, two to five years, or more than five years?*

2.2.1 Element 1: Adoption of Management-Approved Goal

NEEA's minimum criteria for the goal adoption element are: (1) the firm has defined a measurable goal and (2) the goal has been adopted by management. The Cadmus team also asked firm-level respondents to rate the extent to which this element was in place; Table 8 compares those results to the survey scoring methodology.

All but one of the nine surveyed firms met the minimum criteria for goal adoption per the survey scoring methodology. The one firm that did not meet the criteria stated that this element was fully in place. Only three of the remaining eight surveyed firms recognized that their goal was fully in place; four felt the goal was mostly in place and one felt the goal was partly in place.

Table 8. Adoption of Management-Approved Goal: Survey Scoring and Firms' Perceptions

Firm	SEM Goal Adoption Level per Survey Scoring Method	Firm's Perception of the Extent that the Element is in Place* (n=9)
Firm 1	Full	Fully in place
Firm 2	N/A	N/A
Firm 3	Full	Mostly in place
Firm 4	Full	Fully in place
Firm 5	Full	Fully in place
Firm 6	Full	Mostly in place
Firm 7	Some	Fully in place
Firm 8	N/A	N/A
Firm 9	Full	Mostly in place
Firm 10	Full	Mostly in place
Firm 11	Full	Partly in place

Notes: Results show responses to question C2a in the firm-level survey: *To what extent is each of the SEM elements in place at your company? Is the identification and adoption of energy performance improvement goals fully in place, mostly in place, partly in place, or not in place?*

The Cadmus team asked respondents to state their energy performance goal set through the MPP. Table 9 shows a comparison of these responses to the goals listed in NEEA's documentation. NEEA's documentation showed that all firms had set goals; however, it only listed the goals for

two of the 11 firms. These two goals did not match the firm-level respondents' goals, and may have been out-of-date.

Table 9. Respondents Stated Goals Compared to NEEA's Documented Goals

Firm	Goal per Survey Response	Goal from Documentation
Firm 1	15% reduction goal	No goal documented
Firm 2	N/A	No goal documented
Firm 3	25% reduction	No goal documented
Firm 4	10% reduction	ENERGY STAR rating at one building, LEED certification for others
Firm 5	10% reduction per year across portfolio for the next two years	No goal documented
Firm 6	ENERGY STAR® certification, LEED certification wherever possible	No goal documented
Firm 7	Close to 40% reduction	50% for one building, and an initial target of 15% for another building
Firm 8	N/A	No goal documented
Firm 9	10% reduction	No goal documented
Firm 10	10% reduction across portfolio	No goal documented
Firm 11	ENERGY STAR certification on all properties	No goal documented

2.2.2 Element 2: Documentation of Planned Activities

NEEA's minimum criterion for the documentation of planned activities element is that a firm documents their activities on their own, without relying on NEEA's documentation. The Cadmus team asked firm-level respondents to rate the extent to which this element was in place; Table 10 compares those results to the survey scoring methodology.

Seven of the nine surveyed firms met the criterion for documenting activities, per the survey response scoring. The two firms that did not meet the minimum criterion responded that this element was either mostly in place or partly in place. Only two of the seven firms that met the minimum criterion recognized that this element was in fully in place. Four of these seven firm-level respondents said the element was mostly in place and one said it was partly in place.

Table 10. Adoption of Documentation of Planned Activities: Survey Scoring and Firms' Perceptions

Firm	SEM Adoption Level per Survey Scoring Method	Firm's Perception of the Extent that the Element is in Place* (n=9)
Firm 1	Full	Fully in place
Firm 2	N/A	N/A
Firm 3	Full	Mostly in place
Firm 4	Full	Fully in place
Firm 5	Full	Mostly in place
Firm 6	Some	Mostly in place
Firm 7	Full	Mostly in place
Firm 8	N/A	N/A
Firm 9	Full	Mostly in place
Firm 10	None	Partly in place
Firm 11	Full	Partly in place

Notes: Results show responses to question C2b in the firm-level survey: *To what extent is each of the SEM elements in place at your company? Is the documentation of planned activities to reach the goals fully in place, mostly in place, partly in place, or not in place?*

2.2.3 Element 3: Allocation of Resources

NEEA's minimum criteria for the allocation of resources element is that a firm has dedicated staff, training, or capital resources towards energy-efficiency projects. The Cadmus team asked firm-level respondents to rate the extent this element is in place; Table 11 compares those results to the survey scoring methodology.

All nine surveyed firms met the criteria for resource allocation, per the survey response scoring. Four firm-level respondents that met the minimum criterion also said that this element was in fully in place. Three firm-level respondents said the element was mostly in place, and two said it was partly in place.

Table 11. Adoption of Allocating Resources: Survey Scoring and Firms' Perceptions

Firm	SEM Adoption Level per Survey Scoring Method	Firm's Perception of the Extent that the Element is in Place (n=9)
Firm 1	Full	Fully in place
Firm 2	N/A	N/A
Firm 3	Full	Fully in place
Firm 4	Full	Fully in place
Firm 5	Full	Fully in place
Firm 6	Full	Mostly in place
Firm 7	Full	Mostly in place
Firm 8	N/A	N/A
Firm 9	Full	Partly in place
Firm 10	Full	Mostly in place
Firm 11	Full	Partly in place

Notes: Results show responses to question C2c in the firm-level survey: *To what extent is each of the SEM elements in place at your company? Is the allocation of staff resources and training or allocation of capital resources fully in place, mostly in place, partly in place, or not in place?*

2.2.4 Element 4: Implementation of Planned Activities

The criterion for the implementation of planned activities was that a firm had implemented an activity during 2013 or that resources had been dedicated to energy projects during 2013.

Table 12 shows the results from reviewing the firm-level survey responses about resource allocation, NEEA's documentation of implemented activities, and the building-level survey responses confirming that activities were implemented. The table also shows the firm-level respondents' perceptions that this element is in place. All 11 firms had either implemented activities or dedicated resources to energy projects during 2013.

Four of the nine firm-level respondents who met the minimum criterion also said that this element was *fully* in place; four said it was *mostly* in place and one said it was *partly* in place.

Table 12. Adoption of Implementation of Activities: NEEA’s Documentation, Survey Scoring, and Firms’ Perceptions

Firm	SEM Adoption Level per Documentation and Survey (n=11)	Firm’s Perception of the Extent that the Element is in Place (n=9)
Firm 1	Full	Fully in place
Firm 2	Full	N/A
Firm 3	Full	Mostly in place
Firm 4	Full	Fully in place
Firm 5	Full	Fully in place
Firm 6	Full	Fully in place
Firm 7	Full	Mostly in place
Firm 8	Full	N/A
Firm 9	Full	Mostly in place
Firm 10	Full	Mostly in place
Firm 11	Full	Partly in place

Notes: Results show responses to question C2d in the firm-level survey: *To what extent is each of the SEM elements in place at your company? Is the ongoing implementation of activities or practices toward reaching the goals fully in place, mostly in place, partly in place, or not in place?*

Cadmus also reviewed the building-level responses to the questions verifying that the activities in NEEA’s documentation were implemented. Table 13 summarizes these responses. Three of the five respondents verified they implemented these activities. The other two respondents verified that they implemented some of the activities, but did not know if other activities had been implemented. No respondents reported that an activity was not in place; therefore, there were no inconsistencies in NEEA’s documentation for implemented activities.

Table 13. Implementation Verification of the Capital Measures and Operational Best Practices in NEEA’s Documentation

Firm	Documented Capital Measures in Place? (n=5)	Documented Operational Best Practices in Place? (n=5)
Firm 2	Yes	Yes
Firm 5	Yes	Yes
Firm 8	N/A*	Yes
Firm 10	N/A*	Don’t know
Firm 11	Don’t know	Yes

Notes: Results show responses to questions E1 and E2 in the building-level survey:

E1. *Our records show that you recently implemented these activities at [INSERT BUILDING NAME] [INSERT PRACTICE 1, PRACTICE2, AND PRACTICE3]. Is this correct?*

E2. *Our records show that in previous years you implemented these operational best practices at [INSERT BUILDING NAME] [INSERT BEHAVIOR1, BEHAVIOR2, AND BEHAVIOR3]. Are these activities still in place?*

* The documentation for the firm’s specific buildings did not list any activities.

2.2.5 Element 5: Reporting to Management

The minimum criteria for the reporting management element required that staff report progress to management on a regular basis, and that those reports included any of the following: (1) the effectiveness of each activity in improving energy performance, (2) whether the allocated resources were adequate, or (3) changes to energy performance goals.

Eight of the nine surveyed firms met the minimum criteria for reporting to management. One firm reported that while they did not update management on progress with energy performance, they did feel that this element was partly in place.

Of the eight firm-level respondents that met the minimum criteria, four said the element was *fully* in place, three said it was *mostly* in place, and one said it was *partly* in place.

Table 14. Adoption of Reporting to Management from the Survey Scoring and from the Firm's Perception

Firm	SEM Adoption Level per Survey Scoring Method	Firm's Perception of the Extent that the Element is in place* (n=9)
Firm 1	Full	Mostly in place
Firm 2	N/A	N/A
Firm 3	None	Partly in place
Firm 4	Full	Fully in place
Firm 5	Full	Partly in place
Firm 6	Full	Mostly in place
Firm 7	Full	Fully in place
Firm 8	N/A	N/A
Firm 9	Full	Fully in place
Firm 10	Full	Fully in place
Firm 11	Full	Mostly in place

Notes: Results show responses to question C2e in the firm-level survey: *To what extent is each of the SEM elements in place at your company? Is the reporting of progress to senior management fully in place, mostly in place, partly in place, or not in place?*

2.3 SEM Adoption Level per NEEA's SEM Development Matrix

The scoring method based on the SEM Development Matrix required that a firm meet or exceed the level two criteria for all 12 matrix components to meet the minimum conditions for *full SEM* adoption. A firm had *some SEM* adoption if they met or exceeded the level one criteria for at least six of the 12 matrix components. Table 15 compares the adoption-level results from the CRE SEM definition to the SEM Development Matrix method.

As shown in Table 15, no firms met the minimum conditions for *full SEM* adoption based on the survey data, but all firms met the minimum conditions for *some SEM* adoption. NEEA recently developed the SEM Development Matrix, and program implementation does not yet directly align with the matrix activities. In addition, Cadmus based the survey questions on NEEA's CRE

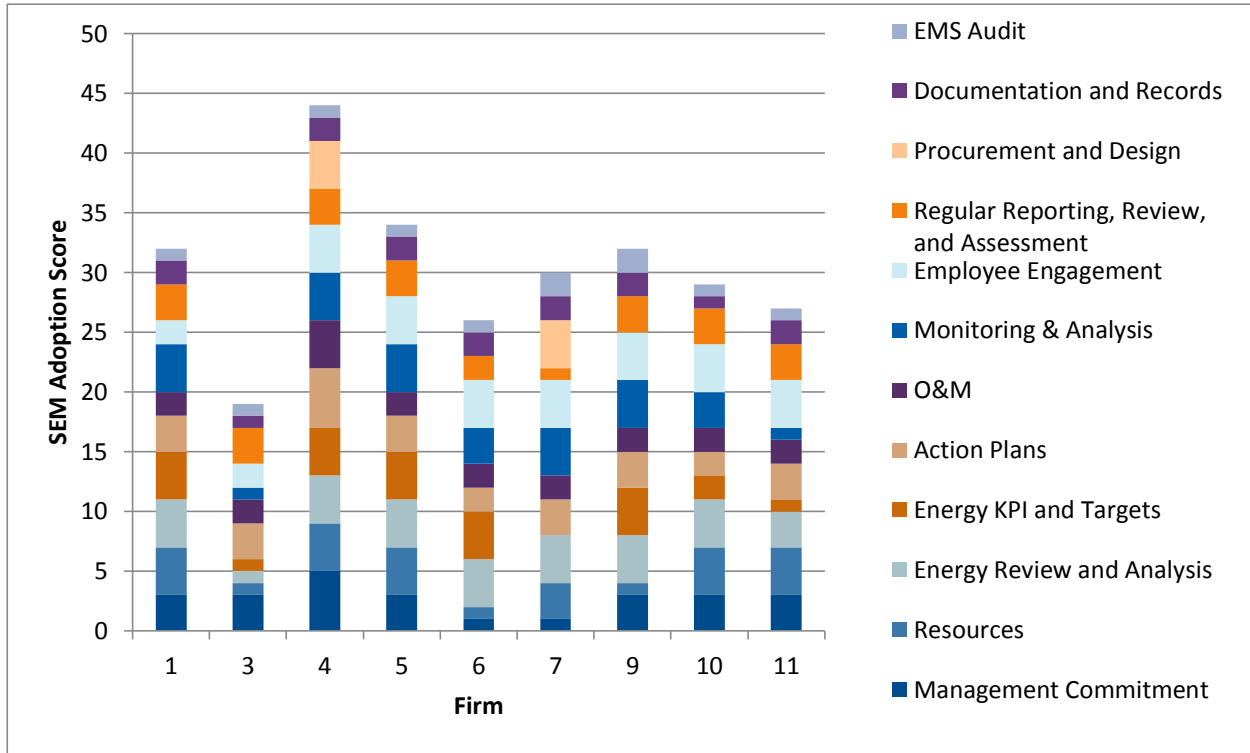
SEM definition, which aligns with program implementation, but these questions did not have the level of detail needed to assess some matrix components.

Table 15. Overall SEM Adoption Level by Firm for the CRE SEM Definition Scoring Method and the SEM Development Matrix Method

Firm	Adoption Level per CRE SEM Definition Method	Adoption Level per SEM Development Matrix Method
Firm 1	Full	Some
Firm 2	N/A	N/A
Firm 3	Some	Some
Firm 4	Full	Some
Firm 5	Full	Some
Firm 6	Some	Some
Firm 7	Some	Some
Firm 8	N/A	N/A
Firm 9	Full	Some
Firm 10	Some	Some
Firm 11	Full	Some

Figure 2 shows the scores by component for each of the firms with survey responses. Firms received the lowest scores for components that did not have sufficient corresponding survey questions to properly assess the extent of adoption. For example, the survey did not include many questions specifically about procurement and design activities, and seven of the nine firms did not meet or exceed the level 1 criteria for this component (and received a score of 0). However, these components without sufficient survey questions were likely also not included or emphasized during program implementation. Detailed results for each component are in Appendix F.

Figure 2. Development Matrix SEM Adoption Score by Component for Each Survey Respondent

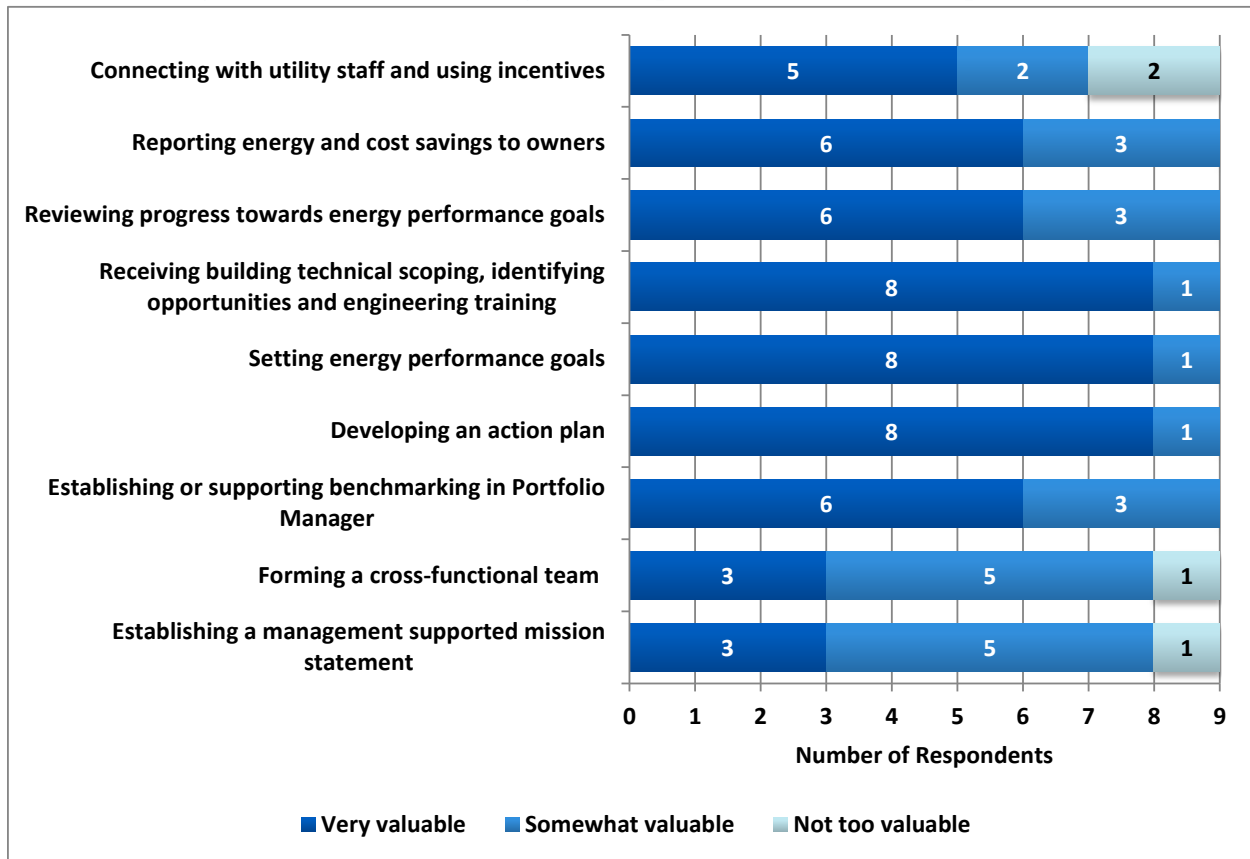


2.4 Program Components

In addition to asking respondents about their SEM activities, Cadmus asked respondents to rate how valuable program components were in helping them meet their energy performance goals. The team included different components for each audience type.

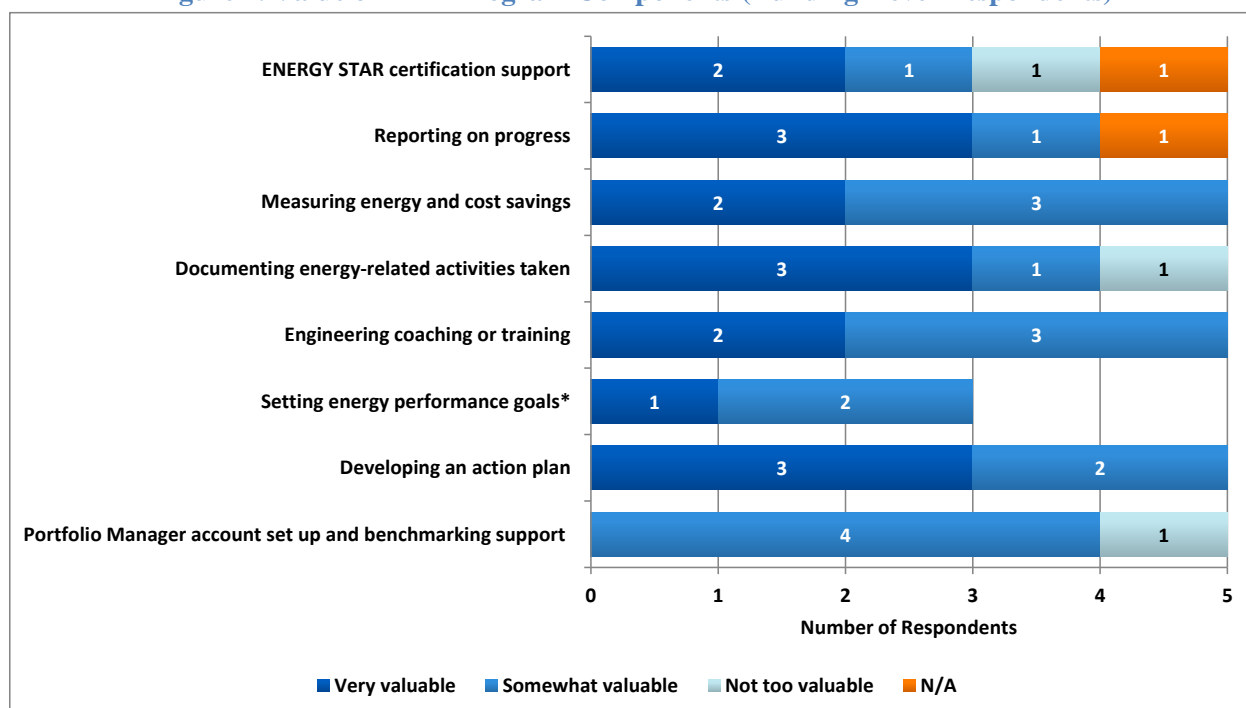
Figure 3 shows the value of each component to the MPP firm-level respondents in reducing energy use, and Figure 4 shows the value of each component to the MPP building-level respondents. MPP firm-level respondents said the technical scoping, setting energy performance goals, and creating an action plan were the most valuable program components (eight of nine respondents reported these components as *very valuable*, and one said they are *somewhat valuable*). The building-level respondent results were mixed, which may reflect the program design to target implementation at the firm level.

Figure 3. Value of MPP Program Components (Firm-Level Respondents)



Notes: Results show firm-level responses to question I1 in the firm-level survey: *I would like you to rate the value of different program components in helping your organization improve its energy performance. Thinking about your overall experience with program support in...[INSERT EACH STATEMENT], would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?* (n=9)

Figure 4. Value of MPP Program Components (Building-Level Respondents)



Notes: Results show responses to question I7 in the building-level survey: *I'm going to ask some questions about the value of different Market Partners Program components in helping you reduce energy usage. Thinking about your overall experience with program support in ...[INSERT EACH STATEMENT], would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?* (n=5) *Only respondents who indicated they set energy performance goals in a previous question answered this question.

Cadmus asked respondents who said a component was *not too valuable* why they gave that response (no respondents rated any components as *not at all valuable*). Table 16 shows the reasons MPP firm-level respondents said *not too valuable* and Table 17 shows these reasons for the MPP building-level respondents. One firm-level respondent said a component was *not too valuable* because they have not finalized the management support mission statement, one said it was because they are not a big organization, and two firm-level respondents said it was because they did not use the component. One building-level respondent said the component was *not too valuable* because it was not necessary and one said the item was not beneficial and they did not use it or need it.

Table 16. Reasons for Low Value Rating from MPP Firm-Level Respondents

Program Component	Reason for Low Value Rating
Establishing a management supported mission statement (n=1)	<i>Never really finalized that piece of it. But it was still successful.</i>
Forming a cross-functional team (n=1)	<i>We just are not a big organization.</i>
Connecting with utility staff and using incentives (n=2)	<i>We didn't ask for that and it just didn't happen. I'm not sure why.</i> <i>We didn't make many connections for rebates.</i>
Notes: Results show responses to question I2 in the firm-level survey: <i>Can you tell me the reasons you said that [INSERT ANSWERS FROM 0 THAT WERE 3 or 4] were not very valuable components of the program?</i> (n=4)	

Table 17. Reasons for Low Value Rating from MPP Building-Level Respondents

Program Component	Reason for Low Value Rating
Portfolio Manager account set up and benchmarking support (n=1)	<i>In my situation it is minimal.</i>
Documenting energy-related activities taken (n=1)	<i>With this being the only thing involved, it was not a benefit. Just didn't need it or use it.</i>
ENERGY STAR certification support (n=1)	<i>To me in my situation it is minimal.</i>
Notes: Results show responses to question I8 in the building-level survey: <i>Can you tell me the reasons you said [INSERT ANSWERS FROM I7 THAT WERE 3 or 4] were not very valuable components of the program?</i> (n=3)	

Cadmus asked firm-level respondents what program components or assistance was valuable. Five respondents provided a response (Table 18) and four did not know. Three out of five said having staff support was valuable, one respondent said they provided a full overview of the building, and one respondent said they provided creative solutions and that the Road Map was useful.

Table 18. Valuable Components for MPP Firm-Level Respondents

Response	Number of Responses (n=5)
Having a resource/staff support	3
Focus on all components for a full overview of the building.	1
The creativity solutions and ability to brainstorm ideas and the Road Map was very helpful.	1
Notes: Results show responses to question I3 in the firm-level survey: <i>Are there other components or assistance you received from the program that you found valuable?</i>	

2.4.1 Tools to Motivate Adoption of SEM

Cadmus asked respondents what tools NEEA could offer to motivate commercial real estate companies to adopt energy management activities. Respondents provided a variety of answers, and several mentioned providing information (Table 19 summarizes the responses). Two building-level respondents did not know what tools were useful and two firm-level respondents said that none of the tools were useful.

Table 19. Potential Useful Tools NEEA Could Provide

Firm (n=7)	Building (n=3)
<i>Continue to try to get managers and owners to understand the financial benefit. That capital investment is worthwhile.</i>	<i>Energy efficiency ones, case study-related seminars.</i>
<i>ENERGY STAR and benchmarking and the training was very helpful.</i>	<i>Getting people interested.</i>
<i>Greater, more detail on how to present projects to owners.</i>	<i>Lighting and HVAC operations seminars.</i>
<i>Just continue to be a conduit for information.</i>	
<i>Resources in training and information on new resources available.</i>	
<i>The competition is doing individual participant collaborative participation.</i>	
<i>To have the city come out more and point out what could be done differently.</i>	
<i>Green is the new black. Hard to keep up with it. It is changing so much so fast.</i>	

Notes: Results show responses to question I6 of the firm-level survey and question I5 of the building-level survey.

Question I6: *What other tools, information, or training can NEEA and BetterBricks offer to motivate commercial real estate owners and managers to adopt Strategic Energy Management?*

Question I5: *What tools or seminars and workshops can NEEA offer to motivate building engineers, operators or facility managers to adopt energy management activities?*

2.4.2 Tools to Encourage Coordination Between Owners and Building Engineers

The team asked respondents what tools or strategies should be included in MPP to encourage more coordination between building owners and managers and building engineers or operators. Firm-level respondents mentioned getting the stakeholders together and creating cross-functional teams. One building-level respondent said managers need to coordinate, and one said there should be more variety in online classes. Six total respondents (four firm-level and two building-level) did not know what would be helpful. Table 20 includes all the responses.

Table 20. Other Helpful Tools to Encourage Coordination Between Owners and Building Engineers

Firm (n=5)	Building (n=3)
<i>An easy way that pencils. So everyone is on the same page.</i>	<i>Managers need to take the lead in coordination. The resources are there, we just need to take advantage of them.</i>
<i>Cross-functional team or creating a team environment.</i>	<i>No cost for implementing recommendations.</i>
<i>Getting us together, open dialog form.</i>	<i>Offer classes or online classes. Offer a variety of classes.</i>
<i>Incentivizing building operators is not done in our organization. It could be discussed, or its importance. Not all of our operators have access to more information.</i>	
<i>More technical training for property managers from engineers.</i>	

Notes: Results show responses to questions I7 in the firm-level survey and I6 in the building-level survey.

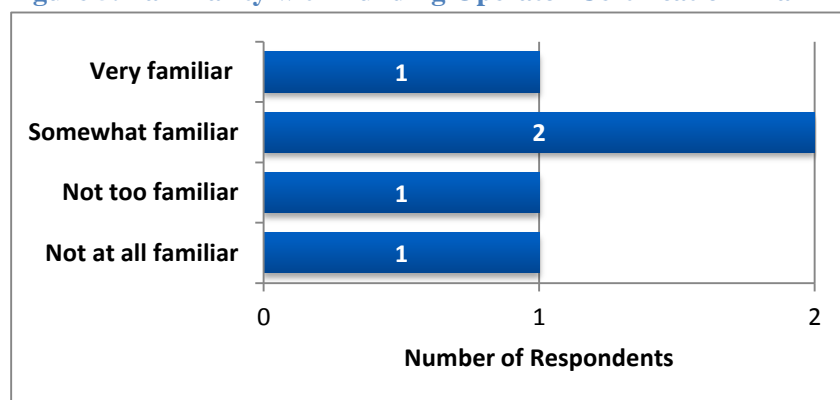
Question I7: *What tools or strategies should be included in the Market Partners Program to encourage more coordination between property managers and building engineers or operators?*

Question I6: *What tools or strategies should be included in the Market Partners Program to encourage more coordination between property managers and building engineers or operators?*

2.4.3 Building Operator Certification Training

The team asked building-level respondents how familiar they are with Building Operator Certification training offered by NEEA. One respondent said *very familiar*, two were *somewhat familiar*, one was *not too familiar* and one was *not at all familiar* (Figure 5).

Figure 5. Familiarity with Building Operator Certification Training



Notes: Results show responses to question I1 in the building-level survey: *How familiar are you with Building Operator Certification training offered by NEEA?* (n=5)

Of the four respondents who were *very familiar*, *somewhat familiar*, or *not too familiar*, one had attended the training and one said someone else in their company had attended. The respondent who attended the training said the most valuable part of the training was the “*overall training on fundamentals.*”

2.4.4 Other Seminars and Workshops

Cadmus asked respondents if they had attended other seminars or workshops about energy management offered by other organizations. Six out of nine firm-level respondents and four of five building-level respondents said they had attended workshops sponsored by other organizations.

2.5 Motivation

Cadmus asked MPP firm-level respondents why their companies participated in MPP. The most common reason was to save energy, followed by staying competitive in the industry and meeting performance goals. The full list of reasons are in Table 21.

Table 21. Reasons for Participating in the MPP

Motivator	Firm (n=9)
Save energy and money through reducing operating costs	3
To stay competitive in the industry	2
To meet our energy performance goals	2
Meeting with the utility company	1
They offer more to our client and sell the value	1
We are a member of Seattle 2030 District	1

Notes: Results show responses to question J1 in the firm-level survey: *What motivated your company to participate in the Market Partners Program?*

Responses exceed number of respondents because multiple responses were accepted.

2.5.1 Activity Level

Firm-level respondents described their activity before the program differently from building-level respondents. Only one of five building-level respondents described their buildings activity level as *very active* or *somewhat active* before the program, while seven of nine firm-level respondents reported this activity level (Table 22).

Table 22. Activity Level

Activity Level	Firm (n=9)	Building (n=5)
Very active	1	1
Somewhat active	6	0
Not too active	1	1
Not active at all	1	2
Don't know	0	1

Notes: Results show responses to question J2 in the firm-level survey and question J2 in the building-level survey.

Question J2: *Before participating in this program, how active was your company in managing energy?*

Question J2: *Before participating in the Market Partners Program, how active was this building in managing energy?*

2.5.2 Participation in Utility-Sponsored Rebate Programs

Cadmus asked respondents if they had participated in other utility-sponsored rebate programs before participating in MPP. The results differed between respondent types. Firm-level respondents reported participation at a higher rate (six of nine) than building-level respondents (two of five). Table 23 lists the programs respondents had participated in prior to MPP. BetterBricks and ENERGY STAR were the top answers from firm-level respondents, while one building-level respondent mentioned an energy-efficiency equipment program and one mentioned an Idaho Power lighting program.

Table 23. Utility-Sponsored Rebate Programs

Rebate Programs	Firm* (n=6)	Building (n=2)
Better Bricks	2	0
Energy efficiency equipment	1	1
Avista rebate program	1	0
Idaho Power lighting program	0	1

Notes: Results show responses to question J3 in the firm-level survey and question J3 in the building-level survey. *Three responses were removed from the firm level answers because they are not utility-sponsored rebate programs. One response was LEED and two responses were ENERGY STAR.

Question J3: *Did your company participate in other utility-sponsored energy efficiency programs before participating in NEEA's Market Partners Program??*

Question J3: *Did this building participate in other utility-sponsored energy efficiency rebate programs before participating in NEEA's Market Partners Program?*

2.5.3 Program Influence

All nine firm-level respondents said they will participate in utility-sponsored energy-efficiency programs more in the future as a result of their participation in MPP. These same nine respondents said that *some* of the projects they implemented would have been implemented in the absence of MPP.

2.6 Building Upgrades

Cadmus asked building-level respondents if they had conducted any major building upgrades in the last two years. Two of the five respondents said they had upgraded their heating or cooling systems. Three said they want to do more to manage energy at their building, including the following projects:

- Web-based HVAC control system
- Update some of the HVAC controls and replace more of the outdated lighting
- Track historical energy usage

2.7 Barriers

Cadmus asked respondents to discuss challenges to adopting SEM (responses shown in Table 24.) The most common challenge mentioned by firm-level respondents was budget limitations (three of nine) and the top answer from building-level respondents was high initial cost (three of five).

Table 24. Challenges to Implementing Activities Identified by the Scoping Study

Challenges	Firm (n=9)	Building (n=5)
Budget limitations	3	1
Funding competition from other company priorities	1	0
High initial cost	1	3
Lack of knowledgeable staff to support energy-efficiency best practices	2	0
Lack of staff time to dedicate to energy-efficiency training or implementation	1	1
Long payback period	0	1
For older buildings it is difficult to ask for capital investment, the return-on-investment is low, and must work with utility company to find rebates	1	0
Organization capacity; we don't have the people in place to implement plans	1	0
No challenges	1	0

Notes: Results show responses to question K3 in the firm-level and in the building-level survey. The question wording was the same in both surveys.

Question K3: *What would you say are the challenges to adopting Strategic Energy Management?*

Responses exceed number of respondents because multiple responses were accepted.

The team asked respondents how NEEA could help their company overcome challenges. Half of the respondents did not have an answer (seven of 14 total). The most frequent answer was more training and education (two of 14; Table 25).

Table 25. Ways to Help Companies Overcome Challenges to Adopting SEM

Ways to Overcome Challenges	Firm (n=9)	Building (n=5)
More training and education	2	0
Continue to be a conduit to connecting us with good companies to help the business with energy efficiency	1	0
Continue to publicize the need and the possibilities in SEM so our clients can recognize it	1	0
Help managers put together projects or proposals to present to or pitch to owners	1	0
Help facilitate unique rebates that we might not be aware of	0	1
Provide funding	0	1
Nothing/don't know	4	3

Notes: Results show responses to question K6 in the firm-level survey and question K5 in the building-level survey.

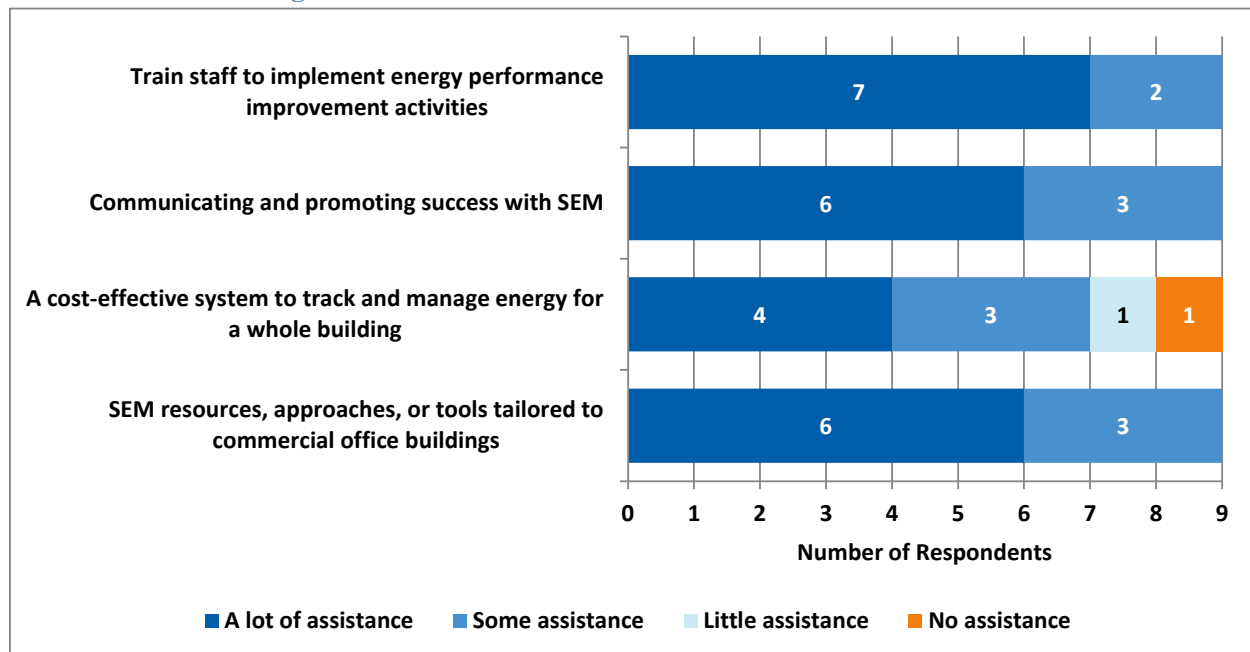
Question K6: *What could NEEA/BetterBricks do to help your company overcome challenges to adopting Strategic Energy Management practices??*

Question K5: *What could NEEA do to help your company overcome challenges to adopting Strategic Energy Management goals and practices?*

2.7.1 Assistance from NEEA

The team asked firm-level respondents to indicate how much assistance they received from NEEA in several areas. Respondents reported receiving *some assistance* or *a lot of assistance* with each component except for a cost-effective system to track and manage energy for a whole building. One respondent said they received *little assistance* and one said they received *no assistance* with this component. The full results are in Figure 6.

Figure 6. Level of Assistance from NEEA and BetterBricks



Notes: Results show responses to question K5 in the firm-level survey: *Please tell me the extent of assistance you received from NEEA and BetterBricks in the following areas?* (n=9)

2.8 Benefits

Cadmus asked respondents to identify the main benefits to their organization resulting from participating in MPP. Respondents gave a wide variety of answers. The top answer both groups mentioned was *energy savings* (Table 26). The firm-level respondents mentioned marketing benefits as a top benefit, but this was not mentioned by any of the building-level respondents.

Table 26. Benefits Resulting from Participation in the Market Partners Program

Benefits	Firm (n=9)	Building (n=5)
Energy savings	6	3
Lower energy bill; saved money, reduced operating costs	2	2
Lower maintenance costs	2	0
Marketing benefits	3	0
More effective organization across roles	2	0
Attractive to tenants; higher occupancy rate	2	0
Attractive to owners	1	0
Environmental benefits	0	1
Show leadership to our clients and competitors	1	0
Tracking tools	1	0
Identifying projects	0	1
ENERGY STAR	0	1

Notes: Results show responses to question K1 in the firm-level survey and question K1 in the building-level survey.

Question K1: *What would you say are the main benefits to your organization resulting from your participation in the Market Partners Program?*

Question K1: *What would you say are the main benefits to your organization resulting from your building's participation in the Market Partners Program?*

Responses exceed number of respondents because multiple responses were accepted.

The team asked respondents if there were benefits in addition to saving energy, and all but one respondent mentioned other benefits (Table 27). The top response was providing a property that is more attractive to tenants and increases the occupancy rate. They also cited lower maintenance costs as a top benefit. Marketing benefits were mentioned by firm-level respondents but were not mentioned by building-level respondents.

Table 27. Benefits Besides Saving Energy

Other Benefits	Firm (n=9)	Building (n=5)
Attractive to tenants; higher occupancy rate	6	2
Lower maintenance costs	4	2
Marketing benefits	3	0
Increased occupant comfort	1	0
A willingness to do more sustainability reduction	1	0
It helps us focus on sustainability and recycling	1	0
ENERGY STAR	0	1
It is informative and educational; it gives us things to think about	0	1
No other benefits besides saving energy	0	1

Notes: Results show responses to question K2 in the firm-level survey and the building-level survey. The question wording was the same in both surveys.

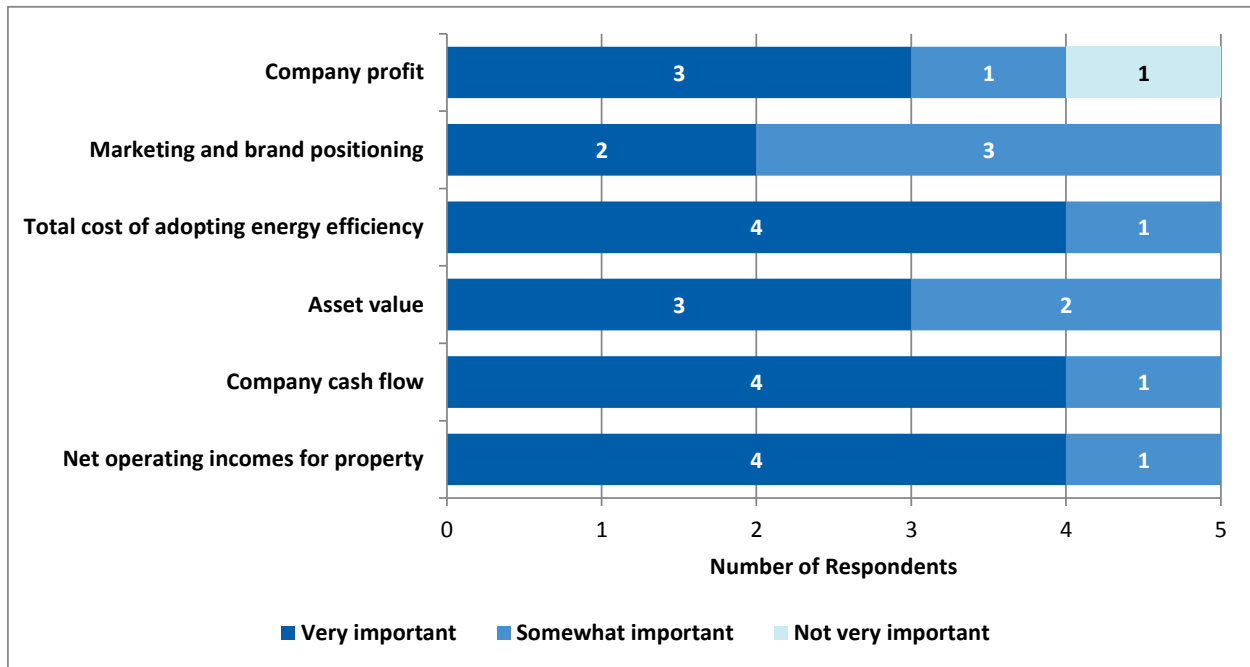
Question K2: *Are there any other benefits besides saving energy that you have seen from implementing Strategic Energy Management?*

Responses exceed number of respondents because multiple responses were accepted.

2.9 Business Goals and Drivers

Building-level respondents identified the importance of various business items when planning energy-efficiency goals and practices (Figure 7). Respondents listed three items as *very important*: total cost of adopting energy efficiency, company cash flow, and net operating incomes for property.

Figure 7. Business Drivers



Notes: Results show responses to question L1 in the building-level survey: *Please tell me how important the following items are to you when planning energy-efficiency goals and practices.* (n=5)

2.10 Final Feedback About the Market Partners Program

The team asked a final question about whether respondents had additional feedback about the program. Seven firm-level respondents and one building-level respondent provided additional feedback (Table 28). The feedback from firm-level respondents was all positive with one respondent who said it was a “great experience” and one respondent who said it was a “valuable program.” The only feedback from building-level respondents was one respondent who said that engineers need to consider costs when they provide energy assessments.

Table 28. Additional Feedback

Firm (n=7)	Building (n=1)
<i>Drive companies forward and take on more efficiency projects.</i>	<i>When engineers do the walk-through they need to put on an owners hat when they look at projects. When funding a project the cost and payback need to be considered.</i>
<i>Great experience</i>	
<i>I was so impressed with quality and open-mindedness to conserving energy.</i>	
<i>It was extremely helpful and a great value. We're appreciative even though we didn't make the progress we had hoped.</i>	
<i>Valuable program.</i>	
<i>Very good program, but need to meet more frequently.</i>	
<i>Your staff went the extra mile almost to the point of bugging but in a good way.</i>	

Notes: Results show breakdown of responses to question M1 in both the firm-level the building-level survey. The question wording was the same in both surveys.

Question M1: *Do you have any other feedback about the Market Partners Program that we can provide to NEEA??*

3 Conclusions and Recommendations

3.1 SEM Adoption

Cadmus has the following conclusions and recommendations based on the SEM adoption level findings.

- ***MPP SEM adoption levels are higher than the market baseline.*** Five of the nine surveyed firms (56%) met the minimum SEM requirements for all five elements (*full SEM*). The other four firms (44%) met the minimum SEM requirements for at least four of the five elements (one or more element is considered *some SEM*). In comparison, the CRE market characterization revealed that 8% of the market met the minimum SEM requirements for all five elements and another 45% of the market met the minimum requirements for at least three of the five elements (Cadmus 2014).
- ***Firms' perception of progress with SEM elements was often less than what the survey scoring indicated.*** Firms that met the minimum criteria for SEM elements regularly reported that the element was less than fully implemented. For example, all nine surveyed firms met the minimum criteria for resource allocation, but five firms said the element was not yet fully in place. These responses either reflect firms' desire to do more or a perceived expectation that they should do more with each component. Responses also imply that firm executives are not aware of NEEA's expectations for each component.
 - ***Recommendation:*** NEEA should consider communicating the SEM adoption level results based on the CRE SEM definition with the participating firms to acknowledge

- their success with SEM and to provide them with feedback on which elements they should focus on to further progress in the program.
- ***NEEA's documentation provided some useful information on SEM progress, but did not contain all of the required information to assess SEM adoption using the CRE SEM definition.*** For example, the documentation noted that all firms adopted goals; however, the goals were only documented for two of the 11 firms. The goals that were documented did not align with the goals reported by the firm-level respondents and may have been out-of-date.
 - ***Recommendation:*** NEEA should consider measuring SEM adoption using data collected by the program implementer. NEEA could update their documentation protocols to specify the type of data the implementer should collect for each element and how often to update the data in order to measure SEM adoption on an annual (or even quarterly) basis.
 - ***Recommendation:*** NEEA should consider documenting and updating each firm's goals. The evaluation could measure a firm's progress towards its goal using an individual regression model for each firm.
 - ***NEEA's SEM Development Matrix provides guidance to implement SEM and measure SEM adoption above and beyond the minimum activities in the CRE SEM definition.*** NEEA recently developed the SEM Development Matrix, and program implementation was not directly based on these criteria at the time the survey was administered to measure SEM adoption. However, the matrix will be a useful tool to guide future program implementation and SEM adoption measurement as more firms meet the minimum criteria for full SEM adoption and advance beyond the minimum SEM activities.
 - ***Recommendation:*** NEEA should consider aligning program implementation guidance and documentation with the SEM Development Matrix, and having future studies measure progress against the matrix activities.

3.2 Program Feedback

Cadmus has the following conclusions and recommendations based on the survey findings.

- ***Firm-level respondents thought the technical scoping, setting energy performance goals, and creating an action plan were very valuable program components.*** Eight of nine respondents reported these components as *very valuable*, while the last respondents reported these components as *somewhat valuable*.
- ***Firm-level respondents said that forming a cross-functional team and establishing a management-supported mission statement were somewhat valuable program***

components. Three of nine respondents said these components are *very valuable*, while five said they are *somewhat valuable*, and one said they are *not too valuable*.

- **Recommendation:** NEEA should consider reviewing firms' implementation of these components in more detail and look for ways to make these components more useful or relevant to firms.
- **All nine firm-level respondents said that some of the projects they implemented would have been implemented in the absence of MPP.** All nine firm-level respondents also said they will participate in utility-sponsored energy-efficiency programs more in the future as a result of their participation in MPP.
 - **Recommendation:** NEEA should continue recommending utility and local government rebate programs and prioritize rebated measures for the MPP firms.
- **The most frequently mentioned challenges for adopting SEM were budget limitations and high initial cost.** Budget limitations was the most frequently mentioned challenge by firm-level respondents (three of nine) while high initial costs was the most frequently mentioned challenge by building-level respondents (three of five).
 - **Recommendation:** In addition to continuing to recommend rebate programs to the MPP firms, NEEA should consider partnering with a financial institution to offer zero or low interest loans for energy-efficiency projects.
- **Firm-level respondents were more likely to report program components as very valuable than building-level respondents.** This could reflect the program design to target implementation at the firm-level.
 - **Recommendation:** NEEA should consider encouraging firm executives to work more closely with building managers on SEM activities. For example, firm executives could meet with building managers quarterly to discuss SEM goals and activities. If the building managers have more awareness about SEM, this could increase savings and ensure that savings persist.

4 Next Steps

Cadmus is computing the firms' annual energy savings, looking for trends in energy savings that may be dependent on SEM adoption level results, or on the adoption of specific SEM elements. Cadmus described the results from these analyses in a draft report delivered to NEEA on August 20, 2014.

Appendix J. OC Survey Findings Memo

MEMORANDUM

To: Rita Siong, NEEA
From: Heidi Ochsner, Kristie Rupper, and Maya Alunkal, Cadmus
Subject: Office Competition Survey Findings
Date: October 27, 2014

This memo presents 2013 survey results for buildings participating in the Northwest Energy Efficiency Alliance (NEEA) Office Competitions (OC) Initiative, also called Kilowatt Crackdown. The main objective with the surveys was to establish the level of Strategic Energy Management (SEM) adoption by the OC cohorts.¹

NEEA defines SEM as having five elements. These are:

1. Adoption of a management-approved energy performance improvement goal at the firm, portfolio, and/or building level;
2. Documented planned activities to achieve the goal;
3. Allocation of resources (staff and training, capital, or both) towards the goal;
4. Implementation of planned activities; and
5. Regular management review of progress achieved toward energy performance goal and effectiveness of SEM practices.

NEEA has guidelines for minimum activities for each element that must be in place for a building to meet the SEM requirements. Cadmus used this guideline to design survey questions to assess the level of implementation of each SEM element. The team then surveyed building managers about their SEM activities, scoring their responses to assign a level of SEM adoption (*no SEM*, *some SEM*, and *full SEM*) to each OC building.

Cadmus completed surveys with 19 of the 53 unique building contacts in OC. The team contacted each of the unique contacts until the record was resolved or until it had been attempted six times. The results of these survey call attempts are in Table 1. Three of the 19 buildings (16%) met the minimum SEM requirements for all five elements (*full SEM*). The remaining 16 buildings (84%) met the minimum SEM requirements for at least two of the five elements (one

¹ The Commercial Real Estate (CRE) 2013 Market Partners Program cohort was also surveyed. Those results, including the SEM adoption level findings, are in a separate memo.

or more element is considered *some* SEM). In comparison, the CRE market characterization² revealed that 8% of the market met the minimum SEM requirements for all five elements, another 45% met the minimum requirements for at least three of the five elements, and 20% had not implemented any SEM elements.

The remainder of the memo describes the methodology and results in more detail.

1.1 Methodology

1.1.1 Survey Instrument Design

Cadmus designed a survey instrument to assess the level of SEM adoption in the OC buildings. NEEA's SEM definition for the CRE SEM cohorts guided the survey instrument development.

The survey included questions on these topics:

- Understanding of SEM
- Energy performance goal adoption and communication
- Identification, implementation, and documentation of SEM activities
- Allocation of resources towards SEM activities
- Reviewing progress towards the energy performance goal
- Program participation outcomes
- CRE SEM program delivery and value
- NEEA's influence on the building representatives' decision to adopt SEM
- Barriers and benefits to implementing SEM activities

The survey instrument is included as Appendix A.

1.1.2 Survey Frame and Achieved Sample

Cadmus conducted 19 surveys with building operators between May 22, 2014 and June 27, 2014, who had participated in Kilowatt Crackdown in 2013. The sample frame contained 53 unique contacts representing 121 buildings (some contacts represented more than one building). The team contacted every record with a unique contact name up to six times. The team obtained responses for 19 of the 53 unique contacts, meeting 90% confidence with $\pm 10\%$ precision. Table 1 shows the sample frame and survey disposition.

² Cadmus. *Market Characterization and Establishing the Market Baseline for the Commercial Real Estate Initiative* (Report No. E14-288). Portland, OR. Prepared for the Northwest Energy Efficiency Alliance. June 12, 2014. Available online: <http://neea.org/docs/default-source/reports/market-characterization-and-establishing-the-market-baseline-for-the-commercial-real-estate-initiative.pdf?sfvrsn=5>.

Table 1. Office Competition Sample Frame and Survey Disposition

Description	Number of Records	Boise	Portland/ Vancouver
Population (buildings)	121	44	77
Unique contacts	54	13	41
Completed surveys	19	4	15
Refusals	7	2	5
Wrong numbers	2	0	2
Building pulled out of competition	1	1	0
No longer managing property and could not provide referral	1	0	1
Not familiar with Kilowatt Crackdown and could not provide referral	1	0	1
No answer, answering machine, respondent not available*	23	6	17

*Attempted six times

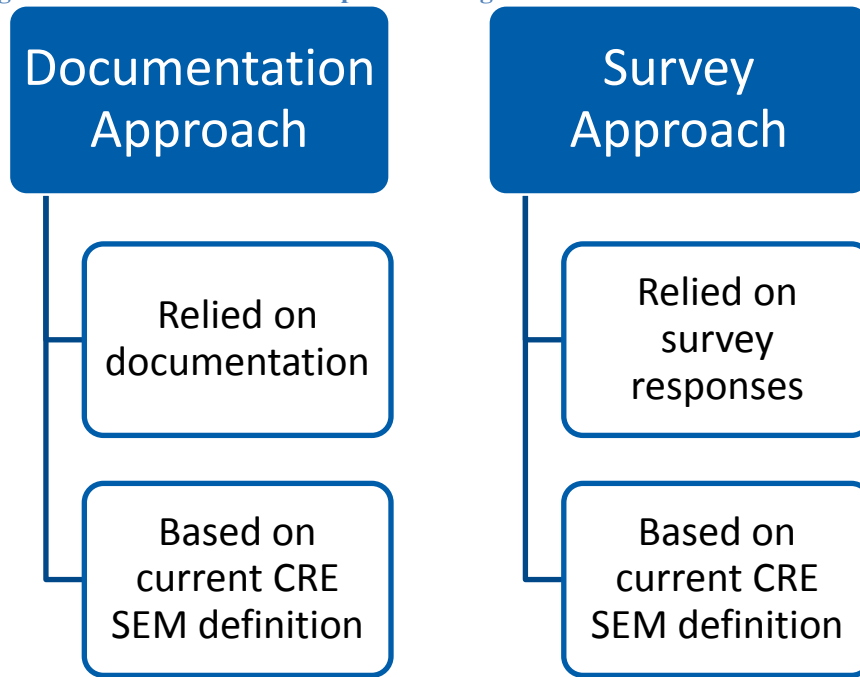
1.1.3 SEM Adoption Level Scoring

The Cadmus team developed methods to measure the SEM adoption level at each building based on NEEA's CRE SEM definition and based on NEEA's SEM Development Matrix. Both approaches are below.

1.1.3.1 CRE SEM Definition Method

Cadmus developed two scoring methods to measure SEM adoption. The first method relied on the documentation and data collected by NEEA for each building. The second method relied primarily on the survey responses. The team compared the results from the documentation-based method to the results from the survey-based method to determine whether the documentation results for those buildings that did not complete the survey were reliable for measuring SEM adoption. If the documentation and survey results aligned, NEEA could rely on their documentation to assess SEM adoption levels in the future and conduct interviews less frequently. The two methodologies are depicted in Figure 1.

Figure 1. Overview of SEM Adoption Scoring Methods Based on the CRE SEM Definition



1.1.3.1.1 Documentation Approach

NEEA provided Cadmus with SEM progress documentation for each OC building. Cadmus reviewed two items: (1) a project bank document detailing operational, behavioral, and maintenance improvements implemented, and (2) the official OC master Microsoft Excel workbook, also listing implemented improvement areas. NEEA updated the master workbook frequently, so Cadmus simultaneously reviewed and cross-checked these two documents.

Cadmus determined if the following was completed at each OC cohort building:

1. Setting energy performance goal(s);
2. Developing an implementation plan;
3. Allocating resources at a staff and budgetary level;
4. Implementing recommended equipment or operational and maintenance improvements.

Information regarding regular reporting to management on progress towards goal(s) was not in the documentation for OC buildings.

Cadmus defined the SEM progress and adoption level for each OC cohort building based on progress with steps one through four. See Table 2 for details.

Table 2. OC Adoption Classification Methodology

Status	Adoption Score	Level of Adoption	Defining Criteria in Documentation
N/A	1	No Adoption	-Non-active building
Engaged	2	Some Adoption	-Only steps one and two completed -Only verification check projects are implemented (for instance, checking for Energy System Management or programmable thermostat system overrides)
Committed	3	Some Adoption	-Steps 1-3 completed
Advancing	4	Some Adoption	-Steps 1-3 completed -At least one non-verification check project is implemented
Sustaining	5	Full Adoption	-Steps 1-3 completed -At least one non-verification check project is implemented -Has documentation on regular progress reporting to management

Cadmus compared the adoption level result based on the documentation to the adoption level result based on the survey responses to assess whether the documentation could be relied on in future studies to measure SEM adoption.

1.1.3.1.2 Survey Responses Approach

Cadmus developed a scoring method based on the survey responses that aligns with the scoring method for determining the level of SEM adoption used in the market characterization study conducted earlier this year (Cadmus 2014). This makes the OC cohort SEM adoption level study results comparable to the market baseline study results.

For each of the five elements in NEEA’s CRE SEM definition, Cadmus asked corresponding survey questions about the implementation of that element. The team scored each element equally, as 20%, if the building met the minimum requirements. Therefore, if a building met the minimum requirements for all five elements, it received a score of 100% and was classified as *full* SEM adoption. If a building met the minimum requirements for one to four elements, it received a score ranging from 20% to 80%, respectively, and was classified as *some* SEM adoption. Those buildings that did not meet the minimum requirement for any elements were classified as *no* SEM adoption.

In addition to measuring the overall SEM adoption level, Cadmus scored buildings’ progress with each element as *no*, *some*, or *full* adoption. The detailed scoring methodology and results are in Appendix C.

1.1.3.2 SEM Development Matrix Method

NEEA requested that Cadmus develop a scoring method based on the SEM Development Matrix, which contains 12 SEM components and outlines the criteria for six levels of SEM adoption: 0 - unengaged, 1 - engaged, 2 - systemic, 3 - sustaining, 4 - integrated, and 5 - world class.³

³ Leritz, N., Strategic Energy Management, It’s Time to Grow Up!; A Maturity Model for SEM Implementation. ACEEE Building Efficiency Summer Study. 2014.

NEEA's SEM Development Matrix contains more detail and more activities than the CRE SEM definition. Cadmus designed the survey instruments based on the CRE SEM definition, and it is not always possible to distinguish between two adjacent matrix levels. However, the goal was to design an approach to measure SEM adoption according to the matrix criteria, which could guide future studies. In the future, NEEA can refine this approach by asking survey questions that are more directly based on the matrix criteria.

Cadmus assigned a score of 0 through 5 for each of the 12 SEM components, depending on which level criteria the building met. A building that satisfied the Level 2 criteria or higher for all elements met the minimum requirements of SEM and was classified as *full* SEM adoption. A building was classified as *some* SEM adoption if it satisfied the Level 1 criteria or higher for at least six of the 12 elements.

The detailed scoring methodology and results based on the SEM Development Matrix is in Appendix D.

1.2 Key Survey Findings

The key OC survey findings are summarized below.

1.2.1 Respondent Characteristics

The team conducted 19 surveys. Table 3 provides a profile of survey respondents. The most common title is property or building manager (seven of 19). Thirteen of 19 respondents have had their current role for three or more years.

Table 3. Respondent Profile

	Characteristic	Total (n=19)	Boise (n=4)	Portland/ Vancouver (n=15)
Length of employment	1 year to less than 3 years	6	0	6
	3 years to less than 5 years	2	1	1
	More than 5 years	11	3	8
Title	Property/facility/building manager	7	2	5
	Director of operations	4	2	2
	Chief engineer/Director of engineering services	3	0	3
	Alliance director	1	0	1
	Energy and utility specialist	1	0	1
	Managing member	1	0	1
	President	1	0	1
	Program analyst sustainability	1	0	1
	Track energy, monitor equipment	8	3	5
	Oversee building, make decisions	6	0	6
Job Duties*	Implement and recommend energy savings projects	4	0	4
	Manage budgets and spending	1	0	1
	Oversee maintenance	1	0	1
	Energy manager for portfolio	1	0	1
	Oversee equipment choices	1	0	1
	Save tenants money	1	1	0
Length at Current Title	1 year to less than 3 years	6	0	6
	3 years to less than 5 years	3	1	2
	5 years or more	10	3	7

Source: Survey questions B1, B2, B3 and B4: *How long have you been with [COMPANY]? What is your title? How long have you had the role of [TITLE]? How do your job duties relate to energy use at this building?*

*Responses exceed number of respondents because multiple responses were allowed.

1.2.2 Building Characteristics

Cadmus asked about ownership structure, building usage, and building age. Most companies own and manage their property (for 12 of 19 properties). For all but two properties, respondents reported using their space for offices. Thirteen properties were built prior to the year 2000. The full results are in Table 4.

Table 4. Building Profile

Characteristic		Total (n=19)	Boise (n=4)	Portland/ Vancouver (n=15)
Ownership structure	Own and manage	12	3	9
	Manage only	7	1	6
Building usage	All office space	5	1	4
	Mostly office space	7	1	6
	Office and retail	5	1	4
	Other	2	1	1
Building age	1970 or before	8	2	6
	1980s	3	0	3
	1990s	2	0	2
	2000s	3	1	2
	2010 or later	3	1	2

Source: survey questions M1, M2, and M3: *Does your company own, manage, or both own and manage the property? How would you describe the use of space in the building? When was the building built?*

1.2.3 SEM Adoption Level per NEEA's CRE Definition with Five Elements

As outlined above, NEEA's SEM definition for the CRE cohorts is:

1. Adoption of a management-approved goal for energy performance
2. Documentation of the planned activities to achieve the goal
3. Allocation of resources (staff and training, and/or capital) towards the goal
4. Implementation of planned activities
5. Regular reporting to management on progress towards goal(s) and effectiveness of SEM practices

Table 5 shows the overall SEM adoption level for each building based on the documentation and survey results. According to survey responses, three of the 19 buildings met the minimum requirements for *full* SEM adoption; the remaining 16 buildings met the minimum requirements for at least one of the five SEM components, achieving *some* SEM adoption.

The adoption level based on the survey responses differed from the adoption level based on the documentation for six of the surveyed 19 buildings. Three of these six buildings received a documentation score of *no* SEM; for two buildings this was because no project bank existed to track SEM progress, for one building this was because it was previously listed as non-active. The remaining three buildings received *full* SEM based on surveys, but only *some* SEM based on documentation. This is because element 5, regular reporting to management on progress towards goal(s), is not documented for two of these three OC buildings. However, respondents confirmed, via the survey, that element 5 activities do occur at these buildings. The last building only documented energy performance goals.

Table 5. Overall SEM Adoption Level by Building

City	Building	SEM Adoption Level		Documentation and Survey Adoption Level Match?
		Documentation Method	Survey Method	
Boise	Building 1	Some	Some	Yes
	Building 2	Some	Some	Yes
	Building 3	Some	Some	Yes
	Building 4	Some	Full	No
Portland/ Vancouver	Building 5	Some	Full	No
	Building 6	No	Some	No
	Building 7	Some	Some	Yes
	Building 8	Some	Some	Yes
	Building 9	Some	Some	Yes
	Building 10	Some	Some	Yes
	Building 11	Some	Some	Yes
	Building 12	Some	Some	Yes
	Building 13	No	Some	No
	Building 14	No	Some	No
	Building 15	Some	Some	Yes
	Building 16	Some	Some	Yes
	Building 17	Some	Some	Yes
	Building 18	Some	Some	Yes
	Building 19	Some	Full	No

Table 6 shows that three of the 19 surveyed buildings (16%) met the minimum SEM requirements for all five elements (*full SEM*). The remaining 16 buildings met the minimum SEM requirements for at least two of the five elements (one or more element is considered *some SEM*). In comparison, the CRE market characterization revealed that 8% of the market met the minimum SEM requirements for all five elements and another 73% met the minimum requirements for at least one of the five elements (Cadmus 2014). The market characterization study surveyed 40 commercial buildings, and included 11 CRE cohort buildings.

Table 6. Market Baseline SEM Implementation Compared to OC SEM Implementation

Level of SEM Implementation	Market Baseline Study (n=40)			OC Buildings Survey (n=19)		
	Number of Total Surveys	Percentage of Total Surveys*	Absolute Precision**	Number of Total Surveys	Percentage of Total Surveys	Absolute Precision**
Full SEM (5 components)	3	8%	7%	3	16%	12%
Some SEM	29	72%	12%	16	84%	12%
4 SEM components	7	18%	10%	7	37%	15%
3 SEM components	9	23%	11%	8	42%	16%
2 SEM components	10	25%	11%	1	5%	7%
1 SEM component	3	8%	7%	0	0%	N/A
No SEM (0 components)	8	20%	10%	0	0%	N/A
Total	40	100%		19	100%	

*Totals may not add to 100% due to rounding.

**Absolute precision at 90% confidence.

The Cadmus team asked building representatives if they intend to fully implement NEEA's five SEM elements. Table 7 shows that for 14 of the 18 buildings, representatives plan to fully implement SEM. For one building, the representative said "no," and three respondents did not know.

Table 7. Intention to Fully Implement SEM

Response	Number of Responses
Yes	14
No	1
Don't know	3
No response	0
Total	18*

* Cadmus did not ask this question about one building, where the representative reported that all five elements were already fully implemented.

Source: survey question C4: *Do you intend to fully implement NEEA's five elements of Strategic Energy Management?*

Table 8 shows that three respondents plan to fully implement SEM within the next year, six plan to fully implement SEM within one to two years, and five plan to fully implement SEM within two to five years.

Table 8. Planned Timeline for Fully Implementing SEM

Response	Number of Responses
Less than one year	3
One year to two years	6
Two years to five years	5
More than five years	0
Not applicable	0
Total	14*

* Cadmus asked this question about buildings where the respondent said they intend to fully implement SEM (see Table 7).

Source: survey question C5: *When do you plan to have fully implemented Strategic Energy Management? Is it in less than one year, one to two years, two to five years, or more than five years?*

1.2.3.1 Element 1: Adoption of Management Approved Goal

NEEA's minimum criteria for the goal adoption element are: (1) the building has defined a measurable goal and (2) the goal has been adopted by management. The Cadmus team also asked the respondents to rate the extent to which this element was in place; Table 9 shows those results compared with the SEM survey score results.

Seven of the 19 buildings (37%) met the minimum criteria for *full* SEM adoption per the survey scoring methodology. The respondents' perception of element adoption matched survey responses in only seven of the 19 cases (37%). In fact, five of the six building respondents reported this element was at least partly in place, however, the survey scoring methodology measured these same five buildings as having *no* adoption of element 1.

Table 9. Adoption of Management Approved Goal: Survey Scoring Methodology Compared with Building Respondents' Perceptions

SEM Adoption Level per Survey Scoring Method	Building Respondents' Perception of the Extent Element is in Place				Total
	Fully in Place	Mostly or Partly in Place	Not in Place	Don't Know	
Full	2	5	0	0	7
Some	2	4	0	0	6
No	0	5	1	0	6
Total	4	14	1	0	19

Source: survey question C3a: *To what extent is each of the SEM elements in place at your company? Is the identification and adoption of energy performance improvement goals fully in place, mostly in place, partly in place, or not in place?*

1.2.3.2 Element 2: Documentation of Planned Activities

NEEA's minimum criterion for the documentation of planned activities element was that a building was documenting their activities on their own, without relying on NEEA's documentation. The Cadmus team also asked respondents to rate the extent to which this element was in place; Table 10 shows those results compared with the SEM scoring method results.

Thirteen of the 19 buildings (68%) realized *full* SEM adoption per the survey scoring methodology. However, respondents' recognized that this element was fully in place for only

three of these 13 buildings. The respondents' perception of element adoption matched survey responses for only five of the 19 buildings (26%).

Table 10. Adoption of Documentation of Planned Activities: Survey Scoring Methodology Compared with Building Respondents' Perceptions

SEM Adoption Level per Survey Scoring Method	Building Respondents' Perception of the Extent Element is in Place				Total
	Fully in Place	Mostly or Partly in Place	Not in Place	Don't Know	
Full	3	8	2	0	13
Some	0	2	2	0	4
No	1	1	0	0	2
Total	4	11	4	0	19

Source: survey question C3b: *To what extent is each of the SEM elements in place at your company? Is the documentation of planned activities to reach the goals fully in place, mostly in place, partly in place, or not in place?*

1.2.3.3 Element 3: Allocation of Resources

NEEA's minimum criterion for the allocation of resources element was that a building had dedicated staff and training, and/or capital resources towards energy-efficiency projects. The Cadmus team also asked the respondents to rate the extent to which this element was in place; Table 11 shows those results compared with the SEM scoring method results.

All 19 buildings met the *full* SEM adoption criteria for resource allocation per the survey scoring methodology. For five of these 19 buildings, respondents said the element was fully in place, for 12 buildings the respondents said the element was partly in place, for one building the respondent said the element was not in place, and one respondent did not know.

Table 11. Adoption of Allocating Resources: Survey Scoring Methodology Compared with Building Respondents' Perceptions

SEM Adoption Level per Survey Scoring Method	Building Respondents' Perception of the Extent Element is in Place				Total
	Fully in Place	Mostly or Partly in Place	Not in Place	Don't Know	
Full	5	12	1	1	19
Some	0	0	0	0	0
No	0	0	0	0	0
Total	5	12	1	1	19

Source: survey question C3c: *To what extent is each of the SEM elements in place at your company? Is the allocation of staff resources and training or allocation of capital resources fully in place, mostly in place, partly in place, or not in place?*

1.2.3.4 Element 4: Implementation of Planned Activities

NEEA's minimum criteria for the implementation of planned activities element was that at least one activity was being implemented at the building during 2013 or the building had dedicated staff and training, and/or capital resources towards energy-efficiency projects. Cadmus asked respondents for nine of the 19 buildings (47%) if at least one activity listed in NEEA's documentation was implemented. For all nine buildings, respondents confirmed at least one activity as being implemented.

Documentation of implemented measures did not exist for the remaining 10 buildings, so Cadmus relied on NEEA's documentation to verify implementation activity. Three of the 10 buildings implemented activities (and received a score of *full* SEM), and the remaining seven buildings did not have activities documented. However, these seven buildings confirmed, via the survey, that resources were allocated to project implementation; therefore, these seven buildings also met the minimum criteria for element four. All 19 buildings realized *full* SEM adoption per the survey scoring methodology. For five of these 19 buildings, respondents said the element was fully in place, for 13 buildings the respondents said the element was partly in place, and for one building the respondent said the element was not in place.

Table 12 shows those results compared with the SEM scoring methodology results.

All 19 buildings realized *full* SEM adoption per the survey scoring methodology. For five of these 19 buildings, respondents said the element was fully in place, for 13 buildings the respondents said the element was partly in place, and for one building the respondent said the element was not in place.

Table 12. Adoption of Implementation of Activities: Survey Scoring Methodology Compared with Building Respondents' Perceptions

SEM Adoption Level per Survey/ Documentation Scoring Method	Building Respondents' Perception of the Extent Element is in Place				Total
	Fully in Place	Mostly or Partly in Place	Not in Place	Don't Know	
Full	5	13	1	0	19
Some	0	0	0	0	0
No	0	0	0	0	0
No documentation	0	0	0	0	0
Total	5	13	1	0	19

Source: survey question C3d: *To what extent is each of the SEM elements in place at your company? Is the ongoing implementation of activities or practices toward reaching the goals fully in place, mostly in place, partly in place, or not in place?*

1.2.3.5 Element 5: Reporting to Management

NEEA's minimum criterion for the reporting management element was that staff report progress to management on a regular basis, with reports including any of the following: (1) the effectiveness of each activity in improving energy performance, (2) whether the allocated resources were adequate, and/or (3) changes to energy performance goals.

Eleven of the 19 buildings (58%) met the minimum criteria for *full* adoption of reporting to management per the survey scoring methodology. The respondents' perception of element adoption matched survey responses in only eight of the 19 instances (42%). Table 13 shows those results compared with the SEM survey score results.

Table 13. Adoption of Reporting to Management: Survey Scoring Methodology Compared with Building Respondents' Perceptions

SEM Adoption Level per Survey Scoring Method	Building Respondents' Perception of the Extent Element is in Place				Total
	Fully in Place	Mostly or Partly in Place	Not in Place	Don't Know	
Full	6	5	0	0	11
Some	2	0	0	0	2
No	2	2	2	0	6
Total	10	7	2	0	19

Source: survey question C3e: *To what extent is each of the SEM elements in place at your company? Is the reporting of progress to senior management fully in place, mostly in place, partly in place, or not in place?*

1.2.4 SEM Adoption Level per NEEA's SEM Development Matrix

The scoring method based on the SEM Development Matrix required that a building meet or exceed the level two criteria for all 12 matrix components to meet the minimum conditions for *full* SEM adoption. A building had *some* SEM adoption if they met or exceeded the level one criteria for at least six of the 12 matrix components. Table 14 shows the adoption level results from the CRE SEM definition method compared to results from the SEM Development Matrix method.

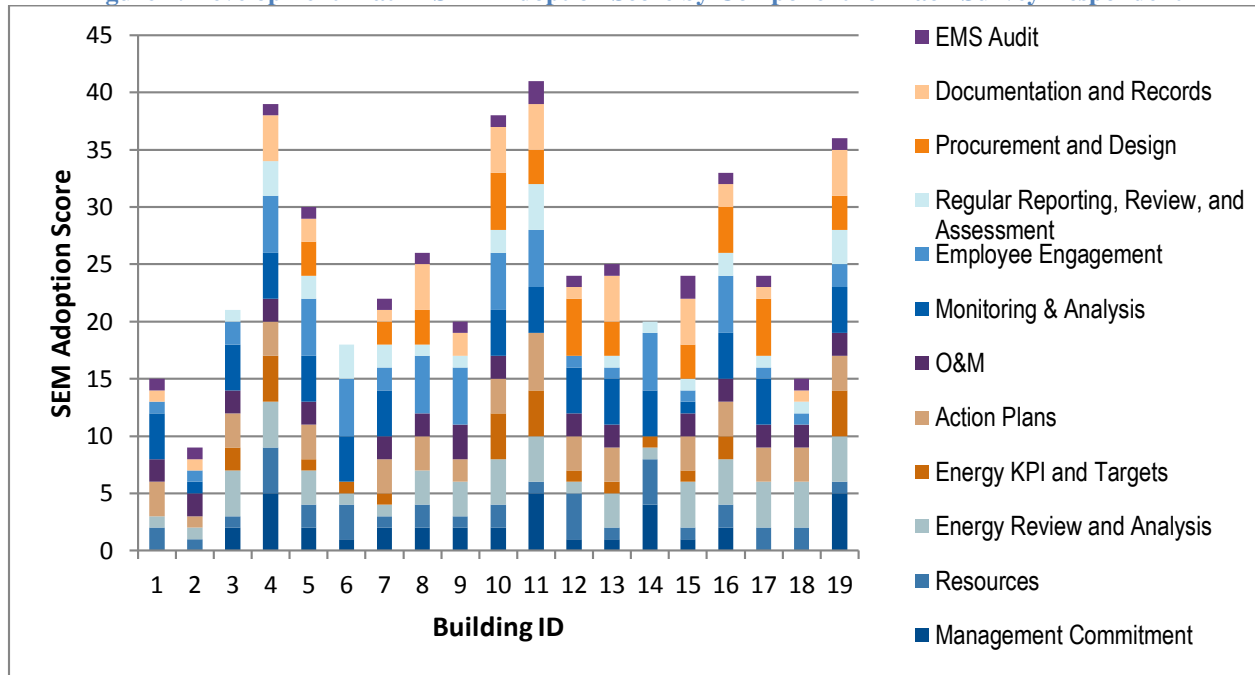
No buildings met the minimum conditions for *full* SEM adoption per the survey scoring methodology, but all buildings met the minimum conditions for *some* SEM adoption. NEEA recently developed the SEM Development Matrix and program implementation does not yet directly align with the matrix activities. In addition, Cadmus based the survey questions on NEEA's CRE SEM definition, which aligns with program implementation, but these questions did not have the level of detail needed to assess some matrix components.

Table 14. Overall SEM Adoption Level: Survey Scoring Methodology Compared with SEM Development Matrix Methodology

Adoption Level per CRE SEM Definition Methodology	Adoption Level per SEM Development Matrix Methodology			Total
	Full	Some	None	
Full	0	3	0	3
Some	0	16	0	16
No	0	0	0	0
Total	0	19	0	19

Figure 2 shows the scores by component for each of the 19 buildings with survey responses. Buildings received the lowest scores for components that did not have sufficient corresponding survey questions to properly assess the extent of adoption. For example, the survey did not include many questions specifically about an energy management system audit, and 17 of the 19 buildings did not meet or exceed the level 2 criteria for this component (receiving a score of 0 or 1). However, these components without sufficient survey questions were also likely not included or emphasized during program implementation. Detailed results for each component are in Appendix D.

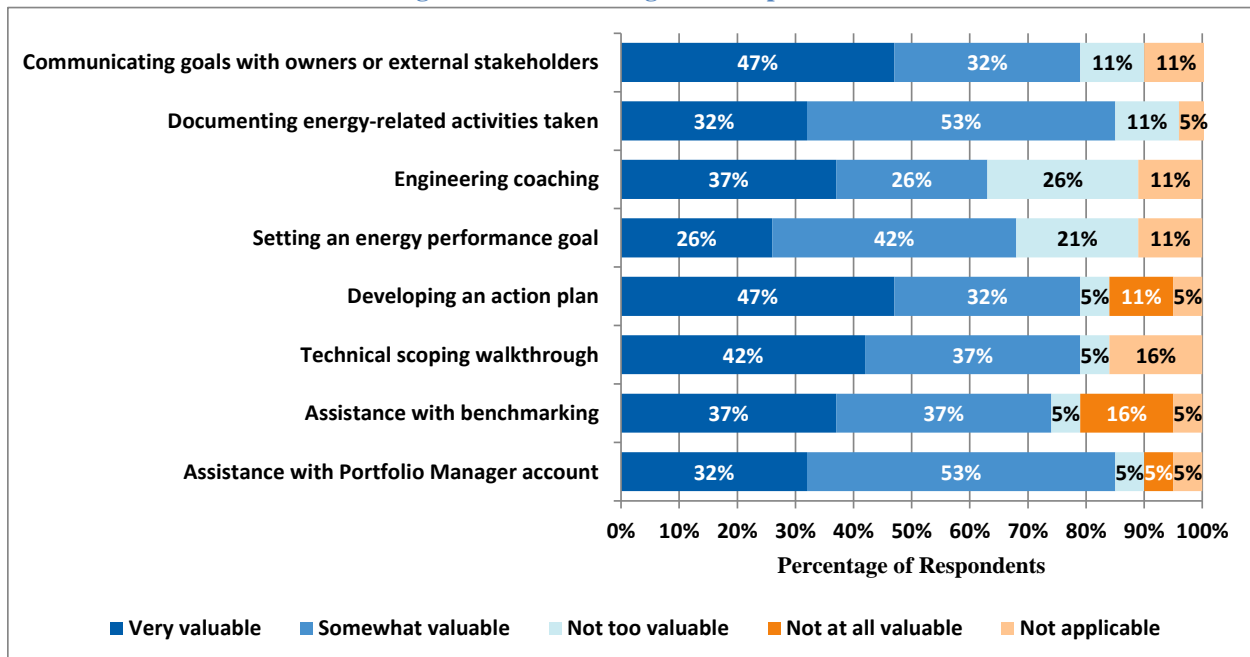
Figure 2. Development Matrix SEM Adoption Score by Component for Each Survey Respondent



1.2.5 Program Components

Cadmus asked respondents to rate how valuable program components were in helping them reduce energy use. Several respondents rated “developing an action plan” and “communicating goals and accomplishments with owners or external stakeholders” as being *very valuable* (47% each). These were the most valuable rated components. Figure 3 shows the value of each component to the respondents in reducing energy use.

Figure 3. Value of Program Components*



* Totals may not sum to 100% due to rounding.

Source: survey question I1: *I'm going to ask some questions about the value of different program components in helping you reduce energy use. Thinking about your overall experience with program support in...[INSERT EACH STATEMENT], would you say this component was very valuable, somewhat valuable, not too valuable, or not at all valuable?* (n=19)

Cadmus asked respondents who said the component was *not too valuable* or *not at all valuable* why they gave that response. Table 15 shows respondents' verbatim answers. Many respondents reported that components were not valuable because they already had that component in place.

Table 15. Reasons for Low Value Rating

Program Component	Reason for Low Value Rating
Communicating goals and accomplishments with owners or external stakeholders (n=2)	Something we had already done. We are the owner and occupant, so we know.
Documenting energy-related activities taken (n=2)	We were already doing this. Because if don't have the time to do anything with it.
Engineering coaching (n=5)	A lot of it we already addressed. I'm not aware of any engineering coaching available. They were not familiar with the equipment, It is specialized. Our building was not really suited to the competition. The engineer did not understand our applications and did not like them.
Setting an energy performance goal (n=4)	It is a standard practice. We already have been doing these things. There should not be a limit. We should always strive to get better than we are now. Not just stop at a goal. Again if we just don't have the time. We were already exceeding previous goals by 70%.
Developing an action plan (n=3)	Again we have one in place already. Because I'm too busy We didn't developed an action. We didn't find that we needed to make improvements. We just benchmarked.
Technical scoping walkthrough (n=1)	We have Technicians on site that knew more about our equipment than your techs. It is specialized equipment.
Assistance with benchmarking (n=4)	Because I already do it, and have done it for some time. We already have a process in place. I didn't get any assistance. There wasn't anything else we could do that wasn't done already.
Assistance with Portfolio Manager account (n=2)	We were already doing this before the competition. We didn't get assistance. It was more of a hassle than anything.

Source: survey question I2: *Can you tell me the reasons you said that the competition's assistance with [INSERT ANSWERS FROM 0 THAT WERE 3 or 4] were not very valuable?* (n=19)

Cadmus asked respondents what tools provided through Kilowatt Crackdown were most useful. All but three respondents' identified tools; two did not know what tools were useful and one said that none of them were useful. The top answer from those in Portland/Vancouver was a site survey. Table 16 summarizes all the responses.

Table 16. Useful Tools Provided by Kilowatt Crackdown

Useful Tools	Total (n=16)	Boise (n=3)	Portland/Vancouver (n=13)*
Site survey	4	0	4
Night walks	2	1	1
Energy use monitoring	2	0	2
Benchmarking	1	0	1
Energy Trust of Oregon resources	1	0	1
Carbon Force study	1	0	1
Project bank	1	0	1
Seminars	1	0	1
Identifying goals	1	1	0
Report	1	1	0
Staff support	1	0	1
ENERGY STAR® help	1	0	1

* Multiple responses accepted.

Source: survey question I4: *What tools provided by Kilowatt Crackdown were most useful in understanding and reducing energy use?*

The team asked respondents what tools, seminars, or workshops would help them adopt energy management practices. Three people mentioned lighting seminars; all other responses were mentioned once. Eight people did not know or said that there were no workshops that would help. Table 17 includes the verbatim responses.

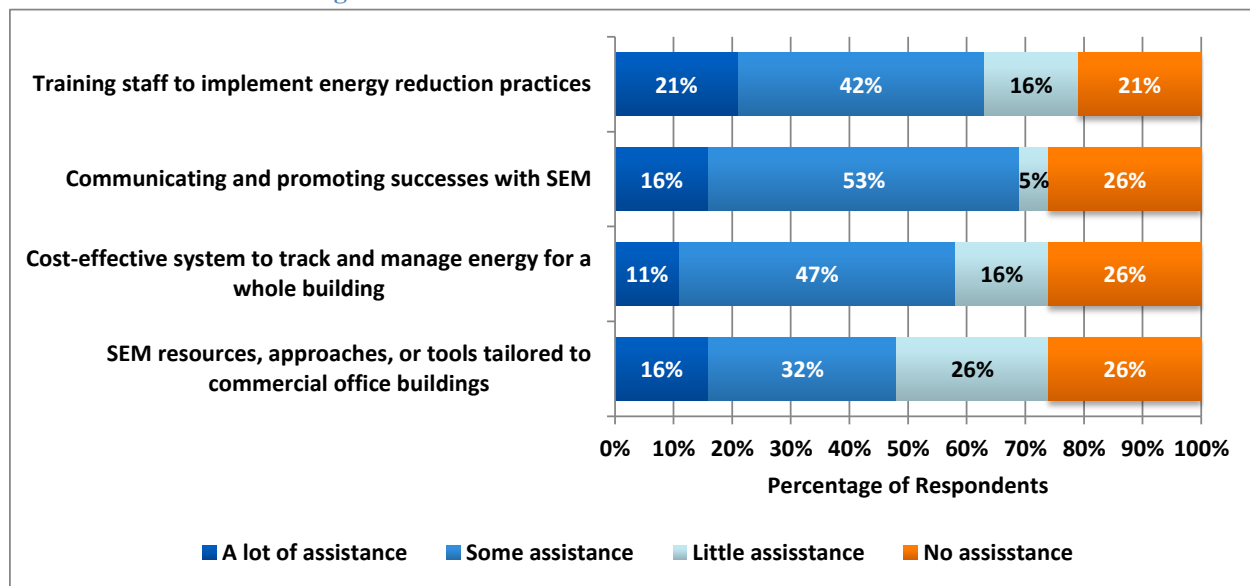
Table 17. Other Helpful Tools

Boise Responses (n=2)	Portland/Vancouver Responses (n=9)
<i>Idaho Power & Intermountain Gas and safety training.</i>	Lighting seminars (3 mentions)
<i>It would be nice for the utility to provide data feeds for Portfolio Manager.</i>	Benchmarking. Sharing lessons learned. Case studies.
	Energy Trust of Oregon. Rebates offered to us. They did a survey of [a] building on the estimated cost and paybacks.
	More value-added incentives. Monetary value incentives.
	Ongoing programs.
	How to understand current technology to decide what is the best way to save; someone to interpret.
	Maintenance best practices and also behavioral [best] practices.
	Solar power.

Source: survey question I5: *What other tools or seminars and workshops can NEEA, BOMA, your utility, or the city offer to help you adopt energy management practices?*

The team asked how much assistance respondents received from Kilowatt Crackdown in various areas. Twenty-one percent of respondents said they received *a lot of assistance* for training staff to implement energy reduction practices and 11% said they received *a lot of assistance* for a cost-effective energy tracking system. Figure 4 shows the results of these questions.

Figure 4. Assistance Received from Kilowatt Crackdown



Source: survey question K5: *Please tell me the extent of assistance you received from Kilowatt Crackdown in the following areas. Did you receive a lot of assistance, some assistance, little assistance, or no assistance with [INSERT STATEMENT]?* (n=19)

1.2.6 Motivation

Cadmus asked respondents why they participated in Kilowatt Crackdown. The most common reason was to save energy and money (five of 19), followed by a recommendation from peers or colleagues (four of 19). The full list of reasons is in Table 18.

Table 18. Reasons for Participating in Kilowatt Crackdown*

Motivator	Total (n=19)	Boise (n=4)	Portland/Vancouver (n=15)
Save energy and money	5	1	4
Peers recommended it/company directed us to participate	4	1	3
BOMA recommended it	2	0	2
To meet our energy performance goals	2	0	2
Reduce maintenance costs	1	0	1
Recommended by local utility or energy-efficiency organization	1	1	0
To get recognition for the practices we have in place on behalf of the team and client	1	0	1
Most of the buildings had participated and it was the right thing to do	1	1	0
Tenants wanted to participate	1	0	1
Reducing carbon emission in the environment	1	0	1
To look attractive to tenants by being green	1	0	1
Don't know	2	0	2

* Multiple responses accepted.

Source: survey question J1: *What motivated your company to participate in Kilowatt Crackdown?* (n=19)

Twelve of 19 respondents (63%) said they conducted major building upgrades within the last two years. The most common upgrade, mentioned by five of 12 respondents, was upgrading the heating or cooling system.

Before participating in Kilowatt Crackdown, 12 of 19 respondents described themselves as *very active* in managing energy in their buildings. Eight of 19 had participated in another utility-sponsored program(s) before participating in Kilowatt Crackdown. Without the Kilowatt Crackdown competition and assistance, seven of 19 would not have completed any of the projects implemented. This was especially true of respondents in Boise, where three of four respondents said they would not have implemented any projects without Kilowatt Crackdown. Table 19 summarizes these results.

Table 19. Activity and Implementation Profile

Question	Total (n=19)	Boise (n=4)	Portland/ Vancouver (n=15)
Energy management activity prior to Kilowatt Crackdown			
Very active	12	2	10
Somewhat active	5	1	4
Not too active	1	1	0
Not active at all	0	0	0
Don't know	1	0	1
Participated in other utility sponsored programs	8	2	6
Projects implemented without Kilowatt Crackdown team			
All	1	0	1
Most	4	1	3
Some	7	0	7
None	7	3	4

Source: survey questions J3, J4, and J5: *Before participating in Kilowatt Crackdown, how active was this building in managing energy? Did your building participate in other utility-sponsored energy-efficiency programs before participating in Kilowatt Crackdown? How many of the projects implemented with the assistance of the Kilowatt Crackdown team do you think would have been implemented in the absence of this competition?*

1.2.7 Barriers

The team asked respondents to discuss challenges to implementing activities in the project bank (Table 20). The most significant challenge mentioned was budget limitations (by six of 19), followed by high initial costs (by four of 19).

Table 20. Challenges to Implementing Activities in the Project Bank*

Challenges	Total N=19)	Boise (n=4)	Portland/ Vancouver (n=15)
Budget limitations	6	1	5
High initial cost	4	1	3
Don't know	3	1	2
Lack of staff time to pursue energy-efficiency upgrades	2	0	2
Timeframe to complete activities	2	2	0
Not a high enough return-on-investment	1	0	1
Lack of technical knowledge about energy-efficiency equipment	1	0	1
Long payback period	1	0	1
Getting tenants to perceive the activity as safe	1	0	1
Getting tenant participation	1	0	1
Convincing the owners to spend money	1	0	1
Discipline in documenting and being consistent	1	0	1
The activities will not improve energy use in the building	1	0	1

* Multiple responses accepted.

Source: survey question K3: *What would you say are the challenges to implementing the activities in the project bank?*

Table 21 shows the ways respondents said NEEA and other organizations could help their businesses overcome the challenges to adopting SEM. The top two responses are to provide more information about best practices and to provide more money in rebates (four of 19 each). Three of four respondents in Boise did not offer a recommendation.

Table 21. Ways to Help Companies Overcome Challenges to Adopting SEM*

Ways to Overcome Challenges	Total (n=19)	Boise (n=4)	Portland/ Vancouver (n=15)
Provide best practices and education, more information	4	0	4
More money, rebates	4	1	3
Benchmarking	2	0	2
Provide audits	1	0	1
More manpower	1	0	1
No recommendation offered	8	3	5
Don't know	2	0	2

* Multiple responses accepted.

Source: survey question K6: *What could NEEA, BOMA, your utility, or the city do to help your company overcome challenges to adopting Strategic Energy Management goals and practices?*

1.2.8 Benefits

Cadmus asked respondents to identify the main benefits to their organization resulting from the Kilowatt Crackdown activities. Respondents gave a wide variety of answers, with six of 19 mentioning energy savings. Table 22 lists all the benefits mentioned by respondents.

Table 22. Benefits Resulting from the Kilowatt Crackdown Activities*

Benefits	Total (n=19)	Boise (n=4)	Portland/ Vancouver (n=15)
Energy savings	6	1	5
Lower energy bill/saved money/reduced operating costs	2	0	2
Lower maintenance costs	2	0	2
Marketing benefits	2	0	2
Identified areas that need attention	2	1	1
Attractive to tenants/higher occupancy rate	1	0	1
Environmental benefits	1	0	1
Benchmarking	1	0	1
Community awareness	1	1	0
Earned ENERGY STAR	1	1	0
Made us aware	1	0	1
Project bank	1	0	1
Employee moral/people felt more positive	1	0	1
Gave overall data for reducing energy use	1	0	1
Gave some exposure to the industry	1	0	1
Improved performance	1	0	1

* Multiple responses accepted.

Source: survey question K1: *What would you say are the main benefits to your organization resulting from the Kilowatt Crackdown activities?*

The team asked respondents what benefits they received from participating in Kilowatt Crackdown other than saving energy. Six of 19 said there were no additional benefits, two did not know, and two gave responses that indicated they did not understand the question. The responses varied and are in Table 23.

Table 23. Benefits in Addition to Saving Energy

Other Benefits	Total (n=19)	Boise (n=4)	Portland/ Vancouver (n=15)
Attractive to tenants/higher occupancy rate	2	0	2
Lower maintenance costs	2	0	2
Marketing benefits	1	0	1
Gas, water, and electrical savings	2	0	2
Establishing the value through group effort	1	0	1
Lower utility costs	1	0	1
No other benefits	6	2	4
Did not understand question*	2	1	1
Don't know	2	1	1

Source: survey question K2: *Are there any other benefits besides saving energy that you have seen from participating in the Kilowatt Crackdown?*

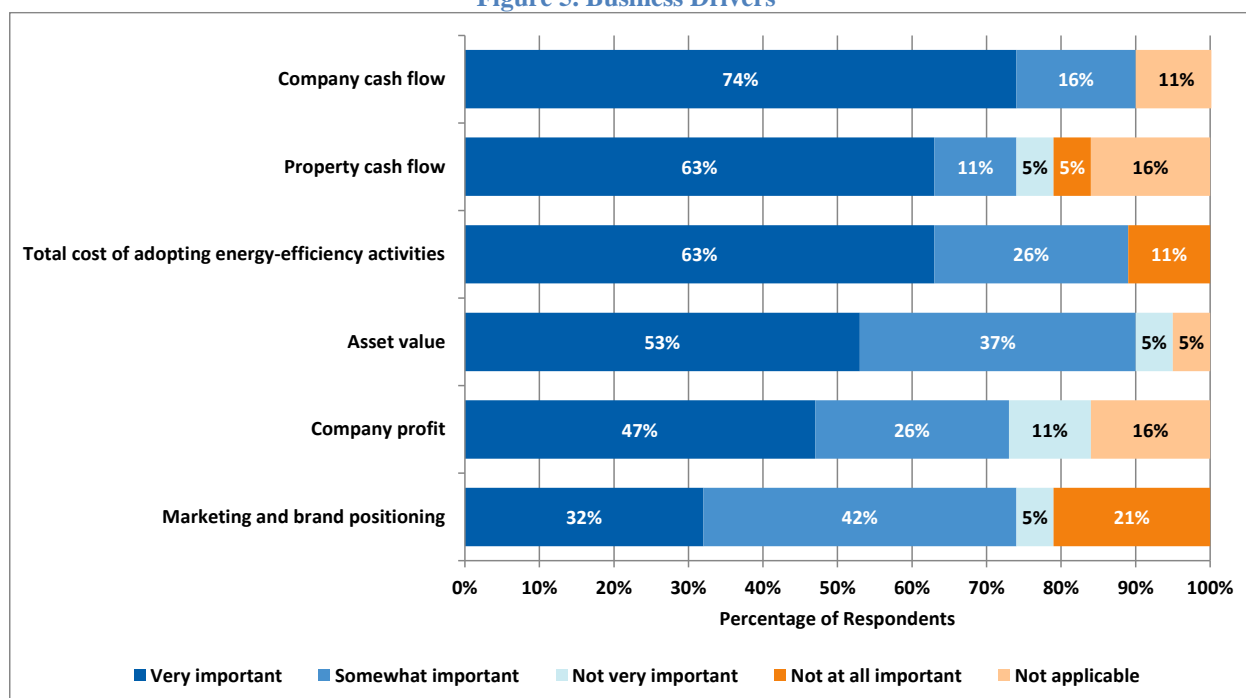
*Responses were water energy savings and energy savings from setting the system and using better schedules.

1.2.9 Business Goals and Drivers

Respondents identified the importance of various business items to them when planning energy-efficiency goals and practices (Figure 5). Seventy-four percent of respondents said company cash

flow was *very important*, followed by property cash flow (63%) and total cost of adopting energy-efficiency activities (63%).

Figure 5. Business Drivers*



* Totals may not sum to 100% due to rounding.

Source: survey question L1: *Please tell me how important the following items are to you when planning energy efficiency goals and practices.* (n=19)

Fifty-eight percent of respondents said their building has a specific policy that they replace worn out equipment with high-efficiency equipment. The team asked respondents whether their company's requirement for return-on-investment is less stringent, more stringent, or the same as for other capital investments. Almost half of the respondents (47%) said it was the same as for other capital investments while 21% said it was less stringent and 26% said it was more stringent. One person said he/she did not know (5%).

1.3 Conclusions and Recommendations

1.3.1 SEM Adoption

Cadmus has the following conclusions and recommendations based on the SEM adoption level findings.

- OC SEM adoption levels are higher than those shown with the market baseline study.***
 Three of the 19 buildings (16%) met the minimum SEM requirements for all five elements (*full SEM*). The other 16 buildings (84%) met the minimum SEM requirements for at least two of the five elements (*some SEM*). In comparison, the CRE market characterization study revealed that 8% of the market met the minimum SEM requirements for all five elements and another 72% of the market met the minimum

requirements for at least one of the five elements. Twenty percent of the market had not implemented any SEM elements (Cadmus 2014).

- ***The majority of respondents intend to fully implement SEM.*** Fourteen of the 18 building representatives plan to fully implement SEM. Only one respondent said SEM would not be fully implemented at his building and three did not know. Cadmus did not ask this of one respondent who said all five elements were already fully implemented at the building. Of the 14 respondents that plan to fully implement SEM, three plan to fully implement SEM within the next year, six plan to fully implement SEM within one to two years, and five plan to fully implement SEM within two to five years.
- ***Building respondents' perception of progress with SEM elements was often less than indicated by the survey scoring methodology.*** Respondents for buildings that met the minimum criteria for SEM elements regularly reported that the elements were less than fully implemented. For example, all 19 buildings met the minimum criteria for resource allocation according to the survey scoring methodology, but for 14 buildings respondents' reported the element was not yet fully in place or they did not know whether the element was in place. These responses may reflect building managers' desire to do more or they may reflect a perceived expectation that they should do more with each component. The responses also imply that building managers are not aware of NEEA's expectations for each component.
 - **Recommendation:** NEEA should consider communicating the SEM adoption level results based on the CRE SEM definition with the participating building respondents to acknowledge their success with SEM and to provide feedback on which elements need further progress.
- ***NEEA's documentation provided some useful information on SEM progress, but did not contain all of the required information to assess the cohorts' SEM adoption.*** NEEA did not create project banks for smaller buildings, so no documentation was available to assess SEM progress. Additionally, the project banks did not include information regarding regular reporting to management.
 - **Recommendation:** NEEA should consider developing a simpler tracking document for the smaller buildings that documents the activities supporting the minimum criteria of the CRE SEM definition. Participants could fill out this documentation and submit it to NEEA at the end of the program.
 - **Recommendation:** NEEA should consider tracking the reporting to management element in the project banks or in a separate document.
- ***NEEA's SEM Development Matrix provides guidance for activities above and beyond the minimum requirement in the CRE SEM definition, but may be too complex for OC.*** NEEA recently developed the SEM Development Matrix, and program implementation was not directly based on these criteria at the time the survey was administered to

measure SEM adoption. However, the matrix design is likely too complex for a one-year program with commercial office buildings.

- **Recommendation:** NEEA should consider revisiting the CRE SEM definition and aligning it with the SEM Development Matrix components that are most applicable to the OC initiative goals. This will ensure that the SEM initiatives are implemented consistently without the need to measure cohorts' progress against metrics that are inconsistent with the OC initiative goals.

1.3.2 Program Feedback

Cadmus has the following program feedback based on the survey findings.

- ***Over 80% of respondents reported documenting energy-related activities and getting assistance with Portfolio Manager accounts as very valuable or somewhat valuable program components.*** Over 60% of respondents reported that each program component Cadmus asked about was *very* or *somewhat* valuable.
- ***Seven of 19 respondents (37%) said they would not have completed any of the projects implemented without the assistance of Kilowatt Crackdown.*** This was especially true of respondents in Boise, where three out of four respondents said they would not have implemented any projects without Kilowatt Crackdown. However, 12 of 19 respondents described themselves as *very active* in managing energy in their buildings before Kilowatt Crackdown and eight said they had participated in another utility-sponsored program(s).
 - **Recommendation:** NEEA should continue recommending utility and local government rebate programs, prioritizing rebated measures for the Kilowatt Crackdown cohorts.
- ***The most frequently mentioned challenges for adopting SEM were budget limitations and high initial cost.*** Budget limitations was mentioned by six of 19 respondents and high initial costs was mentioned by four of 19 respondents.
 - **Recommendation:** NEEA should also consider partnering with a financial institution to offer zero or low interest loans for energy-efficiency projects.

1.4 Next Steps

Cadmus is estimating the OC cohort's energy savings by SEM adoption level. The team looked for any trends in energy savings that may be dependent on SEM adoption level results, or on the adoption of specific SEM elements. Cadmus described the results from these analyses in a draft report delivered to NEEA on August 20, 2014.