Evaluation of Energy Trust of Oregon's CORE Improvement Pilot

Year 2 Report

Prepared for:
Energy Trust of Oregon

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Executive Summary

The CORE Improvement (CORE) pilot was an offering within Energy Trust of Oregon's (Energy Trust) Production Efficiency (PE) program that helped medium-sized industrial customers (i.e., those spending $50,000 to $500,000 annually on electricity and natural gas combined) implement strategic energy management (SEM) practices at their facilities. CORE was implemented by Triple Point Energy (Triple Point), an energy consulting firm specializing in delivering strategic energy management programs to the industrial market. CORE was modeled after the successful Industrial Energy Improvement (IEI) initiative also offered by Energy Trust and implemented by Triple Point. The goal of IEI and CORE is to put into operation at each participant facility a process of continuous energy management improvements which enable energy savings and reductions in energy intensity.

Initially launched as a pilot, CORE consisted of two Cohorts: Cohort 1 began in July 2012 with 11 participants and concluded in October 2013 with nine, while Cohort 2 began in August 2013 and concluded in October 2014 with 12 participants. During their CORE participation, Cohorts conducted activities to identify, implement, and evaluate SEM practices.

Energy Trust's industrial SEM offering has evolved as a result of the pilot's success. Medium and large industrial customers are now served through a single program offering. This was a direct outcome of the pilot finding that the SEM experience for medium-sized customers was not significantly different from large customers' experience with IEI.

Navigant Consulting, and their partner, DNV GL (together the "Navigant team"), conducted an impact and process evaluation of the CORE pilot. This was a multi-year evaluation tracking feedback and program impacts of the two Cohorts over several years. The first report was published on September 4, 2014 and covered the activities of Cohort 1 after their initial engagement period[1]. This report discusses the activities conducted by Cohort 2 and follows up with Cohort 1 about a year after the end of their CORE participation to gauge the persistence of SEM practices. This report also contains an impact evaluation of the savings achieved by Cohort 1 due to their participation in CORE.

Evaluation Objectives

The purpose of the CORE evaluation was to verify whether medium-sized industrial customers can embrace and adopt SEM practices and embed them in their corporate culture given the inherent time and resource constraints of smaller industrial sites. The goals of the evaluation were to test and refine the delivery model, compile feedback and lessons learned, and determine which types of companies are successful with SEM. In addition, the evaluation intended to verify the energy savings resulting from the program, assess the persistence of those savings, and identify the best methods for evaluating the impacts of CORE.

Evaluation Methodology

For this second year report, the Navigant team conducted a process and impact evaluation using data from both Cohorts.

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[1] *Evaluation of Energy Trust of Oregon's CORE Improvement Pilot*, Navigant Consulting, September 4, 2014. http://assets.energytrust.org/api/assets/reports/CORE_Year_1_Evaluation_Report-Final_wSR.pdf

For the process evaluation, the Navigant team conducted in-depth interviews to assess whether CORE is operating effectively, delivering value to participants, and promoting the adoption and persistence of SEM practices among small industrial customers. The Navigant team interviewed the following parties:

- Energy Trust program management staff;
- Representatives from Triple Point;
- Each of the nine participants in Cohort 1; and
- Each of the twelve participants in Cohort 2.

The Navigant team performed an impact evaluation of the Cohort 1 participants and a review of the participant MT&Rs for Cohort 2 participants. The Cohort 1 evaluation included a site visit; obtaining production, weather, and energy data for the site; a review of the monitoring, targeting, and reporting spreadsheet models (MT&Rs); and a calculation of savings since implementation of the program.

Process Evaluation Findings

Navigant found that customers in both Cohorts experienced successes and challenges when implementing SEM principles through CORE. Participants learned SEM principles and understood where their energy savings were coming from through use of the tracking method learned in CORE. Participants also learned from their peers and shared information among themselves. Participants retained energy-saving O&M measures that they implemented during CORE. However, participants had difficulty continuing to follow the SEM practices that led to those savings after the end of the program intervention. These practices included tracking their energy, identifying new opportunities, maintaining an energy team, engaging employees, and generally prioritizing energy management. In summary, Navigant found that the CORE participation led to customers implementing savings that would themselves continue to persist, but customers would not be able to generate new savings because they did not retain the practices that led to those savings. Interviewees suggested that Energy Trust could help them maintain efficient practices later by continuing to offer assistance.

Our findings suggest that medium-sized industrial customers can adopt SEM practices as effectively as large customers. However, not all CORE participants were able to embed SEM practices in their corporate culture without continuing intervention from Energy Trust. More than one year after their CORE participation, fewer than half of Cohort 1 customers were continuing SEM practices: four were continuing to track their energy; only two had added new projects to their opportunity register, although three others had continued to implement projects already on their opportunity register; three continued to follow their energy policy; and four continued to set a numeric energy reduction goal (one had a non-numeric goal).

Impact Evaluation Findings

The verified first year electric savings for Cohort 1 was 1,776,366 kWh for a 91% realization rate. The verified second year savings was 1,433,995 for a 74% realization rate. These findings indicate that the majority of the savings from CORE persisted over a 2-year period and that a three-year measure life is feasible. Table 1 summarizes the electric savings for sites included in the evaluation. Participant PE5409 had two separate models for its individual production lines and so separate results are provided for them. The overall realization rates are the sum of each year's *ex post* savings divided by the sum of the *ex ante* savings.

Table 1. Summary of Electric Savings Results

Participant ID	Ex Ante kWh	Ex Post Year 1 kWh	Ex Post Year 2 kWh	Year 1 Realization Rate	Year 2 Realization Rate
PE5398	261,223	487,148	256,643	186%	98%
PE5399	125,209	86,940	326,172	69%	261%
PE5402	72,148	Unavailable	Unavailable	Unavailable	Unavailable
PE5405	426,689	343,379	441,552	80%	103%
PE5407	52,682	87,368	70,581	166%	134%
PE5409	218,327	275,729	7,591	126%	3%
PE5409	24,969	38,882	70,581	156%	283%
PE5411	837,115	456,920	260,875	55%	31%
Total	1,946,214*	1,776,366	1,433,995	91%	74%

The total does not include ex ante savings from site PE5402, as ex post savings were unavailable for this site.

Table 2 summarizes the gas savings for sites included in the evaluation. The overall gas savings were slightly negative, but this is treated as a zero percent realization rate, as the uncertainty is high for low savings values as a percent of total site usage. Gas savings were low primarily because most sites did not use significant amounts of gas to begin with, and of those that did, most focused on electricity measures instead of gas measures. Thus, the low gas savings found in the pilot are not necessarily an indicator of the ability to achieve gas savings through SEM.

Table 2. Summary of Gas Savings Results

Participant ID	Ex Ante therms	Ex Post Year 1 therms	Ex Post Year 2 therms	Realization Rate
PE5399	2,324	-3,573	-564	0%
PE5402	2,419	Unavailable	Unavailable	Unavailable
PE5405	8,534	-337	-138	0%
Total	13,277	-3,910	-702	0%

The Navigant team found that the model methodology was reasonable and accurately reflected savings at the sites with a few exceptions:

- The implementer calculated annual savings based on the last three months of the implementation period, which sometimes did not account for seasonal effects. At one site with seasonally-dependent production, Navigant found lower savings when evaluating the model using a full year of data.
- One site had much higher production in the Year 2 post-implementation period than in the baseline period, which invalidated the model for Year 2.
- Finally, the Navigant team was not able to verify any gas savings for Cohort 1. Navigant was only able to obtain gas models for two sites, and both of those showed no savings. It was unclear whether customers lacked gas savings opportunities, customers did not take advantage of existing gas savings opportunities, or Triple Point did not sufficiently identify and analyze potential gas measures.

The Navigant team did not evaluate Cohort 2 savings during this analysis year. Nevertheless, Navigant conducted a review of final reports and MT&Rs for Cohort 2 participants. Navigant generally found that the MT&Rs have enough information to use them for tracking energy consumption and savings, and that the assumptions and models used to track the energy consumption and savings are reasonable.

Recommendations

Based on the findings, the Navigant team recommends the following actions to improve future iterations of CORE:

- **Stick with a good thing.** Energy Trust should maintain the Cohort format of the training and workshops as these were successful at engaging participants in both Cohorts, and participants in both Cohorts found them useful. The program has struck a good balance between group workshops that facilitate experience sharing and networking and individual workshops that focus on site-specific activities.
- **Stay in touch.** Several participants in both Cohorts specifically asked for continuing engagement beyond CORE or said that they planned to reach out to Triple Point after CORE for help. This suggests that continuing assistance to participants even after the CORE year is necessary to help address some of the challenges faced by participants. Energy Trust should also consider providing assistance to customers to update their MT&R baselines as needed since modeling work of this complexity seems to be beyond the ability of most customers. Energy Trust is initiating a Continuous SEM effort to address these issues.
- **Continue to motivate participants.** Milestone incentives were an important factor in maintaining engagement, and Energy Trust should consider including this approach in future iterations of the program. Even though the energy savings outweighed the milestone incentives for most participants (and participants were fully aware of this), the milestones provided direct motivation for participants to perform certain tasks. For some, the appearance of receiving a check was an important factor in getting management and others in the company on board. From the perspective of management, milestone incentives may serve as a hedge against the inherent uncertainty in devoting time to SEM: companies can be confident that they will get some payoff from participating even if they do not ultimately achieve energy savings in the first year.
- **Take a flexible approach to energy use tracking.** Because of the difficulty of verifying energy savings for sites that save a low percentage of energy, such as around five percent, Energy Trust should consider a different method (other than MT&R) for these sites, such as a key performance indicator (KPI) or bottom-up analysis. If an MT&R model is used, the following parameters should be followed:
    - If only monthly data are available, the baseline period should be at least two years to ensure that savings based on it are reliable.
    - Energy savings should be analyzed over a full year or should be adjusted for seasonality when only a few months of data are available.
- **Exploit opportunities for gas efficiency**. Future program offerings should focus more on identifying opportunities for gas savings for participants who are non-transport gas users.

MEMO

Date: April 7, 2016
To: Board of Directors
From: Kim Crossman, Industry and Agriculture Sector Lead
Dan Rubado, Evaluation Project Manager
Subject: Staff Response to the CORE Pilot Year 2 Evaluation Report

This report confirms previous evaluation findings that smaller industrial sites can be successful with Strategic Energy Management (SEM). As seen in past SEM studies, the participants highly value the workshops, the technical services and coaching, networking with their peers, and the energy savings they were able to achieve. However, participants' ability to maintain their SEM activities post-intervention appeared to wane over time. Even so, the operations and maintenance measures that were implemented during CORE tended to stay in place and the energy savings appeared to persist. In addition, participants increased the number of capital efficiency upgrades they undertook as a direct result of CORE.

Annual savings were estimated reasonably well in most cases. However, seasonality in production, and therefore savings, introduced significant error into the savings estimate for one site. Ensuring that SEM implementers properly account for seasonal variations in savings will be important going forward.

Staff turnover and persistence of SEM practices were challenges for many participants and Energy Trust is trying to address these through its updated SEM offerings. As a result of the CORE pilot, Energy Trust created a single industrial SEM offering called Core SEM, which combines large and small industrial sites in mixed cohorts. Energy Trust is also launching a new, continuous SEM offering for industrial customers that have participated in SEM training, to keep them engaged, help maintain and build their SEM activities, achieve additional energy savings, and meet customer demand for ongoing SEM support.

1. Introduction

Navigant Consulting, and their partner, DNV GL (together the "Navigant team"), conducted an impact evaluation of Energy Trust's CORE Improvement pilot (CORE). This was a multi-year evaluation tracking feedback and program impacts of two groups, or Cohorts, of participants over several years.

1.1 Description of CORE

CORE was a pilot within the Energy Trust of Oregon's (Energy Trust) Production Efficiency program that helped medium-sized industrial customers implement strategic energy management (SEM) practices at their facilities. Through this offering, Energy Trust provided technical training and energy modeling to encourage customers to implement energy-saving measures identified during participation and determine the energy impact of those measures. In return, customers committed to putting into place behavioral and operational changes that were expected to result in energy savings.

CORE was implemented by Triple Point Energy (Triple Point), an energy consulting firm specializing in delivering SEM programs to the industrial market.[2] Triple Point trains participants' management and staff on SEM practices and provides direct support to staff on energy management projects. CORE services were delivered in a Cohort environment; each Cohort consisted of approximately 10 to 12 highly motivated, medium-sized industrial sites. Energy Trust assigns industrial program delivery contractors (PDCs) to assist customers with identifying and implementing capital projects. By design, the PDCs did not engage with the Cohort 1 participants during their CORE participation. For Cohort 2, the PDCs worked closely with Triple Point and their assigned CORE participants. For both Cohorts, oversight of any capital projects were handed off to the PDCs at the end of the workshops.

The CORE pilot consisted of two Cohorts: Cohort 1 began in July 2012 with 11 participants and concluded in October 2013 with nine, while Cohort 2 began in August 2013 and concluded in October 2014 with 12 participants. Eligible sites had utility spending of $50,000 to $500,000 annually on electricity and natural gas combined.

CORE participants were eligible to receive financial incentives through CORE. Milestone incentives of $1,000 were offered for completion of each of three milestones (providing utility and production data; knowing and understanding how to use the monitoring, tracking, and reporting spreadsheet model (MT&R) after the workshop; and tying the opportunity register and actions to the model). Milestone incentives were first offered to Cohort 1 but have since been expanded to a standard SEM incentive offering. At the conclusion of the CORE workshops, participants received an incentive of $0.02 per kilowatt hour (kWh) and $0.20 per therm of energy savings realized through CORE. Energy savings from operations and maintenance (O&M) measures were attributed to CORE, while capital projects were incented through standard program tracks. Annual savings and customer incentive amounts were based on the level of O&M savings achieved in the last three months of participation in CORE.

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[2] Since this evaluation, Triple Point has become part of CLEAResult.

This report covers the activities conducted by Cohort 2 during their first year of participation in the program. The report also revisits Cohort 1 approximately one year after their workshop participation ended. Navigant has divided this report into two main sections: the first is a process evaluation that focuses on interviews with participants in both Cohorts, Energy Trust program staff, and representatives from Triple Point; the second is an impact evaluation that verifies CORE energy savings and assesses capital measure savings (even though capital savings were not counted as a part of CORE).

1.2 CORE Cohorts and Activities

Each Cohort conducts activities throughout a 15-month process to identify, implement, and evaluate SEM practices. The activities are listed in Table 1-1. The activities are delivered through a combination of group workshops with the entire Cohort and individual workshops held at the individual participant sites. This is a refinement to the IEI delivery strategy, which was initially only delivered through group workshops and group teleconferences; the program has now adopted the practice of also holding individual workshops at the participant sites.

Table 1-1 Timeline of Cohort Activities

Event	Description	Cohort 1 Date	Cohort 2 Date
Kickoff Workshop	Participants met and began to develop their SEM programs.	July 24, 2012	August 7, 2013
Energy Inventory	Triple Point conducted a walk-through of facility with each participant to identify energy-saving opportunities.	July 30, 2012 to October 5, 2012	September 6, 2013
Quick Strike Assessment	Triple Point conducted an additional onsite walk-through to identify system and process improvements.	July 30, 2012 to November 2, 2012	September 2, 2013 to November 15, 2013
MT&R Workshop	Participants were trained on how to use the MT&R model to monitor and analyze their energy use.	November 6, 2012	November 13, 2013
Onsite MT&R	Triple Point coached participants in using the MT&R model at the participant's facility.	November 7, 2012 to January 11, 2013	January 15, 2014 to March 31, 2014
Quick Strike Implementation	Triple Point helped participants implement low-/no-cost projects at the participant's facility.	December 3, 2012 to August 2, 2013	December 3, 2013 to July 31, 2014
Organizational Engagement and Planning Workshop	Participants created an engagement plan for their organization. Participants were coached in employee engagement—specifically, how to raise awareness and desire for energy savings and how to manage resistance and recognize achievements.	March 12, 2013	February 5, 2014
Organizational Engagement Activities	Participants held planned activities at their facility to promote best practices and energy awareness.	March 12, 2013 to August 9, 2013	February 12, 2014 to July 31, 2014
Wrap-Up Meetings	Participants finalized their data and activities and created a plan for continuous energy reduction and cost savings.	July 15, 2013 to August 9, 2013	July 15, 2014 to August 8, 2014
Report Out and Celebration	Participants presented their achievements to other Cohort members and Energy Trust representatives. Participants received their Energy Trust incentive from CORE.	October 29, 2013	October 29, 2014

The Cohort 1 kickoff workshop was held on July 24, 2012, and the report out was held on October 29, 2013. The Cohort 2 kickoff workshop was held on August 7, 2013, and the report out and celebration was held on October 29, 2014.

1.3 Evaluation Objectives

The purpose of the CORE evaluation is to verify whether medium-sized industrial customers can embrace and adopt SEM practices and embed them in their corporate culture given the inherent time and resource constraints of smaller industrial sites. The evaluation objectives are to test and refine the delivery model, compile feedback and lessons learned, and determine which types of companies are

successful with SEM. In addition, the evaluation will verify the energy savings resulting from the program and assesses the persistence of those savings.

The specific research questions associated with these objectives are:

- Determine what motivates firms to participate initially and maintain efficient practices later, and the best ways to recruit them.
- Establish whether small industrial customers can successfully adopt SEM practices and embed them in their corporate culture.
- Analyze the characteristics of companies that achieve and maintain significant savings and determine whether there are organizational or industry differences that drive success.
- Assess the composition of energy teams in terms of roles at the company and skills; explore what makes an effective team.
- Assess corporate- and employee-level engagement with SEM and compile feedback and lessons from customers.
- Determine which services provide the greatest benefit to small companies.
- Assess whether customer MT&R systems make sense and are useful once they are operational.
- Assess the persistence of SEM practices and O&M measures over the short term.
- Verify the energy savings from customers engaged in CORE.
- Solicit participant feedback on the program materials, including the MT&R, opportunity register and workshop materials.

1.4 Evaluation Methodology

This section summarizes the evaluation activities the Navigant team conducted to meet the evaluation objectives and research questions. In the second year, Navigant conducted interviews with staff from Energy Trust and Triple Point in December 2014. Navigant also interviewed participants in both Cohorts. There were no drop-out participants during the second year so Navigant did not conduct drop-out interviews during this stage. These activities are described in detail in the following sections.

1.4.1 Process Evaluation

The Navigant team conducted in-depth interviews with several parties as part of the second year process evaluation. Interviews with Energy Trust and Triple Point documented the program processes and operations and continued to assess whether the program is operating effectively. Navigant also conducted telephone interviews with customers in Cohort 1 and Cohort 2. Each of these interviews is described below. Copies of the interview guides are in Appendix A.

1.4.1.1 Program Management Staff Interviews

The Navigant team interviewed representatives from Energy Trust Program Management staff responsible for CORE in December 2014. This was a follow-up to the first year interview, which took place in October 2013. The interview covered the following topics:

- Major changes to the program since the first year
- Challenges, lessons learned, and future plans
- Customer interest in CORE and estimated market potential
- Success of customer targeting and recruitment efforts

- Engagement with participating customers' employees on energy efficiency
- Organizational acceptance of SEM principles and Triple Point guidance
- Characteristics of small industrial customers that are most successful with SEM
- Subset of SEM activities that provide the greatest benefit to small companies
- Adoption, reliability, and persistence of SEM practices
- Ability of Triple Point to accurately project SEM energy savings
- Appropriateness of Triple Point reimbursement and customer incentive levels
- Engagement with customers about capital projects and efficient equipment
- Satisfaction with Triple Point's implementation of CORE

1.4.1.2 Triple Point Interviews

The Navigant team also conducted in-depth interviews in December 2014 with the representatives from Triple Point. The interview covered the following topics:

- Triple Point processes, management, costs, and operational issues
- Major changes to CORE since it launched and changes between Cohort 1 and Cohort 2
- Challenges, lessons learned, and future plans
- Customer interest in CORE and estimated market potential
- Success of customer targeting and recruitment efforts
- Engagement with participating customers' employees on energy efficiency
- Organizational acceptance of SEM principles and Triple Point guidance
- Characteristics of small industrial customers that are most successful with SEM
- Subset of SEM activities that provide the greatest benefit to small companies
- Adoption, reliability, and persistence of SEM practices
- Ability of Triple Point to accurately project SEM energy savings
- Appropriateness of Triple Point reimbursement and customer incentive levels
- Engagement with customers about capital projects and efficient equipment
- Satisfaction with Energy Trust processes and management

1.4.1.3 Cohort 1 Participant Interviews

For this report, the Navigant team interviewed Cohort 1 participants approximately one year after their first year of participation in CORE. These interviews took place between November 2014 and January 2015. Navigant had previously interviewed these participants at the end of their first year of participation; between November 2013 and January 2014. Findings from these interviews can be found in the Year 1 report. This year's interviews occurred between November 2014 and January 2015, and lasted between 30 and 60 minutes each.

Figure 1-1 shows the timeline of the interviews, relative to the CORE activities.

Figure 1-1. Timeline of Cohort 1 Activities
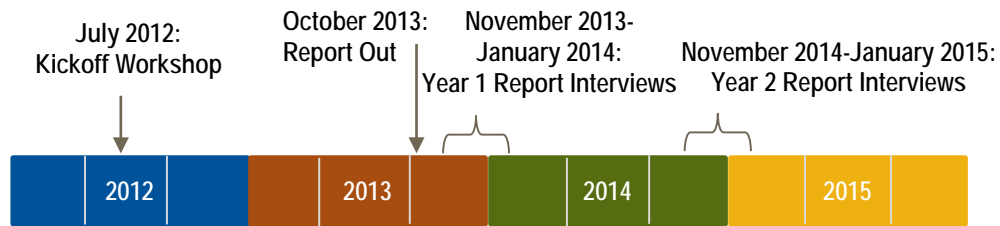
Where possible, the interviews included some or all members of the participant's current CORE energy team, with the understanding that participants' energy teams may have evolved since the end of CORE. The interviews were designed to follow up on issues discussed during the first year interviews and covered the following topics:

- Continued level of engagement of employees in SEM
- Continued organizational acceptance of SEM principles and Triple Point guidance
- Maintained use of an energy management plan, energy team, and SEM policies and procedures
- Evolution of the energy team, including roles and skills, its effectiveness, and the organization's ability to maintain it and recruit new members as necessary
- Continued implementation and usefulness of the MT&R model.
- Subset of SEM activities that continued to provide the greatest benefit
- Reliability and ability to maintain SEM practices and savings
- Updated savings goals and whether they were met or exceeded
- Capacity, resources, and organizational support for making changes and continuing to implement SEM
- Other challenges and barriers customers faced in SEM implementation
- Installation of capital projects and efficient equipment or plans to do so as a result of CORE
- Characteristics of customers that were successful with SEM and saw the biggest savings

1.4.1.4 Cohort 2 Participant Interviews

The Navigant team also conducted in-depth interviews with each of the 12 participants in Cohort 2 after the end of their first year of participation. Interviews took place between December 2014 and February 2015; each interview lasted approximately 60 minutes.

Figure 1-2 shows the timeline of events for Cohort 2 in relation to the program start and end dates.

Figure 1-2. Timeline of Cohort 2 Activities

Where possible, the interviews included some or all members of the participant's CORE energy team. The interviews covered the following topics:

- Customers' motivation for participating
- Overall satisfaction with CORE
- The value of participation in CORE to customers
- Satisfaction with Energy Trust and Triple Point processes and management
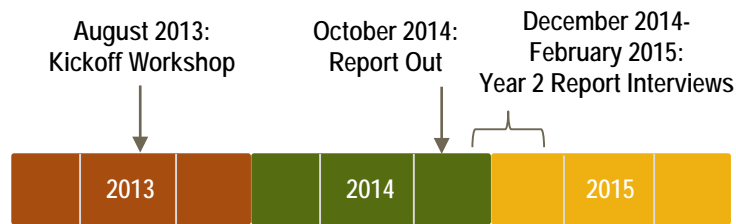- Satisfaction with workshops and Triple Point services, including onsite technical support meetings
- Level of engagement of employees in SEM
- Organizational acceptance of SEM principles and Triple Point guidance
- Creation of an energy management plan, energy team, and SEM policies and procedures
- Composition of the energy team, including roles and skills, its effectiveness, and the organization's ability to maintain it
- Implementation and usefulness of the MT&R system
- Subset of SEM activities that provided the greatest benefit
- Adoption, reliability, and ability to maintain SEM practices and savings
- Savings goals and whether they were met or exceeded
- Capacity, resources, and organizational support for making changes and adopting SEM
- Other challenges and barriers customers faced in SEM implementation
- Satisfaction with and appropriateness of Energy Trust incentives
- Installation of capital projects and efficient equipment or plans to do so as a result of CORE
- Characteristics of customers that were successful with SEM and saw the biggest savings

1.4.2 Verification of Program Impacts

As part of the evaluation of Cohort 1 participants in CORE, Navigant performed an impact evaluation of the participants. Navigant arranged onsite meetings for six of the nine Cohort 1 participants. One of the participants had two locations; during the visit to the first location, Navigant determined that a site visit to the second location would not be justified based on time required from site personnel and the remote availability of data. Therefore, Navigant discussed measures with the energy team in person and obtained operational data for both sites from them. Three sites, two of which claimed no savings, declined to participate in the impact evaluation.

Table 1-2 summarizes energy savings and the disposition of the evaluation for each site. Although we were not able to reach every Cohort 1 participant, we were able to evaluate 94 percent of *ex ante* electric savings (1,946,214 kWh) and 39 percent of *ex ante* gas savings (10,834 therms).

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Table 1-2 Participant Summary

Participant ID	*Ex Ante* kWh	*Ex Ante* therms	Able to Evaluate?	Site visit	Data received	Capital measures
PE5399	125,209	2,300	Yes	Site visit	Updated MT&R	No capital measures
PE5398	261,223	-	Yes	No site visit	Updated MT&R, production data & utility bills	No capital measures
PE5407	52,682	-	Yes	Site visit	Updated MT&R	New paint line
PE5409-a	218,327	-	Yes	Site visit	Updated MT&R	Lighting retrofit and controls (2 projects), compressed air nozzle replacement, oil water separator
PE5409-b	24,969	-	Yes	Site visit	Updated MT&R	
PE5411	837,115	-	Yes	Site visit	Production data and utility bills	VFD, lighting controls
PE5405	426,689	8,534	Yes	Site visit	Production data	Dryer replacement
PE5402	72,148	2,419	No, inadequate data	Site visit	No data received	Lighting retrofit, air compressor replacement
PE5297	-	12,375	No, not able to engage participant			
PE5404	59,976	2,324	No, not able to engage participant			
PE5409	-	-	No savings			
Total	2,078,338	27,952				

Onsite performance verification activities were undertaken during site visits. In general, onsite inspections encompassed a range of activities, including the following:

- Simple verification of measure installations and implementation of operational measures
- Confirmation of capital measure equipment counts, capacities, and efficiencies
- Observation of the quality of installation of the technology for capital measures
- Collection of nameplate and other performance data for relevant equipment
- Collection of production or other relevant data for MT&R from the facility
- Observation of control systems and schedules
- Confirmation of baseline conditions (to the extent possible)
- Discussions with building operators about building construction features, occupancy schedules, and energy systems characteristics and operation

Navigant also requested billing data for each participant site from Energy Trust. Navigant used the updated production data obtained from the sites along with weather data from the National Oceanic and Atmospheric Administration (NOAA) to update the MT&Rs and determine savings for both the first and

second full years after the implementation period. Navigant used the same baseline as the implementer in determining savings but had a significantly longer measurement period, which resulted in significantly different savings at some locations. The impact evaluation is described in detail in Section 3. Detailed site reports are provided in Appendix B, which contains confidential client data and is separate from this publicly available report.

1.4.3 Cohort 2 Review of MT&R Models

Navigant conducted a review of the MT&R tools and reports used by the Cohort 2 participants. These were high-level reviews to determine the state of participants' energy tracking and reporting capabilities. The primary focus of the reviews was to determine whether:

- Participants have implemented an MT&R model and are actively using it to track energy consumption and savings
- The reports and energy information make sense, are understandable to the customers, and are useful and actionable
- The reports contain enough information to reasonably use them for tracking energy consumption and savings
- The assumptions and models used to track energy usage and savings are reasonable
- A solid baseline that energy savings can be measured against was established
- O&M savings can be separated out from capital project savings and are reasonable given the activities recorded in customers' activity logs
- Annual energy savings projections from SEM activities are reasonable and are in line with savings calculated in the MT&R workbooks
- SEM energy savings calculated in MT&R workbooks can be accurately verified after one year

Results from this review are discussed in Section 3.2.

2. Process Evaluation

For the Year 2 CORE evaluation, Navigant conducted in-depth interviews with Energy Trust program staff, representatives from Triple Point, the nine participants in Cohort 1, and the 12 participants in Cohort 2. This section summarizes the interview findings.

2.1 Program Management Staff Interview

Navigant interviewed Energy Trust program staff about Cohort 2's experience with CORE, particularly as compared to or contrasted with Cohort 1, as well as their impressions of CORE overall after the second year. Interview topics included customer recruiting, customer participation and engagement, Cohort 2's success at implementing SEM, feedback on Triple Point's support of Cohort 2, PDC involvement, overall success of CORE, and CORE expansion.

2.1.1 Customer Recruiting

Energy Trust program staff first discussed the cumulative experience of both Cohorts with respect to recruiting. Factors that they believed made companies across both Cohorts more likely to participate in CORE included:

- A strong inclination to sustainability
- Specific goals such as being a lean manufacturing company or being in cost-cutting mode
- Leadership in the form of enthusiastic individuals

Energy Trust staff mentioned that these characteristics were identical to IEI recruits. In other words, they could not differentiate between large, medium, and small customers in terms of factors influencing successful recruitment.

Energy Trust staff also discussed recruiting differences between the two Cohorts. From Cohort 1 to Cohort 2 there was one major change in recruiting practices: Cohort 2 recruiting heavily involved the PDCs, much more so than with Cohort 1. For Cohort 1, Energy Trust staff had thought they could recruit on their own with Triple Point's help, but during recruitment for Cohort 2, they found that it was more effective to have the PDCs involved in identifying firms and helping with recruitment. Specifically, Energy Trust staff realized that PDCs were already working with medium-sized customers and thus already had relationships with firms that would be good candidates for CORE.

2.1.2 Customer Participation and Engagement

Energy Trust staff believed that Cohort 2 participants were strongly engaged with CORE. Even though some of the customers did not fully adopt all of the SEM principles, in Energy Trust's experience, this is typical of prior Cohorts within their SEM programs. Energy Trust staff noted that there were at least three sites with an energy team consisting of only one person. They expected that if that one person is not invested in SEM, the company as a whole is not likely to engage with SEM principles.

Energy Trust staff also observed that customer engagement fostered through CORE extended to capital projects. Although Energy Trust staff did not want to encourage capital projects during the CORE

participation year because they would not contribute to SEM savings, they did want the customers' experience with CORE to lead to future capital projects. In the context of the pilot, they knew of at least one capital project that was identified through the energy scan and thus was directly influenced by CORE.

Energy Trust staff stressed that the milestone incentives and energy savings incentives were important tools for maintaining customer engagement. Staff commented that Triple Point believed that the milestone incentives "made a huge difference" in encouraging customers to perform certain activities, such as providing data, because those incentives were directly tied to the activities themselves. The milestone incentives were also useful for engaging customers who did not ultimately achieve substantial energy savings during the one year offering by recognizing them for their efforts. The milestone incentives were first offered by Energy Trust in the CORE pilot. They were so successful at motivating positive behavior in Cohort 1 that they have since become part of the regular incentive offering for all SEM programs.

2.1.3 Cohort 2 Success at Implementing SEM

Energy Trust staff felt that most of the customers were at least reasonably successful at implementing CORE principles and observed that the customers of various sizes encountered the same difficulties. Staff found it difficult to predict which customer characteristics would predict future success at SEM, as there did not seem to be a common set of indicators among Cohort 2 participants.

Energy Trust staff specifically commented on Cohort 2's lack of gas savings. They had hoped that the CORE program would generate more gas savings than it actually did. There were two related issues that they identified. The first issue was that customers had difficulty achieving gas savings. One underlying factor limiting the overall gas savings was that most customers were not eligible to receive gas incentives, since they were transport gas customers, which Energy Trust staff found surprising. An assumption had been made in the pilot design phase that all participants would be eligible because they would be smaller and less likely to be transport customers. They also suspected that many of Triple Point's educational materials for the Cohort were electricity-related, and this caused the CORE activities to focus on electricity measures at the expense of gas measures.

Energy Trust staff observed that CORE participants also had difficulty modeling gas savings. Customers in the Cohorts tended not to have granular data, meaning that there were few data points on which to base a model. Furthermore, gas is typically weather-driven, or seasonal, rather than production-driven. Energy Trust staff suggested that in future iterations of CORE implementation contractors may need to structure the MT&R for gas differently from the MT&R for electricity to account for these factors. (More details on the analysis of participants' gas models are in Section 3.1.2.)

2.1.4 Triple Point's Support of Cohort 2

Energy Trust staff was impressed with Triple Point's support and coaching of Cohort 2. The most positive aspect they observed was the rich interactive experience that Triple Point staff provided to the participants in the Cohort. Triple Point staff had a high level of skill at leading collaborative processes to engage people in group conversations. They fostered such a high level of connection among Cohort 2 participants that several expressed the desire and intention to remain engaged with each other even after

CORE. Overall, Energy Trust staff believed that Triple Point staff used their resources (funding, time, etc.) effectively for Cohort 2.

Energy Trust staff noted that Triple Point did not make major changes to their implementations of the pilot between Cohort 1 and Cohort 2, but there were some differences between the Cohorts that affected Triple Point staff's ability to coach and support the Cohorts. Energy Trust staff observed that more Cohort 2 customers seemed dissatisfied with their CORE experience, and at least three sites did not intend to use the model after CORE. They conjectured that Cohort 2 participants did not find the model useful, and there may be simpler models that would be better for some customers. Some Cohort 2 participants had more difficult models than Cohort 1 participants by their nature—for example, one site had a large number of meters, and other sites had variable loads due to batch processes. Energy Trust staff observed that Triple Point staff put forth the same amount of effort with these difficult customers as with a much larger site and suggested that there should be a threshold within an SEM program for complexity and site size—if the site is small, the model should not be too complex. Energy Trust staff suggested that future iterations of the program should include clear milestones, thresholds, and tracking of customer progress to identify struggling customers early.

Based on observations of the levels and types of support that Triple Point provided to CORE participants, Energy Trust staff is implementing a Cohort-based reimbursement scheme that includes fixed costs to run a Cohort and variable costs per site. Currently when someone drops out of the Cohort, Energy Trust cancels the work order for that participant and pays Triple Point for the work completed thus far. However, Triple Point's fixed costs do not go down when someone drops out, which means that under the current scheme Triple Point is exposed to that loss in revenue. On the other hand, Energy Trust does not always know how many sites will be in a Cohort until just before the year's activities begin, meaning that the reimbursement scheme needs to include a per-site factor as well. A scheme based on both fixed Cohort costs and variable site costs would allow them to budget more for technical work at a large site.

2.1.5 PDC Involvement

Energy Trust staff commented that PDCs were more involved with Cohort 2 participants early in the process than they had been with Cohort 1. As discussed in the Year 1 report, one complaint from the PDCs after Cohort 1 was that they had not been able to count the energy savings from the CORE toward their savings targets. As a result, Energy Trust allowed PDCs to be able to count Cohort 2 savings, which the PDCs appreciated.

Energy Trust staff noted that it was important to find the right balance of PDC involvement. For example, if PDCs are too involved and do too much of the work, customers may not adopt SEM principles on their own; on the other hand, PDCs can encourage less committed customers to participate more fully. In some ways, the design of the program intentionally structured the PDCs' involvement in that it had built-in points for them to intervene with their customers.

Energy Trust staff believed that it would be important to continue to involve the PDCs in future CORE-related offerings because they felt the PDCs were a critical part of maintaining the continuity of the relationship between Energy Trust and its customers. The PDC can also act as a technical resource for the customer during certain CORE activities such as energy scans. For Cohort 2, Triple Point staff

presented the MT&R models to the PDCs so that the PDCs could be aware of and comfortable with the models. This was a change from Cohort 1 that made program staff more closely involve the PDCs in the CORE process and facilitate the PDCs' future relationship with their customers.

2.1.6 Overall Success of CORE and Lessons Learned from the Pilot

Overall, Energy Trust staff felt that the CORE pilot was successful at demonstrating the effectiveness of CORE. Energy Trust staff observed that after participating in CORE, customers had a greater level of engagement in other Energy Trust offerings (e.g., custom and prescriptive projects and incentives) and had a strong degree of confidence and empowerment around energy. The high degree of networking that occurred among participants also reinforced the effectiveness of a Cohort-based approach.

Participants exhibited a more positive attitude about SEM by the end of the pilot, which Energy Trust acknowledged was not measurable. However, they predicted that this would be valuable in the long term as customers undertake more projects.

Energy Trust staff also observed that the CORE pilot demonstrated that CORE is likely to be cost-effective in terms of energy savings. The goal for Cohort 2 was five percent savings, but the average savings ended up being seven and a half percent across the Cohort despite variations in savings among customers. Small and medium customers require identical or very similar program delivery as large customers, however, meaning that delivery costs tend to be the same regardless of customer size. For example, Energy Trust staff acknowledged that it is no easier and no more difficult to create models for small customers than for large customers. Also, Energy Trust staff found that recruiting results were similar among small, medium, and large customers. They cautioned that a future judgment of cost-effectiveness will hinge on what Energy Trust ultimately pays for technical services. Such a judgment would also need to account for implementation cost and measure lives. They believed it would not be an instant success like IEI, but that it would still be workable.

Energy Trust staff also mentioned that the process of developing the business brief was a useful basis for running the pilot. The pilot business brief provided a strong framework for evaluation and helped keep the program on target because everyone was on the same page.

2.1.7 CORE Expansion

As a result of their CORE experience, Energy Trust has consolidated the CORE and IEI programs into a single offering. This is because there is no significant difference in program delivery methods between CORE and IEI. CORE companies have a similar percentage of energy savings but because they are smaller than IEI customers, their absolute savings are smaller.

Energy Trust has made another key delivery design change: custom PDCs now serve all sizes of industrial sites as assigned account managers. Therefore, if a customer signs up with Energy Trust, their PDC is determined by their location rather than their size or energy spend. Energy Trust staff anticipated that within three to four years, the consolidation of their SEM offerings would transform their entire program and how they do business. Their experience with CORE solidified the idea that they should be extending all of their services to all of their industrial customers.

Other characteristics of the expanded, combined program include:

- Six workshops—a compromise between CORE's four and IEI's eight
- Retaining the toolkit of energy metering devices
- Expanded supply base for implementers—in addition to Triple Point, Energy Trust planned to bring in additional firms that were already working for them developing other SEM offerings

2.2 Triple Point Interview

Navigant interviewed Triple Point staff about Cohort 2's experience with CORE, covering many of the same areas as the Energy Trust interview to get their point of view. In addition to similar questions about Cohort 2's CORE experience, Navigant also asked Triple Point staff about implementation topics such as the level of coaching and support needed and feedback on the CORE workshops. Navigant conducted a single interview with multiple staff members, which took place in December 2014.

2.2.1 Customer Recruiting

Triple Point staff observed that some recruiting methods used for Cohort 2 were more successful than others. They commented on three of these, which are listed below:

- **Drawing on PDC contacts.** Triple Point staff felt that involving the PDCs and leveraging the customer relationships with them was important because the PDCs already have a rapport with customers and are already connected to the decision makers within each company.
- **Cold calling.** Triple Point mentioned that it was difficult to recruit participants by cold calling. Triple Point staff connected with two prospective participants through this method, but ultimately they were not a good fit for the program.
- **Contacting through trade associations.** The Northwest Food Processor Association (NWFPA) and the Society of Manufacturing Engineers both sent out messages to their members advertising CORE. Triple Point staff noted that several companies had heard of the program through NWFPA, and Energy Trust's connection with the trade association gave them more credibility.

Triple Point staff noted several key elements of CORE that were particularly attractive to recruits. These included:

- Opportunity to network with other participants
- Receiving a data logger package
- Receiving and learning to use a customized MT&R model

To guide future program recruiting, Triple Point staff identified certain characteristics to look for in prospective candidates. Similar to larger customers participating in IEI, the most important characteristic is the presence of an engaged decision maker with the authority to commit the company to the program. Triple Point staff also recommended that Energy Trust not spend resources to recruit very small companies (i.e., those using less than 1 million kWh per year) or companies without sufficient cash flow, as these types of companies are unlikely to achieve program savings commensurate to the cost to deliver the program to them.

With respect to expanding SEM to more industrial customers, Triple Point staff believed that participants have been recruited from the majority of Energy Trust's established contacts for the two pilot Cohorts. If Energy Trust is to expand the program further, they must attempt to recruit companies

that have not engaged with Energy Trust before or re-engage with companies that have already gone through an SEM program.

2.2.2 Cohort 2 Participation and Engagement

Triple Point staff commented positively on participation and engagement levels within Cohort 2, noting that for most of the participants, organizational commitment to CORE principles was high. They referred to a few of the participants as "rock stars," as they adopted the practices quickly and were proactive about conducting the CORE activities. (These customers were among those achieving significant—over five percent—energy savings.)

Triple Point staff observed that customers engaged more with certain CORE activities. For example, about 75 percent of participants implemented O&M practices like turning off machines. Companies can sustain these practices if they take the additional step of building them into their standard operating procedures, making it more likely that employees will follow them on a regular basis. Another CORE activity that tends to drive high engagement levels is the energy scan—involving the executive sponsor in the energy scan can lend authority to the process and make it more likely that the company will follow-through with the interventions they identify through the scan. Finally, Triple Point staff noted that employee engagement was a popular topic among CORE participants, although it was difficult to quantify the energy savings associated with it.

Peer-to-peer networking also drove higher participant engagement. Not only did customers in Cohort 2 visit each other's sites, they visited some Cohort 1 sites as well. In a change from Cohort 1 procedure, Triple Point staff circulated a contact sheet for Cohort 2 so that participants could give permission to share their contact information. Although Energy Trust staff had previously not followed this practice out of concerns about confidentiality, Triple Point staff observed that most customers were only concerned with keeping production data confidential and were willing to share contact information. Possibly as a result of this practice, Cohort 2 customers tended to engage with each on their own, without much prompting from Triple Point staff.

Navigant asked Triple Point staff to describe the level of engagement with MT&R models in particular, given that energy tracking is a critical aspect of SEM. Triple Point staff reported that about half of the Cohort 2 participants had models that were easy to update and, therefore, would likely continue to update their models. The other half of the Cohort 2 participants had more complicated MT&R models and would most likely not continue to update them. Triple Point staff acknowledged that offering the MT&R as a tool for customers was a desirable benefit of participation that helped with recruitment and any changes to the energy tracking approach would have to consider that benefit.

With respect to capital and O&M projects, Triple Point staff observed that greater PDC involvement in CORE drove a major shift between Cohort 1 and Cohort 2. Particularly, the PDCs influenced the participants in Cohort 2 to undertake capital projects, leading to many more capital projects than Cohort 1. Capital projects occasionally competed with O&M projects during CORE in cases where the model predicted large capital project savings and Cohort participants wanted to move forward with capital projects while they had support from management to undertake the investment.

Triple Point staff reported that milestone incentives and energy savings incentives were effective at engaging participants in the CORE activities. Milestone incentives of $1,000 were offered for completion of each of three milestones: 1) providing utility and production data, 2) knowing and understanding how to use the MT&R model after the workshop, and 3) tying the opportunity register and actions to the model. In particular, the first and third milestone incentives most strongly influenced participants to complete the associated activities. The second milestone—requiring participants to update their MT&R model at least once—was less influential because most participants were inclined to do this already. Triple Point staff noted that participants understood that the energy savings themselves were often more significant than the incentives, but customers still felt that it was important to have a relatively large, discrete payment to justify their own time spent on the project to their management.

2.2.3 Cohort 2 Success at Implementing SEM

Triple Point staff observed certain practices or characteristics of participants that correlated most strongly with success at CORE. These included the following:

- **Effective energy champion.** The presence of a strong energy team leader who was highly motivated and who had enough time and authority to make changes was critical to success among participants. Triple Point staff could not always predict early in the year that an energy champion or energy team would be successful; for example, one participant began their CORE year with only one person on the energy team, but he was able to recruit two other team members and generate a plan for moving forward. On the other hand, Triple Point staff acknowledged that if success hinges on the energy champion alone and they leave their company, the company may not be able to continue the program.
- **Management support.** Management support was also important for success. In addition to having the authority to commit money and staff time to CORE, they also provide a less tangible benefit: they demonstrate to the rest of their company that CORE is important and influence the acceptance of CORE among other employees. In many cases, however, management wanted to see an estimate of program benefits, particularly monetary benefits, before lending their support to the program.
- **Energy team meetings.** Triple Point staff observed that the Cohort 2 participants that were most successful at CORE held regular team meetings over the course of the program. Likewise, participants that did not hold team meetings achieved relatively lower savings. Triple Point staff saw a lack of team meetings as a red flag, indicating low commitment and correspondingly lower savings.
- **Other practices.** Other practices Triple Point staff observed that correlated with energy savings included formalizing goals and executing some projects early on to build momentum.

Triple Point cautioned that not all outcomes are predictable. Similar to IEI, some initially promising customers did not achieve energy savings. They conjectured that this is primarily due to the nature of manufacturing, which can rapidly change companies' circumstances.

Triple Point staff identified two customers in Cohort 2 that they believed were simply too small – on the order of two million kWh in annual energy use - to be successful at SEM. These customers did not have the infrastructure within the organization to implement SEM. Not only did they have no resources to dedicate, their energy use was so small that the savings would not be worth the level of effort required to implement SEM.

2.2.4 Coaching and Support of Cohort 2

Cohort 2 required similar levels of coaching and support as Cohort 1. Triple Point staff had expected that it would be more difficult to arrange meetings for a larger group (12 participants as opposed to nine in Cohort 1), but this ultimately had a negligible effect on the schedule. As with Cohort 1, Cohort 2 participants primarily required coaching and support with respect to their MT&R models. Triple Point staff accommodated specific Cohort 2 participants in the following ways:

- Energy modeling approaches that were different from the typical MT&R approach, including a key performance indicator approach, a before-and-after comparison, and a bottom-up logging effort. These were necessary for customers with unusual energy use patterns—for example, one customer's electricity use did not correlate with production in any way.
- Follow-up energy scan for one company.
- Extra data logging for one participant that installed 50 pieces of equipment during the program in order to compare their final energy use to baseline conditions.

Triple Point staff cautioned that the need for high levels of coaching and support with MT&R for a particular customer may indicate that the customer is not developing the ability to maintain the MT&R models on their own. Consequently, such customers may be less likely to continue to use their models in the future without further support. This also applies to customers that undergo major process changes after CORE but cannot incorporate the changes into the models.

2.2.5 Year 2 CORE Workshops

Triple Point staff reported no major changes to the content or staffing of the CORE group workshops between Cohort 1 and Cohort 2. They did slightly adjust the sequencing of workshop content and the workshop schedule. This resulted in a large gap between the March workshop and the report out and celebration in October (see Table 1-1 for information on the workshop content and schedule). Triple Point staff suggested scheduling a fifth workshop during that interval with a focus on sustaining savings. In this workshop, participants could share ideas for maintaining their energy savings. Triple Point staff believes a group meeting would be more effective at helping participants maintain their momentum than the individual check-ins they usually have during this timeframe due to the peer pressure provided by a group atmosphere.

Triple Point staff also suggested adding more employee engagement resources to the meeting materials. These could include factoids, posters, displays, or other small items they could loan out to participants. They felt these materials would help participants promote behavioral change more effectively within their organizations.

With respect to the individual workshops, as with Cohort 1, a Triple Point staff member conducted all of the onsite meetings for Cohort 2. Triple Point also brought in experts relevant to each site for the energy scan. Triple Point also conducted some of the check-ins over the phone to reduce costs. However, they mentioned that having face-to-face meetings regularly was important to maintain a connection with participants.

2.2.6 PDC Involvement

Triple Point staff, like Energy Trust staff, observed that PDCs were much more involved with Cohort 2 than Cohort 1. In particular, PDCs attended many of the meetings, including the wrap-up meeting. This made the wrap-up meeting a good opportunity for Triple Point staff to hand off capital projects to PDCs and, importantly, signal to the customers that they could now contact their PDCs about capital projects.

In general, Triple Point staff observed that many Cohort 2 customers strengthened their relationship with their PDC as a result of participating in CORE. They specifically praised Energy 350 for being highly supportive, attending many of the meetings, and helping participants achieve savings.

2.2.7 Energy Trust's Management of the Pilot

Triple Point staff reported that their relationship with Energy Trust was a good partnership. They mentioned that their point of contact at Energy Trust changed between the two CORE years, and it took some time to work through the changes in communications and decision-making styles. Particularly regarding energy modeling, Triple Point staff said that it would have been more efficient if they could have made some decisions without waiting for approval or scheduling a meeting to go over changes. One solution could be to have a standard set of approaches they could take without having to get approval for every decision. Triple Point staff noted that toward the end of CORE Year 2, it grew easier to work directly with the Energy Trust point of contact. Another helpful practice Triple Point found was to schedule a baseline model review meeting with the PDCs and Energy Trust early in the year to familiarize Energy Trust staff with the information in advance of the final reports.

2.2.8 Overall Success of CORE and Lessons Learned from the Pilot

Across both Cohorts, Triple Point staff reported success with the CORE program. Their experiences demonstrated that smaller customers can implement SEM through a trimmed-down structure that retains the elements needed to drive energy savings but reduces the time customers need to spend. In some ways, smaller companies are more suited to SEM because they can be more flexible than larger companies and can more easily make changes.

Triple Point staff expected that it may be a challenge to recruit new participants as the program continues. They recommended that Energy Trust develop more relationships with smaller customers and companies that have not previously participated in Energy Trust programs.

Triple Point staff mentioned that the program may not be suitable for the smallest customers who do not have the company infrastructure or resources to implement SEM. Additionally, these small customers do not achieve enough savings for them to internally justify the time and resources spent on SEM.

2.3 Cohort 1 Interviews (Year 2)

Shortly after the first year of Cohort 1's participation, the Navigant team collected background information on participants, both through interviews and by reviewing CORE materials such as the report out meeting slides, the opportunity registers, and the MT&R worksheets for each participant. The average Cohort 1 participant:

- Operates only one or two facilities
- Owns the facility in which CORE was implemented

- Is either a private company (four of the nine) or a subsidiary of a large conglomerate (five of the nine)
- Spends a significant percentage of total costs on energy—from two percent to over 20 percent

During the most recent Cohort 1 interviews, the Navigant team asked participants to report any significant changes to their circumstances during the previous year. None of the participants reported changes to their location, number of facilities, or ownership structure. However, several reported changes to the number of employees or turnover among their leadership. This, in turn, affected participant engagement for Cohort members.

2.3.1 Participant Engagement

One year after CORE, many of the participants in Cohort 1 continued to implement at least some of the practices learned in CORE; however, most also encountered challenges in maintaining their engagement. Table 2-1 summarizes the most significant successes and challenges participants reported after CORE participation:

Table 2-1 Successes and Challenges Reported by Cohort 1 Participants

Main Successes in Continuing Engagement	Main Challenges to Maintaining Engagement
• Considering energy when making capital purchases (three participants) • Continuing or initiating O&M measures (four participants) • Maintaining an energy team and replenishing members as necessary (two participants) • Tracking energy use (two participants)	• Employee and/or energy team turnover (five participants) • Inability to maintain energy data tracking (three participants) • Limited resources and competing priorities (two participants)

The following sections specifically address engagement among four groups within each company: the CORE energy team, management, maintenance employees, and production employees.

2.3.1.1 Energy Team

Many participants struggled to maintain engagement among their energy teams, with turnover of team members being one of the most significant challenges. None of the Cohort 1 participants had the same energy team one year after completion of CORE. All but one of the teams decreased in size, and most of the teams replaced members. Table 2-2 summarizes the changes to the number of people in each Cohort 1 participant's energy team over time.

Table 2-2 Changes to Cohort 1 Participants' Energy Teams over Time

Participant ID	Number of Energy Team Members		
	During CORE	At the End of CORE	One Year After CORE
PE5397	3	2	0
PE5398/5399*	3	3	2
PE5402	2	2	0
PE5404	6	4	3
PE5405	4	1	0
PE5407	3	3	2
PE5408	3	3	1
PE5409**	4	2	4
PE5411	4	3	1

This company had two sites enrolled in CORE and thus had two separate PE numbers.

The majority of the participants—six of the nine—still had an energy team one year after CORE, but five of these had reduced the number of members since the end of CORE. Three of the participants that lost energy team members were actively seeking new team members, specifically operations, engineering, manufacturing, and production employees, as well as employees skilled at working with data. Participants identified several factors that they believed contributed to success: corporate recognition of their efforts; tying energy team members' evaluations and, in some cases, compensation to the energy savings they achieved; and corporate goals and initiatives to reduce energy.

Not all participants were able to maintain engagement among energy team members—three participants did not have an active energy team one year after CORE. One of the interviewees reported that their team was inactive because other company priorities were taking precedence at the time of the interview. For the two other participants, their entire energy team had left during the year after CORE, and in both cases Navigant interviewed someone else at the company who had not originally been involved with CORE. However, both of these interviewees had some energy-related role at the facility: one was the maintenance manager and the other was the facilities and equipment manager. One of them mentioned that although the company did not have a formal energy team, it did have people that discuss energy management. Later in the interview, the same interviewee referred to this group of people as a team and observed that they often promoted energy-saving changes to their management. This team included the interviewee (the facilities and equipment manager), an environmental, health, and safety coordinator who had been hired six months prior, and the facilities supervisor. (This interviewee—PE5405—was the only company without a formal energy team to achieve verified energy savings, suggesting that the presence of even an informal team is beneficial.)

2.3.1.2 Management

Interviewees also commented on management engagement and support one year after CORE. Six of the participants said that their management was supportive of energy management activities, with a few of these reporting that their management was actively engaged. Many of the interviewees observed that

management was motivated primarily by monetary factors, and for one company, management incentives were based in part on energy savings. In other cases, the influence was higher on the corporate ladder. One interviewee reported that their parent company's goal to reduce electricity and gas usage guided the facility's actions. Even one of the participants that no longer had an energy team said that their management was more engaged in energy savings as a result of their participation in CORE. This interviewee mentioned that their management was motivated by payback and return on investment (ROI), taking into account Energy Trust incentives.

The other three participants felt that management was not supportive or engaged. One mentioned that their management was spending more resources on competing priorities (this company had undergone both a personnel reduction and a million-dollar expansion in the previous year). Another mentioned that the departure of their executive sponsor in the past year led to lower management engagement. For the third, SEM principles were a victim of their own success: the company's management believed they had made all the cost-effective improvements that they could during CORE, and as a result they did not prioritize energy projects. The management was refocusing the company's resources on processes such as lean manufacturing.

2.3.1.3 Maintenance Employees

Participants also experienced varying degrees of success in continuing to engage maintenance employees after the end of CORE. Five of the interviewees reported that their maintenance employee engagement either increased or remained the same in the year since CORE. One mentioned that they were able to achieve a cultural change in management and a higher degree of awareness of energy issues, while another attributed their success to frequent communication between the energy champion and the maintenance manager.

Other participants reported that maintenance personnel were less engaged after CORE. One specified that this was due to a loss of personnel. Another felt that because management did not prioritize energy management, this attitude trickled down to other employees to reduce engagement overall.

2.3.1.4 Production Employees

Several Cohort 1 participants struggled to maintain engagement among their manufacturing, or production, employees. One observed that the level of engagement was low even during CORE and had changed for the worse since the end of CORE. Others had difficulty with employee turnover and retention of best practices in the year after CORE, while another said that it was hard to find a consistent meeting schedule for personnel. Participants seemed to have the most success continuing to engage their production employees in specific energy-related tasks, such as detecting air leaks, after CORE. (See Section 2.3.3 for more discussion on O&M measures.)

One participant reported far more success than the others in their Cohort at engaging production employees. This participant's company initiated a system by which each employee's annual incentive is tied to the company's energy savings. The interviewee reported that this was a recent development that was inspired by CORE and felt that this initiative would ensure the CORE activities would persist since it directly incentivizes behavior change. Other employee engagement activities that this participant conducted included the following:

- Conducting a yearly employee survey that includes sustainability questions
- Posting how much energy they use on an energy board
- Discussing energy at plant meetings
- Lending energy loggers to employees at least once per year so they can measure energy use in their own homes
- Publicizing Energy Trust's website for residential programs, such as home energy assessments
- Including sustainability education during a week typically devoted to safety education

Perhaps most significantly, this participant's company initiated a system by which each employee's annual incentive is tied to the company's energy savings. The interviewee reported that this was a recent development that was inspired by CORE and felt that this initiative would ensure the CORE activities would persist since it directly incentivizes behavior change.

2.3.2 SEM Activities

SEM activities that participants learned during CORE included tracking energy using an MT&R model, tracking new savings opportunities using a system such as an opportunity register, and establishing and following energy policies, plans, and numeric reduction goals. One year after the end of CORE, Navigant asked participants whether they were continuing to perform the specific SEM activities that they learned in CORE. The project team gauged the factors that influenced participants to continue to perform these activities or discouraged them from doing so. The team also assessed whether any of these activities were related to higher energy savings.

2.3.2.1 MT&R Model

The purpose of the MT&R model, an energy tracking tool, was to measure energy use over time and predict the energy savings that would occur due to various actions. All of the Cohort 1 participants developed an MT&R model—some with help—during CORE, but most of the participants were not still updating their MT&R model one year after CORE. Table 2-3 summarizes whether each participant maintained their model over time.

Table 2-3 Status of Cohort 1's MT&R Models over Time

Participant ID	Developed MT&R during CORE?	Maintaining MT&R at the end of CORE?	At the end of CORE, did they *think* they would continue to maintain the MT&R?	Were they actually maintaining the MT&R one year after CORE?
PE5397	Yes	No	No	No
PE5398/5399*	Yes	Yes	Yes	Yes
PE5402	Yes, but the model was mostly maintained by Triple Point	Yes	Maybe – 50/50 chance	No, and interviewee had never heard of it
PE5404	Yes, but needed help from Triple Point	Yes	Yes	No, but planned to resume soon
PE5405	Yes, but did not find it easy to use	Yes	Yes	No
PE5407	Yes, but it was difficult to understand at the beginning	Yes	Yes	Yes
PE5408	Yes, and they won award for best use of the model	Yes	Yes	No; they could not update their model's baseline
PE5409	Yes	Yes	Yes	Yes
PE5411	Yes	They switched to their own regression model	No (using own model)	They were still using their own model (KPI)

This company had two sites enrolled in CORE, and thus had two separate PE numbers.

A minority of participants—four of the nine—were continuing to track their energy. Of these, two had corporate initiatives that already required them to track their energy and a third was using their own regression model that they had developed to track KPIs. Only one of the participants was continuing to update their MT&R model developed during CORE in the absence of a corporate directive to do so.

The participants maintaining their energy tracking system described ways in which they were using their MT&R:

- To measure the improvement in energy with respect to production from a major process upgrade.
- To identify more opportunities to save energy.
- To quantify the energy savings resulting from streamlining their processes, including changes due to lean manufacturing.
- To detect an increase in energy use from a malfunctioning variable frequency drive (VFD) air compressor.

Five of the participants were no longer maintaining their MT&R one year after CORE. Of these participants, three had expected to continue tracking their energy when asked in the interview at the end of CORE. After a year, however, they were not updating it for various reasons:

- One participant said that they had a management change, and the new management did not prioritize the MT&R model.
- Another participant lost their energy team, and the former energy manager did not pass on the knowledge of how to update the MT&R model.
- The third participant said that they needed to update their baseline but had not done so. (It was not clear if this was due to a lack of time or if they did not know how.)

The remaining two participants that were not updating their MT&R had already predicted this by the end of CORE. One of these participants also lost their entire energy team, and the interviewee was not involved in energy management. The other had difficulty updating their MT&R from the very beginning due to various issues such as inability to get interval data from their utility and a constant state of change in their small company. This participant also said that nobody in their company was interested in the results, so there was no motivation to overcome these challenges.

Interviewees who were not updating their MT&R model commented on how the workbook could have been improved to encourage them to use it. One observed that more training during CORE would have helped them feel more confident in their ability to update the model. Another (the same one who was unable to update their baseline) suggested that they would have benefitted from some additional assistance at the end of the year to help them produce an updated model with which they could move forward.

Even though many Cohort 1 participants struggled with formally tracking their energy use on a regular basis using the MT&R or another model, most of them—seven of the nine—used some of the monitoring equipment that they received through CORE, such as current meters and lighting monitors, for troubleshooting and verifying the impact of equipment changes. Three of the participants purchased new air leak detection equipment during the year after CORE. This suggests that even companies that lack the ability to use sophisticated energy tracking methods such as the MT&R model can still benefit from diagnostic tools.

2.3.2.2 Opportunity Register

By the end of CORE, all of the participants had identified items for their opportunity register. In fact, as noted in the Year 1 report, by the end of CORE, most of the Cohort 1 participants felt that the opportunity register was an important contributor to their energy savings and that it either helped them identify new projects or motivated them to complete projects they had identified prior to participating in CORE. One year after CORE, however, only two of the participants had added new projects to their opportunity register. Three others had continued to complete projects originally in their opportunity register. Of these, one participant completed a major process upgrade, as discussed in the previous section, which accounted for most of the items on the list.

Four of the participants had not updated their opportunity register, with one saying that they did not refer to it after CORE was over. Another specifically said that their head of facilities was their main driver for completing items, but that person had left the company. The interviewee said they would

consider refreshing the opportunity register once the new facilities manager was in place. Two of these participants had lost their entire energy team, and the interviewees for the second year interview had not been involved in CORE originally. Neither of the interviewees in this case had ever seen the opportunity register. One, however, mentioned that the company had implemented changes that had been identified through CORE.

2.3.2.3 Energy Policies and Goals

During CORE, the Cohort 1 participants were encouraged to develop an energy policy and energy savings goals. Table 2-4 compares the status of each participant's energy policy and energy savings goals over time.

Table 2-4 Status of Cohort 1's Energy Policies over Time

Participant ID	Had Energy Policy…		Energy Savings Goal…	
	…At End of CORE?	…One Year after CORE?	…At end of CORE?	…One Year after CORE?
PE5397	Yes	Yes	None	None
PE5398/5399*	No formal policy	No formal policy, but management objectives	5%	3%
PE5402	No	No	None	None
PE5404	Unwritten policy	Policy not used	3%	3%
PE5405	No	No	3-5%	Non-numeric goal
PE5407	Yes	Yes	5%	5%-10%
PE5408	Not formal	Not formal	3-5%	None
PE5409	Yes	Yes	2.50%	2.50%
PE5411	No	No	None	Yes, but believed they did not meet them

*This company had two sites enrolled in CORE, and thus had two separate PE numbers.

Of the participants without an energy policy at the end of CORE, none had implemented one in the year since CORE. Most of the participants that did have an energy policy—whether formal or informal— reported that they were still abiding by it one year after CORE. One interviewee said that the policy was in place but was not used. Subsequent Energy Trust SEM program offerings have intentionally minimized the importance of establishing a formal energy policy because they have found it not to be universally applicable across sites participating in SEM.

As discussed in the Year 1 report, the majority of the participants (six of nine) developed a numeric energy intensity reduction goal during CORE and found it useful to help them save energy. Of the six participants that set an energy goal during CORE, four continued to set a numeric goal in the year after CORE, with one of these participants even increasing their goal. (This was the participant that initiated a major process change during the year after CORE, and their goal reflected the savings they expected to achieve due to that change.) One of the six did not retain their numeric goal, but the interviewee said that he and the facilities supervisor had a non-numeric energy savings goal. The one participant that discontinued their goal said that they had not completed any CORE activities and would not expect to

meet any goal that they did set. This participant was not tracking their energy use and acknowledged that they would have no way to verify that they were meeting their goal. Another participant said that their company's corporate headquarters set goals for the facility that the interviewee felt were too high.

Two participants had neither set a goal during CORE nor set a goal since CORE. One of these had also stopped maintaining their MT&R model and thus could not track their energy to determine if they met their goal. For the other, the company's energy team had left, and the interviewee was not aware of any energy reduction goals.

2.3.3 O&M Measures

All savings claimed in CORE come from O&M measures implemented in CORE, and O&M measures are a primary emphasis of CORE. All participants implemented O&M measures during CORE. In Navigant's interviews one year after CORE, the project team found that O&M measures tended to persist; some participants that were not actively engaging in CORE in any other way were still maintaining the O&M measures established during CORE. For example, three of the participants that were no longer tracking energy use were still checking air leaks or conducting air audits, while another was lowering equipment to standby mode when not in use. One participant that said they had "no engagement" had nevertheless continued to follow the heating, ventilation, and air conditioning (HVAC) maintenance schedule previously set up with the manufacturer—in fact, the interviewee mentioned that the manufacturer had sent maintenance workers to their facility just a few weeks before the interview. Even one of the interviewees whose company's entire energy team had left and did not pass on any of the CORE information said that they were continuing to turn off equipment when not in use.

Participants acknowledged challenges in implementing O&M measures. One specifically mentioned that because of employee turnover, they had to continue to train new people in O&M practices. Another discovered that one O&M measure did not necessarily save energy: turning off heating equipment for less than an hour was impractical because it would take at least 45 minutes to heat back up and would delay production. This finding speaks to the importance of understanding the operational impacts of O&M changes; in some cases, the negative impacts on operation and production can outweigh positive impacts on energy intensity.

2.3.4 Capital Projects

At the end of CORE, several Cohort 1 participants had completed capital projects or had capital projects in the planning stages as a result of their participation in CORE, which was discussed in the Year 1 report. In the year after CORE, several participants had made additional capital purchases or completed capital projects. Although CORE encouraged capital projects, savings from capital projects do not count towards energy savings claimed by CORE. Navigant also confirmed capital project savings during site visits, and section 3.1.1 discusses Navigant's analysis of capital projects in more detail.

Several interviewees reported that their participation in CORE influenced capital purchases in the year after CORE. Ways in which CORE participation affected their capital investment decisions included the following:

- Prompting participants to consider the energy efficiency of equipment prior to purchase. Two participants mentioned that they now look for ENERGY STAR ratings or manufacturer ratings.

- Helping participants get management support by quantifying the ROI. Being able to show management the cost reduction from CORE gave participants more credibility when proposing future projects.
- Providing participants with introductions to contacts in the industry who ultimately helped them navigate the capital upgrade process and obtain incentives.

Some participants reported that they were not able to implement the capital projects that they had planned to do. Specifically, two interviewees had planned lighting projects but were not able to implement them. In one case, the interviewee specified that they were not able to get authorization for it in their capital budget. In the other case, the facility was unable to find light-emitting diode (LED) fixtures that could provide the lumen levels they needed. Budgetary and financial concerns were a common theme. One participant had planned to upgrade their boiler, but through consultation with their chief engineer, they did not feel that the payback was high enough at the time. One of the participants that did successfully implement capital projects mentioned that their headquarters expect capital budgets in the third quarter for the coming year, and it was a challenge for them to determine which capital projects would best use the available funds.

2.3.5 Relationships with PDCs

As discussed in Section 2.1.5, Energy Trust intended for PDCs to be a link between Energy Trust and customers after CORE. Three of the Cohort 1 participants worked with their PDC in the year after CORE. These interactions included a study on refrigeration efficiency, a complete air audit, and conversations about expanding a water recycling program. The other six participants had not worked with their PDC, typically because they were not implementing any capital projects or making equipment purchases at the time. Another participant was bypassing their PDC and working directly with Energy Trust. Other participants, however, had had no contact with their PDC since the end of CORE.

2.3.6 Expectations versus Reality from Year 1 to Year 2

At the end of CORE, many of the participants in Cohort 1 were excited about the knowledge that they had gained through CORE and optimistic that they would continue to implement the practices beyond CORE. However, in the interviews held one year after CORE, Navigant found that several participants' experiences had not met their expectations at the end of CORE. The two factors most responsible for this divergence were staff turnover and discontinuing use of the MT&R model.

- **Staff turnover.** Many of the participants experienced turnover among their employees, management, or energy teams, which hindered their ability to maintain CORE practices. This resulted in participants constantly having to train new employees in SEM practices. In other cases, staff reductions, particularly among maintenance employees, made it more difficult to implement energy-saving projects due to a lack of bandwidth among remaining employees. With respect to management turnover, at least one interviewee said that new management was not as invested in energy savings as the old management, which led to a lack of support and reduced ability to accomplish energy management activities. Finally, many of Cohort 1's energy teams themselves experienced turnover. While some teams retained one or two members who were able to able to re-train staff to take on the role, others were still seeking people to fill roles. Three energy teams disbanded entirely in the year after CORE; in two of those cases, most of the CORE knowledge was lost.

- **Discontinuing use of the MT&R model.** As discussed in Section 2.3.2.1, the majority of participants were not continuing to update their MT&R model one year after CORE. Although the primary reasons for this were lack of time and motivation and lack of (or loss of) knowledge of how to use the MT&R, one key factor was a participant's inability to update the MT&R baseline. Many of the Cohort 1 companies reported frequent process and equipment changes, and two participants that experienced such changes in the year after CORE were not able to update their MT&R baseline to respond. In fact, only one of the Cohort 1 participants suggested that they had the ability to update their baseline on their own, but they had not yet attempted to do so at the time of the interview. Another participant felt that their baseline needed to be updated but was planning to work with Triple Point to get their help in making changes to the model.

2.4 Cohort 2 Interviews (Year 1)

As with Cohort 1, the Navigant team collected background information on Cohort 2 participants through interviews and reviewing CORE materials. Some characteristics of Cohort 2 differed slightly from those of Cohort 1, while others were similar. Key Cohort 2 characteristics included the following:

- **Number of facilities:** The majority of the businesses in Cohort 2 operate more than five facilities or buildings, but one is a holding company operating 75 facilities throughout the United States.
- **Location:** Six of the Cohort 2 participants reported that their facilities are located in multiple states—some internationally.
- **Company ownership:** Unlike in Cohort 1 where the majority of companies are subsidiaries of larger conglomerates, all but two of the companies in Cohort 2 are privately owned.
- **Facility ownership:** The majority of Cohort 2 companies own the facility at which they implemented CORE.

The Cohort 2 facilities in which CORE was implemented used a wide range of energy: less than 300,000 kWh at the low end to more than 7 million kWh of electricity at the high end and between 23,000 and 244,000 therms annually (based on the most recent year for which Navigant received data). Collectively, the Cohort 2 firms saved 2.8 million kWh of electricity and 32,000 therms as a result of their participation in CORE—seven percent of their electricity and three percent of their gas, on average. (Note that these are *ex ante* savings figures as predicted in the MT&Rs and Navigant has not verified the Cohort 2 savings.)

2.4.1 Recruitment of Participants

Similar to Cohort 1, most of the participants in Cohort 2 were recruited for CORE through existing relationships. Half of the participants in Cohort 2 had worked with Energy Trust on previous projects—most commonly capital projects. One participant learned about the program through one of their consultants that was specifying a piece of equipment for them, while another was looking for a tool like the MT&R model and learned about CORE through Nexant, their PDC at the time. Two others were also introduced to SEM or CORE through their PDC, Portland General Electric.

2.4.2 Participant Expectations

As was the case with Cohort 1, most of the Cohort 2 participants—nine of the 12—listed energy savings as a primary goal of their participation in CORE. Five of these set a specific numerical energy savings

goal when they first began CORE. For these respondents, cost savings went hand in hand with energy savings. One participant mentioned that their primary goal was to use the tools, such as the cumulative sum of savings chart, to share with their management how they were improving and the differences they were making. Another also referred to the tools, noting that they expected CORE to help them identify drivers of energy use so they could predict which projects would have the largest yield.

2.4.3 Participant Engagement

Some of the interviewees were able to engage their organizations in CORE activities, while others found broad engagement more difficult. Several of those who were successful at engagement were able to tie the CORE activities to concrete energy and cost savings: one said that they were able to save 30,000 kWh per month, while another found large benefits from a compressed air audit. Challenges to CORE engagement noted by interviewees included competition with production goals, difficulty changing established practices, up-front cash outlays for equipment changes, and lack of time. Several interviewees identified specific changes they had put in place to maintain engagement. These included the following:

- Establishing an energy policy, energy management plan, or energy savings goals
- Setting up and sustaining an energy team
- Initiating semi-annual employee awareness meetings
- Training team members (e.g., the plant manager) in SEM
- Profit sharing to pass energy bill savings on to employees

The overwhelming majority of the participants believed they would be able to maintain their energy savings past CORE and that they would be able to identify additional opportunities for saving energy. One reported that they were expanding their SEM practices to another location, while five others said that they were either planning to expand SEM or share their experiences with other locations or with company management.

2.4.4 SEM Activities

In interviews, participants commented on the activities that they conducted during CORE. These activities included the following:

- Developing an MT&R model and tracking energy use
- Filling out an opportunity register
- Holding energy team meetings
- Conducting employee engagement activities
- Developing an energy policy, energy management plan, and/or numeric energy goals

The following sections discuss each of these activities in detail.

2.4.4.1 MT&R Model and Tracking Energy Use

Of the 12 participants in Cohort 2, 10 reported that they did some form of tracking of their energy use before their participation in CORE; however, for the majority of them, this consisted solely of monitoring their utility bills. A couple of the respondents used utility bill data for project planning or forecasting. One participant obtained energy data through an e-profiler and used the data for project planning, while

another read their meter data and used it for forecasting for their operational budgets. Only one participant reported that they tracked interval meter data and normalized it—this same participant said that one specific goal of their participation in CORE was to learn what their energy drivers were and what types of projects would have the biggest yield. Every participant reported tracking their production (although most said that they did not link this to energy use) and 10 of the 12 reported tracking their costs.

All but one of the Cohort 2 participants successfully learned to use their MT&R model during their participation in CORE. Of these 11 participants, eight reported that they were still updating their MT&R models by the end of CORE. Several respondents identified issues that either prevented them from updating the MT&R model or made it difficult for them to do so. These included:

- **Personnel turnover.** For one company, the person in charge of inputting data to the MT&R left the company, and the company had not yet been able to recruit a replacement.
- **Changes to the facility.** One company had experienced a major change in production since the beginning of CORE and felt that the model no longer represented their energy use. They found it difficult to update the model to reflect the change.
- **Interaction with the utility.** One company reported difficulty getting interval data for their smart meters from their electric utility, so they could not input electricity data into their model on a regular basis.

The company that did not successfully develop their MT&R model could not find a statistical correlation between their energy use and any other production variables. In addition, the facility had another tenant using one of their electric meters, so they did not have confidence in their electricity use measurements. At least three participants felt that understanding and using the MT&R model would have been much more difficult in the absence of a staff member with Excel skills.

As with Cohort 1, the majority of the respondents in Cohort 2 reported that the MT&R model was useful to them. Ways in which the Cohort 2 firms used the output from the MT&R included the following:

- Identifying energy trends at their facility
- Determining the impact of facility adjustments
- Directing future energy projects
- Informing employees of the energy savings

All of the participants that successfully developed their MT&R model predicted that they would continue to use it after CORE—even the participants that were not actively updating their MT&R at the end of CORE. One of the participants was considering switching to another type of software that they would have to pay for but that they believed was more sophisticated. Most of the participants were not experiencing changes in their production process and equipment, but of those that were, a few believed that they would have to change their baseline. One of them was concerned that they did not understand the model well enough to be able to change the baseline accordingly but said that Triple Point had agreed to help them update the model, if needed.

Several participants identified factors that kept the MT&R model from being more useful to them or easier to understand. Some of these were outside of the program's control. For instance, one facility has multiple meters per building and could not determine which meter was connected to certain equipment,

making it difficult to track energy savings for specific pieces of equipment. Another facility has many production variables, making is difficult to identify the driver of usage. However, other respondents commented on the complexity of the model itself. One participant mentioned that the spreadsheet was difficult to open and ran slowly on their computer because of the amount of data. This participant understood that the historical data were necessary to generate the baselines but questioned whether all of the data needed to be displayed going forward. Two others commented on changing baselines and noted that they relied on Triple Point to update their model with new baseline information.

2.4.4.2 Opportunity Register

Almost all of the Cohort 2 participants had positive feedback on the opportunity register, finding it a useful tool. Several felt that the Quick Strike Assessment (also referred to as the walk-through or energy scan), where participants toured the facility with implementers to identify energy-saving opportunities for the opportunity register, was a productive exercise. The one participant that did not find the opportunity register useful said that it was a low priority from the company's perspective, as they were preparing for an audit from the International Organization for Standardization (ISO) at the time. This participant did not record any *ex ante* CORE savings, although they completed capital projects during the measurement period.

While most of the participants were already aware of at least some of the items in their opportunity register, the majority said that they identified at least half of their items in their opportunity register through CORE. One participant said that all of the ideas in their opportunity register were their own and that they had identified them before CORE; they had previously lacked motivation to complete them, however. CORE helped them to quantify the financial benefit to demonstrate to their management that the projects were viable. At least four of the interviewees were still using their opportunity register at the time of the interview, while two others planned to assess their facility again to refresh their opportunity register after some time had passed.

2.4.4.3 Energy Team

Based on data from baseline surveys, none of the Cohort 2 participants had a formal energy team before beginning CORE, although one said they had a green team and another said that someone in maintenance worked on projects. All of the Cohort 2 participants developed an energy team during the CORE process. Interviews at the end of the year, however, revealed changes in the energy team members over time. Table 2-5 shows how the number of people in each Cohort 2 participant's energy team changed over time.

Table 2-5 Cohort 2 Energy Team Participation Over Time

Participant ID	Number of Energy Team Members...	
	During CORE	By the end of Year 1
PE6598	3	1
PE6600	3	2
PE6601	6 to 8	4 to 5
PE6602	4	6
PE6603	3	More than 3 (did not specify number)
PE6604	3	2
PE6605	4	4 (replaced one member)
PE6606	4	1
PE6607	3	1
PE6608	4	1
PE6610	3	5 (two who attend meetings)
PE6611	3	2

All Cohort 2 participants experienced turnover among their energy teams. As with Cohort 1, energy teams tended to decrease in size—Table 2-5 indicates that this was the case for eight of the 12 participants. Three participants, on the other hand, increased their energy teams, and one was able to replenish members so that they had the same number of people on their energy team as they did at the beginning of CORE. In several cases, CORE participants expanded their teams beyond the originally defined roles. Two interviewees reported that they had added production employees or production supervisors to their teams. Another company created energy team roles in different divisions: lighting, HVAC, and/or mechanical. A team member at one company who was the maintenance supervisor encouraged his three subordinates in maintenance to be on the energy team.

For the first time this year, Navigant asked energy team members to comment on what percent of their job was devoted to the CORE activities and whether energy management was in their job description. The purpose of these interview questions was to gauge the corporate-level amount of support for SEM. The project team found that energy team members in five of the firms reported that energy management was part of their job description. Furthermore, the presence or absence of SEM in energy team members' job descriptions correlated with the time team members spent on SEM. Every company that had SEM in a team member's job description had at least one person who spent at least 10 percent of their time on SEM—one interviewee reported spending 50 percent of his time on SEM. All but one of the companies that did not have SEM in a team member's job description did not have any team members who spent more than five percent of their time on SEM. There was only one interviewee without SEM in his job description who reported that he spent a significant percent of his time on SEM (30 percent).

Participants also commented on the mix of people on their energy team, both in terms of departments represented and skills and knowledge that the team members collectively had. Six of the 12 participants felt that, among their team members, they had the right mix of people to effectively undertake all of the

CORE activities, while several others were seeking additional team members. One found recruiting difficult, while another specifically mentioned that employees were constrained by lack of time and availability. Two interviewees were trying to fill specific roles—one wanted to add someone with more technical expertise and was in the process of recruiting a plant manager; another wanted to engage more of the management team.

Several interviewees mentioned certain skills or roles that they felt were important to include on teams:

- Four interviewees mentioned that it was important to include team members with knowledge and understanding of the facility as well as mechanical and engineering skills; one of these interviewees added that their background in facilities engineering gave them credibility in the eyes of upper management.
- Two interviewees mentioned that team members with an electrical background or who were licensed electricians were valuable assets.
- Three said that it was critical to their success in CORE that someone on the team had the technical and Excel skills to be able to use the MT&R model.

Besides specific skills, three interviewees mentioned the diversity of skills and backgrounds on their team as an asset. Even teams without such diversity found it useful to gather a variety of perspectives: another interviewee, who was the only member of the energy team and had a background in food science, was able to teach himself the necessary skills by collaborating with resources throughout the company.

2.4.4.4 Employee Engagement

Navigant asked interviewees about the level of engagement with SEM and CORE reported by participants among their firms' management, maintenance personnel, and production employees. Firms tended to be most successful engaging their maintenance personnel, followed by management; many interviewees reported difficulty in engaging production employees.

Maintenance personnel were most likely to be involved in CORE activities on a day-to-day basis, as they were involved in implementing many of the changes. Also, most participants' energy teams included at least one person from the firm's maintenance department. Two energy teams included maintenance managers with the authority to assign other members of the company's maintenance team to carry out CORE activities.

As with Cohort 1, interviewees in Cohort 2 had mixed success engaging their management. Most participants reported that their management was not highly engaged with CORE activities but were generally supportive, particularly if they could see the financial benefit. Some interviewees observed that lower management engagement gave them more autonomy to make decisions as long as the outcome ended up saving the company money. Two other firms, however, wished their management had been more engaged. One said their management tended to give precedence to competing projects, while another said their management wanted to delay spending money as much as possible. Two of the participants successfully engaged their management by including someone from management on the energy team. Two others had someone on the energy team engaging directly with management—in one case, this person was officially in the executive sponsor (liaison to the executive team) role.

Of all employee groups, production employees were the most difficult for Cohort 2 participants to engage—six of the participants reported low engagement among production employees. One interviewee noted that the plant manager influenced the low level of engagement: the plant manager did not want employees to spend too much time on SEM because he wanted them to focus on production. Another acknowledged that many of their initiatives did not require input from production employees. Many of the more successful Cohort 2 participants were able to engage production employees in specific tasks such as turning off equipment and tagging air leaks. At least three interviewees reported that they bring up energy issues during employee meetings to educate employees, while two reported that they put up posters and signs with instructions to save energy. One participant came up with a creative way to engage employees: they held a contest for the best energy-saving idea with the prize of a light bulb and a gift card to the winner. For two companies, production employees were not just engaged but proactive in helping with CORE activities. For example, one company's night crew placed temperature sensors and monitored temperature rise.

2.4.4.5 Energy Policies and Goals

Participation in CORE influenced Cohort 2 customers to develop an energy policy and/or a numeric energy reduction goal. Before beginning CORE, only one participant had a formal energy policy that included a numeric goal. A second participant did not have a formal policy or plan but did have a numeric energy reduction goal. Table 2-6 summarizes whether each participant developed a policy or numeric goal during CORE.

Table 2-6 Cohort 2's Energy Policies and Goals

Participant ID	Energy Policy	Numeric Energy Reduction Goal
PE6598	Yes	5%
PE6600	No	2%-3%
PE6601	Yes	5%
PE6602	Yes	10%
PE6603	Yes	Yes, but did not specify
PE6604	Did not say	5%-7%
PE6605	Yes	5%
PE6606	Yes	3%
PE6607	No	Yes, but not a specific number
PE6608	No	Yes, but not a specific number
PE6610	Yes	2%
PE6611	No	5%

Not all of the exercises were effective at changing participant practices. Of the participants that reported creating an energy policy as part of CORE, many were not continuing to follow it at the end of the participation year. One interviewee said that their policy did not affect day-to-day operations, while

another said that they developed a policy for the workbook but did not put it into practice in their organization. One interviewee did not remember what the energy policy was.

All of the participants had some kind of energy savings goal, but most did not specify to what degree having a goal influenced their energy use. There was one instance in which the goal had an indirect effect: a participant was skeptical about their ability to reach their goal, but they ultimately realized that the small changes they made added up to big savings.

2.4.5 O&M Measures

Of the 12 participants, all but one implemented O&M measures during CORE. Common O&M measures included turning off lights and equipment, adjusting set points, and fixing compressed air leaks. Other unique or more intensive measures included changing the facility layout to streamline production, committing to reduce electricity use during demand response events, and installing timers or occupancy sensors on equipment. Table 02-7 summarizes the energy savings and O&M measures implemented during the CORE engagement for each participant. The measure descriptions have been edited and consolidated for space considerations and to protect the identity of the participants. Sites with "N/A" for gas savings were not able to pursue gas measures through the program because they were not on a qualifying rate schedule.

Table 02-7. Cohort 2 *Ex Ante* Savings and O&M Measures

Participant ID	*Ex Ante* Savings (kWh)	Electricity Savings %	*Ex Ante* Savings (Therms)	Gas Savings %	O&M Measures Implemented During CORE
PE6606	21,543	8%	N/A	N/A	Turned off lights on evenings and weekends
PE6600	329,227	5%	3,164	7%	Employee engagement: turned off monitors and lights when not in use Made thermostats adjustments Consolidated equipment use Compressed air: fixed leaks/adjusted settings
PE6611	323,500	10%	-	0%	Installed timers on equipment Reduced lighting levels Responded to DR events
PE6603	427,519	13%	N/A	N/A	Compressed air: fixed leaks/adjusted settings Replaced equipment Installed thermostat Changed facility layout to streamline production process
PE6608	654,177	11%	-	0%	Compressed air: fixed leaks/adjusted settings
PE6604	-	0%	N/A	N/A	None

PE6601	211,232	8%	N/A	N/A	New practices: to close doors, turn off lights and equipment when not needed, to run production in batches Fixed economizers on roof HVAC units Employee engagement: signage to turn off lights Installed occupancy sensors Door latches and seals fixed to close completely Ventilation adjustments Installed fan sensors to run only at high temperatures & adjusted air exchange settings Adjusted refrigeration set points Dock door plates insulated and maintenance completed to reduce day light
PE6607	-	0%	-	0%	Compressed air: fixed leaks
PE6605	177,435	7%	-	0%	Made thermostats adjustments Repaired furnace
PE6602	189,484	12%	N/A	N/A	Compressed air: leak detection program/adjusted settings SOP to eliminate equipment idling and reduce operating hours
PE6610	286,908	7%	-	0%	Compressed air: fixed leaks/adjusted settings/repair Adjust thermostat set points Added HVAC timers Fixed equipment air leaks Equipment and computer shut down
PE6598	163,893	9%	28,789	16%	Created log to ensure that equipment is cleaned and shut down at night

Some interviewees reported challenges in implementing O&M measures. Two participants said that maintenance employees prioritized production needs over O&M fixes. Others cited general resistance to change: for example, one participant's employees protested a thermostat adjustment. Another tried to add energy topics to monthly employee meetings but said employees soon forgot the information. Some participants were able to facilitate culture change using evidence from MT&R models—e.g., one interviewee used the MT&R to show savings from air leak fixes to their management and justify the purchase of an expensive ultrasonic leak detector.

2.4.6 Capital Projects

Although capital projects did not factor into CORE energy savings, Cohort 2 participants still considered them to be important in reducing energy use. Seven of the 12 participants implemented capital projects during the CORE implementation period, with some achieving significant energy savings—one participant reported that an HVAC upgrade resulted in $60,000 per year in energy savings, while another implemented a water reclamation system that saved 50 percent of their water bill. Nine of the participants identified additional capital projects while they were developing their opportunity register, but some of those acknowledged that the projects would likely not proceed due to cost or lack of time. Others were undecided or anticipated that they would implement the projects later.

The majority of participants (seven of 12) said that their participation in CORE positively affected their capital investment decisions or would affect them going forward. Primarily, interviewees said that the

CORE tools helped them influence upper management to approve projects by showing them the return on their investment.

2.4.7 CORE Structure and Process Feedback

2.4.7.1 Group Workshops

All of the 12 participants in Cohort 2 were satisfied with the group workshops. Of the interviewees, 10 specifically mentioned interactions and networking among the participants in the Cohort, and one also mentioned interactions with past participants as being a positive aspect. One participant noticed that "when everyone is saying the same thing about something, there's something to it," and cited LED bulbs as an example of such a technology. Others appreciated the diversity of the participants, with one saying that hearing stories from different industries helped him "think outside the box." Several said that they would like to see additional opportunities to get together—for instance, a quarterly or biannual reunion to touch base. Two interviewees felt that Energy Trust overemphasized confidentiality and this may have prevented participants from sharing more information. There were few critical comments, but critical comments included the following: that there were a few exercises that were not as worthwhile, surprise that companies that were so different were put in the same Cohort, and two comments about the timing and frequency—there was a long stretch of time between two of the meetings.

2.4.7.2 Onsite Workshops

Likewise, participants in Cohort 2 had positive feedback about the onsite workshops. Interviewees praised the way Triple Point, who ran the workshops, trained participants in using the model and data logging equipment and walked through the facility to look for opportunities. Two participants mentioned that Triple Point would bring different experts to the onsite workshops as needed. The main suggestion for improvement involved having more or longer onsite workshops. One interviewee even suggested that there should be 10 meetings, each held at a different participant's facility, to be able to brainstorm about common issues.

2.4.7.3 Program Incentives

Companies received two types of incentives for participating in CORE: milestone incentives for completing certain activities and an energy savings incentive proportional to the amount of energy they saved through CORE. Participants generally found the milestone incentives to be a motivating factor in completing the requisite activities. For many of the participants, the amount of the milestone incentives was not significant compared to other factors, such as the monthly electricity bill savings. However, most participants did find them motivating, particularly in completing the activities on time. Two of the interviewees said that the milestone incentives were an important factor in influencing their managers to approve participation and justifying their work on the project. One said that the financial incentives were key to their participation, and they might not have participated in the program in the absence of the incentives.

Participants were much more mixed on the energy savings incentives. Some participants did not find the energy savings incentive to be a motivator just because they did not achieve energy savings that qualified for the incentive. Another also mentioned that incentives for capital projects were $0.05 to $0.07 per kWh—much larger than the $0.02 per kWh energy savings incentive through CORE—which made it

very difficult to justify participating in CORE instead of taking on capital projects, when they did not have the bandwidth in their company to do both. Two participants changed their views of the energy savings incentive over the course of the project but in different directions. One said that they almost dropped out because they could not implement as many initiatives as they identified, but Triple Point encouraged them to stay in the program and the incentives ended up being bigger than they expected. Another said that the energy savings incentive was an important motivator at the beginning, but then as they tracked their energy they realized the real money was in the energy savings themselves. Two others cited reactions that were similar to the milestone incentives: one used it to sell the program to their management, and the other wanted results that would draw attention to their work within the company.

Many of the participants noted that the long-term energy cost savings from the project would outweigh the incentives they received. However, a few said that even though that was the case, the milestones were a driver. One said that the milestones were more immediately motivating and kept them moving forward. Another said that being close to a milestone helped one participant get the work done. Another said that the milestones were important to get others in their company on board. One of the participants said that the energy savings themselves would not have provided sufficient ROI, but when they added the money from the milestones, it was viable.

2.4.7.4 Technical Service Provider

Similar to Cohort 1, the participants in Cohort 2 had universally positive feedback about Triple Point. Specific feedback included the following:

- "Experienced" and "knew what they were talking about"
- "Carried me through this…to keep us engaged"
- "Keeping the line of communication open and making sure the program runs as needed"
- "Approachable, easy to work with, and helpful"
- "Incredibly smart"…"energy nerds"

Interviewees described occasions when Triple Point went above and beyond their expectations. One said that Triple Point representatives came out to speak at the participant's Earth Day event. Several mentioned that they had challenges with their model, but Triple Point's support helped them meet their deadlines.

2.4.8 Customer Recommendations for Maintaining Engagement

Navigant asked Cohort 2 interviewees what Energy Trust could do to help them sustain their energy management practices and continue to identify and implement changes to save energy. The majority of the customers wanted Energy Trust to stay engaged with them, whether through a continuation of CORE or through other programs. Some specifically recommended that Energy Trust follow-up on the CORE initiatives after some period of time, with two suggesting reunions of participants after six months to one year. One specifically requested Energy Trust to help them update their model. Another mentioned that there was "no handoff or exit strategy" and that they would need Energy Trust to help manage future efforts.

Other interviewees mentioned that they intend to participate in future Energy Trust programs. Two interviewees had participated in incentive programs for capital projects and recommended that Energy

Trust continue to offer such programs to keep their customers involved in energy-saving practices. One said that they had been invited to an energy efficiency summit and said that Energy Trust was doing well with their continuing education efforts. Yet another recommended that Energy Trust maintain engagement by keeping participants informed of incentives, programs, and resources through Energy Trust.

PDCs are another avenue for maintaining customer engagement. One participant said that they were willing to work with their PDC, but Energy Trust had reorganized the service territories and as a result had assigned the customer a new PDC. The customer was not as satisfied with the new PDC, which was impacting their ability to get projects done.

Finally, one participant acknowledged that part of the difficulty with maintaining engagement was internal. Circumstances changed and they lost their management commitment, but they were not sure that Energy Trust could have done anything more to change the outcome.

3. Impact Evaluation

The Navigant team performed an impact evaluation of the Cohort 1 participants to verify the *ex ante* energy savings predicted by the Cohort 1 MT&Rs. The Cohort 1 evaluation included a site visit; obtaining production, weather, and energy data for the site; a review of the MT&R; and a calculation of savings since implementation of the program. However, not all of these activities were performed at each site – see Table 1-2. The overall approach to the Cohort 1 evaluation can be found in Section 1.4.

Navigant also conducted a review of the MT&Rs for Cohort 2 participants. The overall approach to the Cohort 2 evaluation can be found in Section 1.4.

The following sections present the findings from the Cohort 1 and Cohort 2 impact evaluation activities.

3.1 Cohort 1 Impact Evaluation

3.1.1 Summary of Cohort 1 Impact Evaluation Results

The verified Cohort 1 electric savings were 1,776,366 kWh and 1,433,995 kWh for years 1 and 2, respectively. This translates to electric realization rates of 91 percent for Year 1 and 74 percent for Year 2. These findings and the individual site results are summarized in Table 3-1.

Table 3-1 Summary of Cohort 1 Electric Impact Evaluation Results

Participant ID	*Ex Ante* Year 1 kWh	% of facility usage (*Ex Ante*)	*Ex Post* Year 1 kWh	*Ex Post* Year 2 kWh	Year 1 Realization Rate	Year 2 Realization Rate
PE5398	261,223	5%	487,148	256,643	186%	98%
PE5399	125,209	5%	86,940	326,172	69%	261%
PE5402	72,148	5%	Unavailable	Unavailable	Unavailable	Unavailable
PE5405	426,689	6%	343,379	441,552	80%	103%
PE5407	52,682	7%	87,368	70,581	166%	134%
PE5409-a	218,327	9%	275,729	7,591	126%	3%
PE5409-b	24,969	8%	38,882	70,581	156%	283%
PE5411	837,115	16%	456,920	260,875	55%	31%
Total	1,946,214*		1,776,366	1,433,995	91%	74%

The total does not include ex ante savings from site PE5402, as ex post savings were unavailable for this site.

Table 3-2 summarizes the gas impact evaluation results. The overall gas savings were slightly negative, but this is treated as a zero percent realization rate, as the uncertainty is high for low savings values as a percent of total site usage.

Table 3-2 Summary of Cohort 1 Gas Impact Evaluation Results

Participant ID	*Ex Ante* Year 1 therms	% of facility usage (*Ex Ante*)	*Ex Post* Year 1 therms	*Ex Post* Year 2 therms	Realization Rate
PE5399	2,324	3%	-3,573	-564	0%
PE5402	2,419	6%	Unavailable	Unavailable	Unavailable
PE5405	8,534	15%	-337	-138	0%
Total	13,277		-3,910	-702	0%

3.1.1.1 Measure Verification

During the site visits, Navigant verified the installation of the implemented O&M measures. The most common measures were compressed air leak detection, thermostat adjustments, equipment shutoffs, HVAC cleaning and maintenance, employee training, and implementing standard operating procedures. Table 3-3 groups the various O&M measure opportunities into categories and indicates the number of sites that identified measures within that category. Some measures did not fit will into these standard categories, such as reducing rework or roof repair, and were captured in the "Other" category. The table shows that most of the O&M measure opportunities identified at each site have been implemented already (and verified by Navigant).   The remaining opportunities are still being pursued by the sites.

Table 3-3 O&M Measure Summary (Number of Sites)

Category	Implemented and Verified	Planned or In Progress	Total Identified
Compressed Air Leak Detection	6	1	7
Thermostat Adjustments	3	2	5
Equipment Shutoffs	6	-	6
HVAC Maintenance	1	1	2
Employee Training	4	2	6
Standard Operating Procedures	-	2	2
Other	3	-	3

Navigant also verified the installation of capital measures installed during the baseline or measurement periods. Capital measures are incentivized and savings claimed through the broader PE program, but it is important that their energy savings must be subtracted out of the MT&R model to accurately estimate the O&M savings attributable to CORE. If the actual energy savings from a capital project is greater than the *ex ante* value, then the savings from the O&M measures will be overestimated. Conversely, if the actual energy savings from a capital project is less than the *ex ante* value, then the savings from the O&M measures will be underestimated. Five Cohort 1 participants installed a total of 10 capital measures (see Table 1-2). Navigant conducted a visual inspection of the capital equipment, including nameplate and operational data, and obtaining set points and operational times. Using this information, Navigant determined if the capital measures were still operating as originally installed and if the *ex ante* savings claimed for them could be accepted for the analysis of CORE program savings. Navigant found that the capital equipment was installed and operating according to the assumptions in the *ex ante* calculations and, therefore, the *ex ante* savings estimates were used to estimate the CORE savings.

3.1.2 Savings Analysis

To verify the energy savings at each site, Navigant validated the existing MT&R models and updated them with current input data. Navigant requested the project report, *ex ante* calculations, billing data, and capital project details for the facility from Energy Trust. Navigant also collected the most recent data that related to the variables in the model for the sites. These variables included production and weather data. Production data were provided by the site, but weather data were generally obtained from local weather stations.

When necessary, data were adjusted to align time periods between billing, production, and weather data. Site visits were also performed to confirm major projects were completed and to collect any trend data that related to the variables in the model.

Navigant used the baseline data to validate the MT&R model created by the implementer. In order to do this, Navigant recreated a model with the additional data and compared it to the original model to ensure that the implementer used the same data that was provided to Navigant. Once the model was

confirmed, Navigant calculated the savings for this model with the expanded post data collected from the site. This was done as follows:

- The baseline model was used with the updated data to create the baseline energy usage for each post-CORE month.
- The model results were compared to the billing data for each month, and the difference was considered to be the savings associated with the SEM program.
- Capital project savings were pro-rated based on their installation date, and the savings were subtracted from the final annual results of the SEM activities.
- If a variable to the MT&R changed substantially from the baseline year to the post-production period (more than 10 percent on an annual basis), Navigant recreated the baseline model choosing the baseline period that most closely matched the efficient production conditions.

Navigant reviewed major differences in *ex ante* and *ex post* savings. The following sections summarize the main findings; detailed site reports are provided in Appendix B.

3.1.3 Model Results

Navigant found that the model methodology was reasonable and accurately reflected savings at the sites with a few exceptions, which are detailed below:

- Energy Trust calculates annual savings based on the last three months of the implementation period. The drawback to this approach is that it does not reflect the seasonal effects that a full-year model would account for. This was most notable for PE5411, which had seasonally dependent production. The three months that were included in the measurement period had the highest production, highest outdoor air temperatures, and highest savings. Navigant found much lower savings than were originally claimed using the implementer's model with a full year of weather, production, or other data required by the model.
- PE5398 had much higher production in the Year 2 post-implementation period than in the baseline period. Of the weeks in Year 2 post, 32 showed production that was over 110 percent of the maximum value in the baseline. This invalidated the model for Year 2 because the baseline is outside the statistical significance of the model. This is discussed in more detail in the site report in Appendix B.

Table 3-4 summarizes the electric savings for the sites. The verified Cohort 1 electric savings are 1,776,366 kWh and 1,433,995 kWh for years 1 and 2 respectively. This translates to electric realization rates of 91 percent for Year 1 and 74 percent for Year 2.

Table 3-4 Summary of Cohort 1 Electric Impact Evaluation Results

Participant ID	Ex Ante Year 1 kWh	% of facility usage (Ex Ante)	Ex Post Year 1 kWh	Ex Post Year 2 kWh	Year 1 Realization Rate	Year 2 Realization Rate
PE5398	261,223	5%	487,148	256,643	186%	98%
PE5399	125,209	5%	86,940	326,172	69%	261%
PE5402	72,148	5%	Unavailable	Unavailable	Unavailable	Unavailable
PE5405	426,689	6%	343,379	441,552	80%	103%
PE5407	52,682	7%	87,368	70,581	166%	134%
PE5409-a	218,327	9%	275,729	7,591	126%	3%
PE5409-b	24,969	8%	38,882	70,581	156%	283%
PE5411	837,115	16%	456,920	260,875	55%	31%
Total	1,946,214*		1,776,366	1,433,995	91%	74%

The total does not include ex ante savings from site PE5402, as ex post savings were unavailable for this site.

These savings were determined using the MT&R models, which generally remained valid for these sites. However, PE5398 experienced a substantial increase in production, which is expected to render this model in question. In addition, PE5407 installed a completely new production line, which also calls the model into doubt. In order to verify these models' validity, Navigant performed several comparisons of savings using basic KPIs (in this case, production levels) and adjusted baselines. Navigant ultimately determined that the MT&R models were the best available option for verifying the savings.

Energy Trust assumes a three-year measure life for their SEM programs. This assumes that the savings from the O&M measures will continue for an average of three years; some for less time and others for longer. The year 2 realization rate of 74 percent is consistent with Energy Trust's three-year average measure life; while savings for some sites have fallen off after two years, others will persist beyond three years.

Table 3-2 summarizes the gas impact evaluation results. The overall gas savings were slightly negative, but this is treated as a zero percent realization rate, as the uncertainty is high for low savings values as a percent of total site usage.

Table 3-5 Summary of Cohort 1 Gas Impact Evaluation Results

Participant ID	Ex Ante Year 1 therms	% of facility usage (Ex Ante)	Ex Post Year 1 therms	Ex Post Year 2 therms	Realization Rate
PE5399	2,324	3%	-3,573	-564	0%
PE5402	2,419	6%	Unavailable	Unavailable	Unavailable
PE5405	8,534	15%	-337	-138	0%
Total	13,277		-3,910	-702	0%

3.2 Cohort 2 MT&R Review

Navigant also reviewed the MT&Rs for Cohort 2. The goals of this review were to determine the state of the participants' energy tracking and reporting capabilities to understand the level of statistical rigor of the regression analysis and to identify methods to increase the MT&R's accuracy at predicting participant energy savings.

Table 3-6 Summary of Cohort 2 Savings

Participant ID	Ex Ante Savings kWh	Electricity Savings	Ex Ante Savings therms	Gas Savings	Analysis Approach
PE6598	163,893	10%	28,789	16%	MT&R
PE6600	329,227	6%	3,164	7%	MT&R
PE6601	211,232	9%	N/A	N/A	MT&R
PE6602	189,484	19%	N/A	N/A	MT&R
PE6603	427,519	16%	N/A	N/A	MT&R
PE6604	-	0%	N/A	N/A	MT&R
PE6605	177,435	7%	-	0%	MT&R
PE6606	21,543	8%	N/A	N/A	Bottom Up Analysis
PE6607	-	0%	N/A	N/A	MT&R
PE6608	654,177	11%	-	0%	MT&R
PE6610	286,908	7%	-	0%	MT&R
PE6611	323,500	10%	-	0%	MT&R

3.2.1.1 Electric Models

Cohort 2 had a total of 12 sites. Out of these 12 sites, 11 have implemented MT&R models for electricity. One site (PE6606) did not implement the MT&R model due to non-correlation of available independent variables (production, outside air temperature, etc.). For PE6606, a bottom-up approach was used to estimate energy savings.

- Navigant's team determined that the CORE MT&R models and reports have reasonable information about the energy consumption and independent variables affecting the energy consumption at the site. The reports and models contain enough information to reasonably use them for tracking energy consumption and savings.
- For the 11 sites where MT&R models were developed and implemented, the report clearly identifies the independent variables that need to be collected along with the energy consumption. These variables—such as production, outside air temperature, or heating degree days—when tracked regularly along with the interval or monthly data for energy consumption, will enable the sites to effectively track the energy savings realized from the CORE initiatives.
- Navigant believes that the assumptions and MT&R models used to track the energy consumption and savings are reasonable. A solid baseline of at least one year's worth of the

energy consumption data and independent variable data was established for all the MT&R models.

- For three sites, there were capital projects during the intervention period of the CORE projects. For these sites, capital savings were identified separately from the total savings calculated using the MT&R model. The resulting energy savings seem reasonable considering the CORE measures implemented at the sites.
- PE6606, a small packing facility for agricultural products, did not implement an MT&R model. There were many factors affecting the energy use of the site including seasonality of the product, energy consumption from the tenant facility that shares the same meter, market demand, etc. Triple Point attempted to include all of these variables in the MT&R model, but none was statistically significant. Thus, Triple Point used a bottom-up approach to calculate energy savings for the two measures implemented during the CORE intervention period. Navigant reviewed the measures and calculations and found them reasonable.
- PE6611 implemented an MT&R model but faced a decline in the supply of the raw product during the intervention period. This affected the operating conditions at the facility, and the model could not be used effectively to track the energy savings through the production variables, which were previously correlated with the electricity consumption of the facility. Thus, a bottom-up analysis was used to calculate the associated energy savings. Navigant reviewed the calculations and found them reasonable.

3.2.1.2 Natural Gas Models

Only six of the Cohort 2 sites developed a natural gas MT&R model. Three of these six sites did not implement any natural gas measures and, therefore, did not achieve any natural gas savings.

- Similar to the electric MT&Rs, Navigant's review team determined that the CORE reports and MT&R models have reasonable information about the energy consumption and independent variables affecting the energy consumption at the site. The reports contain enough information to reasonably use them for tracking energy consumption and savings. The report clearly identifies the independent variables that need to be collected along with the energy consumption.
- Navigant believes that the assumptions and MT&R models used to track the energy consumption and savings are reasonable. A solid baseline of at least one year's worth of the energy consumption data and independent variable data was established for both natural gas MT&R models.
- PE6605 implemented one natural gas measure that marginally adjusted thermostat set points throughout the facility, but due to unrelated problems with heating equipment, this resulted in zero natural gas savings.
- The remaining two sites (PE6598 and PE6600) that implemented natural gas measures achieved positive savings. On an average, these two sites have saved about 11.3 percent of their annual natural gas consumption. PE6598 implemented equipment shutdown procedure to ensure that the boiler at the site is running optimally. PE6600 implemented thermostat resets and thermostat setback, fixed broken HVAC units at the site and optimized natural gas ovens operation which resulted in the positive gas savings for the site.

4. Key Findings and Recommendations

4.1 Process Evaluation Findings

Navigant found that customers in both Cohorts experienced successes and challenges when implementing SEM principles through CORE. Participants learned SEM principles and understood where their energy savings were coming from through use of the tracking method learned in CORE. Participants also learned from their peers and shared information among themselves. Participants retained energy-saving O&M measures that they implemented during CORE. However, participants had difficulty continuing to follow the SEM practices that led to those savings after the end of the program intervention. These practices included tracking their energy, identifying new opportunities, maintaining an energy team, engaging employees, and generally prioritizing energy management. In summary, Navigant found that the CORE participation led to customers implementing savings that would themselves continue to persist, but customers would not be able to generate new savings because they did not retain the practices that led to those savings. Interviewees suggested that Energy Trust could help them maintain efficient practices later by continuing to offer assistance.

Our findings suggest that medium-sized industrial customers can adopt SEM practices as effectively as large customers. However, not all CORE participants were able to embed SEM practices in their corporate culture without continuing intervention from Energy Trust. More than one year after their CORE participation, fewer than half of Cohort 1 customers were continuing SEM practices: four were continuing to track their energy; only two had added new projects to their opportunity register, although three others had continued to implement projects already on their opportunity register; three continued to follow their energy policy; and four continued to set a numeric energy reduction goal (one had a non-numeric goal).

The CORE pilot successes and challenges are summarized in the following sections.

4.1.1 CORE Successes

- **Participants understood energy savings.** Almost all participants in both Cohorts used the MT&R during CORE to understand where their energy savings were coming from. Those that achieved savings understood that the magnitude of the savings was more significant than the incentives they received from Energy Trust. They also seemed to learn the value of the energy savings and how to communicate that value to others in their company.
- **Participants continued to follow operational and maintenance measures after the CORE intervention.** O&M measures really "stuck" even if no other SEM practices did. This was particularly the case for high-impact, low-cost measures such as finding and repairing air leaks, and turning equipment off or to standby mode when not in use. These measures were especially suitable for CORE because participants could use the MT&R model to calculate the impact of these measures and justify the culture change necessary to implement them on a long-term basis. Some participants in Cohort 1 whose entire energy team left still maintained O&M measures that were started during CORE—in one case without even knowing that it was started during CORE.

- **Participants learned from their peers.** Participants overwhelmingly said that interaction with other participants—sometimes across Cohorts—was a major plus for them on the project. They recommended that Energy Trust support more opportunities for interaction and noted that Energy Trust's strict confidentiality protocols sometimes hindered information-sharing. For most participants, it was important that production data remain confidential, but it was not necessary to keep contact information confidential.

4.1.2 CORE Challenges

- **Energy teams experienced significant staff turnover, which affected their companies' ability to prioritize energy management.** Almost all of the companies in both Cohorts experienced personnel turnover, and when someone on the energy team would leave the company, it was often difficult for the remaining members to recruit and assign someone new to the energy team role due to competing priorities. As a result, many participants had trouble maintaining a complete energy team. Some energy teams consisted of one or two committed individuals who were able to influence their company's success in energy management on their own, but on the other hand, the departure of these people would be especially likely to cause the company to discontinue SEM practices because there were no others with the same level of commitment and expertise. In a few cases, everyone on the energy team left and the energy team was not renewed.
- **Participants had difficulty continuing with some SEM activities, particularly energy tracking methods.** Although most of the participants successfully updated their MT&R models during and after CORE, almost none of the participants in either Cohort felt confident that they could update the model baseline in the case of future facility changes. Likewise, many of the participants seemed to rely heavily on Triple Point to help them maintain their models during CORE. This could indicate that customers are making it through the program, but many are not developing the ability to continue tracking and modeling their energy use on their own. Navigant observed this in the Cohort 1 interviews that took place one year after CORE, when many of the participants had stopped updating their MT&R model either because their baseline changed or because the person responsible for updating the model left and they did not pass on the knowledge.
- **Participants struggled to engage employees.** Many of the participants found it difficult to engage production employees. At a high level, production employees are the ones whose official role is most at odds with an energy savings role: their focus on meeting production goals often (but not always) competes for time and resources with saving energy. (In contrast, for maintenance employees, measures that improve energy efficiency often improve operational efficiency at the same time, and for management, energy efficiency improvements ultimately help the bottom line.) Companies most successful at engaging their production employees tended to do so by offering specific incentives to their production workers: several reported offering gift cards or other prizes for energy-saving ideas, while one participant in Cohort 1 tied employee bonuses directly to energy savings.

Other key findings include:

- Participants were motivated to participate in CORE by the opportunity to network with other participants, the data logger package, and the training in how to use the MT&R model.

- Participants were successfully recruited through PDCs, trade associations, and previous relationships with Energy Trust. Cold calling was not an effective recruiting method.
- Participants in both Cohorts reported mixed results in corporate- and employee-level engagement with SEM. Cohort 1 interviews revealed that engagement is likely to decrease over time in the absence of continuous intervention.
- Cohort 2 findings suggest that over the short term, companies continue to implement SEM practices and O&M measures.
- Eight of the 12 Cohort 2 participants were still updating their MT&R models by the end of CORE.
  - Four were still using their opportunity register after CORE, while two others planned to refresh their opportunity register after some time had passed.
  - Eight still had energy teams consisting of more than one member.
- Cohort 1 findings suggest that without intervention, SEM practices often do not persist, particularly if companies experience management and staff changes.

4.2 Impact Evaluation Findings

Navigant evaluated electric MT&R results for five of the companies in Cohort 1. Navigant verified a total of 1.8 million kWh in Year 1 and 1.4 million kWh in Year 2 for the Cohort 1 sites. This resulted in a realization rate of 91 percent in Year 1 and 74 percent in Year 2 across the evaluated sites. These findings indicate that the majority of the savings from CORE persisted over a 2-year period and that a three-year measure life is feasible.

Navigant found that the model methodology was generally reasonable and accurately reflected site savings. However, one site substantially increased its production in Year 2, which made the existing model invalid. This is consistent with some Cohort 1 interviewees' predictions that the models would stop working due to changing baselines. Navigant also found that the method of calculating annual savings based on the last three months of the implementation period did not work well for one participant who experienced seasonal effects. Navigant found lower savings when evaluating the model using a full year of data.

Navigant was not able to verify any gas savings for Cohort 1. Navigant was only able to obtain gas models for two sites, and both of those showed a small *negative* savings value (Navigant treated this as a zero percent realization rate due to the high level of uncertainty for low savings values as a percent of total site usage). Navigant could not determine whether customers did not achieve gas savings because customers lacked opportunities to save gas, customers did not take advantage of existing gas opportunities, or Triple Point did not sufficiently identify and analyze potential gas measures.

Navigant did not evaluate Cohort 2 savings during this analysis year. Nevertheless, Navigant conducted a review of final reports and MT&R models for Cohort 2 participants. Of the 12 sites, 11 completed an electricity MT&R, while six of the sites completed a natural gas MT&R. Navigant generally found that the models have enough information to use them for tracking energy consumption and savings, and that the assumptions and models used to track the energy consumption and savings were reasonable.

4.3 Recommendations

Based on the findings, the Navigant team recommends the following actions to improve future iterations of CORE:

- **Stick with a good thing.** Energy Trust should maintain the Cohort format of the training and workshops as these were successful at engaging participants in both Cohorts, and participants in both Cohorts found them useful. The program has struck a good balance between group workshops that facilitate experience sharing and networking and individual workshops that focus on site-specific activities.
- **Stay in touch.** Several participants in both Cohorts specifically asked for continuing engagement beyond CORE or said that they planned to reach out to Triple Point after CORE for help. This suggests that continuing assistance to participants even after the CORE year is necessary to help address some of the challenges faced by participants. Energy Trust should also consider providing assistance to customers to update their MT&R baselines as needed since modeling work of this complexity seems to be beyond the ability of most customers. Energy Trust is initiating a Continuous SEM effort to address these issues.
- **Continue to motivate participants.** Milestone incentives were an important factor in maintaining engagement, and Energy Trust should consider including this approach in future iterations of the program. Even though the energy savings outweighed the milestone incentives for most participants (and participants were fully aware of this), the milestones provided direct motivation for participants to perform certain tasks. For some, the appearance of receiving a check was an important factor in getting management and others in the company on board. From the perspective of management, milestone incentives may serve as a hedge against the inherent uncertainty in devoting time to SEM: companies can be confident that they will get some payoff from participating even if they do not ultimately achieve energy savings in the first year.
- **Take a flexible approach to energy use tracking.** Because of the difficulty of verifying energy savings for sites that save a very low percentage of energy, Energy Trust should consider a different method (other than MT&R) for such measures, such as a key performance indicator (KPI) or bottom-up analysis. If an MT&R model is used, the following parameters should be followed:
  - If only monthly data are available, the baseline period should be at least two years to ensure that savings based on it are reliable.
  - Energy savings should be analyzed over a full year or should be adjusted for seasonality when only a few months of data are available.
- **Exploit opportunities for gas efficiency**. Future program offerings should focus more on identifying opportunities for gas savings for participants who are non-transport gas users.

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Appendix A.   Interview Guides

A.1 Energy Trust Staff Interview Guide

<u>Background</u>

Navigant Consulting is evaluating the CORE Improvement (CORE) pilot for the Energy Trust of Oregon. The CORE pilot involves two cohorts—groups of about 10 highly motivated small- to medium-sized industrial sites. The program implementer, Triple Point Energy (Triple Point) trained participant management and staff on strategic energy management (SEM) practices and provided direct support to staff on energy management projects. Training and support was provided similar to the Resource Conservation Manager concept, but was shared across the cohort in this case. In addition to the support and training, CORE participants received incentives for completing certain milestones and for operations and maintenance (O&M) savings attributable to changes made through the CORE pilot. Annual savings and customer incentive amounts were based on the level of O&M savings achieved in the last three months of participation in the pilot. The first cohort attended nine workshops in 2012 and 2013 with a report out and celebration on October 29, 2013. The second cohort attended nine workshops in 2013 and 2014 with a report out and celebration on October 29, 2014.

This interview is being conducted with Energy Trust program management staff to gather feedback on the pilot.

<u>Introduction</u>

Hello, my name is [Name] and I work for Navigant Consulting. We are evaluating the CORE Improvement Pilot on behalf of Energy Trust of Oregon. Today we'll be talking about your views of the CORE Improvement pilot in its second year, with a focus on the experiences of Cohort 2 as well as any changes between cohort 1 and cohort 2. This interview should take about 60 to 90 minutes.

<u>Recent Pilot History</u>
1. [For each interviewee:] First, please tell me about your work with the CORE pilot this year.
    a. Did your role change from cohort 1 to cohort 2? If so, in what way?
    b. Did you have any new responsibilities associated with the pilot?
2. To what degree is the CORE pilot proceeding as originally planned?
3. Were there any major changes to CORE from cohort 1 to cohort 2?
4. How did the goals and objectives for CORE evolved from cohort 1 to cohort 2?

<u>Customer Recruiting and Experience</u>
5. How were the customers in cohort 2 targeted and recruited? Were there any new methods that stood out as particularly successful in recruiting customers?
6. Are some types of customers that are more likely to participate? What are the characteristics of these customers? Are these characteristics different from large IEI participants and if so, how?
7. What elements of CORE do you think appealed to the cohort 2 participants the most? Did any elements discourage customers from participating?
8. Given the experiences with cohorts 1 and 2, how might recruitment be scaled up to implement CORE with a broader population of customers?

Customer Participation and Engagement

9. How would you characterize the overall success of the participants in implementing the CORE principles? [cohort 2]
10. Were there any major differences in how successful participants were with CORE between cohort 1 and cohort 2?
11. Were there any major differences in how engaged participants were in learning about and implementing SEM between cohort 1 and cohort 2?
12. Among the customers in cohort 2, what was the level of organizational commitment to SEM principles?
13. What was the level of engagement among the customers in cohort 2 in identifying and implementing O&M projects? Capital projects? Has participation in the CORE Pilot led to more capital projects so far?
14. How effective were the milestone incentives and energy savings incentives in encouraging customers in cohort 2 to complete CORE-related activities?

Program Delivery Contractors (PDCs)

15. How has the handoff of capital projects from Triple Point to the PDCs been working?
16. In what other ways did the PDCs engage in the process for cohort 2?
17. What were the benefits of having the PDCs involved? What were the drawbacks?
18. Should the PDCs be involved in future CORE-related offerings? If so, how could the interactions be improved?

Contract with ITSP

19. How has Triple Point's implementation of the pilot evolved from cohort 1 to cohort 2? What feedback would you give them on their work over the past year?
20. How effective has Triple Point's mentoring and support been to cohort 2 customers' successful implementation of CORE activities? What kinds of guidance stand out as being particularly effective?
21. Do you feel that Triple Point has been able to accurately estimate annual SEM energy savings for cohort 2? What aspects were challenging?
22. In your view, has Triple Point used their resources (funding, time, etc.) efficiently this year? Do you think that they have been given enough resources to adequately guide the cohort 2 participants through the pilot? What additional resources might improve the initiative? Would you make any changes to their reimbursement structure for future efforts?
23. Have there been any issues in the past year between Triple Point and the PDCs or between Triple Point and Energy Trust?

CORE Initiative Success

24. How have goals and objectives evolved from cohort 1 to cohort 2? To what degree have the pilot goals been realized so far?
25. What metrics have you used to gauge the success of CORE, and has it been successful by those metrics?
26. Has CORE been a cost-effective source of savings based on the past two years of the pilot?

27. What other direct and indirect benefits have been realized by the pilot in the past year?

Expanding Energy Trust's SEM Offerings
28. Are the participants in cohort 2 representative of the broader population of small to medium size industrial customers? Can the CORE Pilot be replicated in the remaining population of industrial customers across the state, with the same level of effectiveness as cohorts 1 and 2?
29. What are your plans for SEM offerings to industrial customers in the near term and in the future? How have your experiences with the CORE pilot informed your strategy and plans for industrial SEM going forward? What have you specifically learned from cohort 1 and cohort 2?
30. Are there any outstanding issues with the design of the program? How do you plan to resolve them?
31. For the future CORE offering, do you plan to retain Triple Point's services? Will you plan to recruit other prospective ITSPs (implementers)? Are there any limitations to expanding or continuing the CORE Initiative in terms of Triple Point's or other ITSPs' resources?

Closing
32. Overall, how would you say the pilot went over the course of its two years?
33. What would you say its greatest strengths and successes were?
34. What areas were less successful or needed improvement?
35. What challenges do you anticipate in implementing a combined SEM offering for medium and large customers?   How will you address these challenges?
36. What are the key lessons learned from CORE that will improve your future offering(s)?

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A.2 Triple Point Staff Interview Guide

Background

Navigant Consulting is evaluating the CORE Improvement (CORE) pilot for the Energy Trust of Oregon. The CORE pilot involves two cohorts—groups of about 10 highly motivated small- to medium-sized industrial sites. The program implementer, Triple Point Energy (Triple Point) trained participant management and staff on strategic energy management (SEM) practices and provided direct support to staff on energy management projects. Training and support was provided similar to the Resource Conservation Manager concept, but was shared across the cohort in this case. In addition to the support and training, CORE participants received incentives for completing certain milestones and for operations and maintenance (O&M) savings attributable to changes made through the CORE pilot. Annual savings and customer incentive amounts were based on the level of O&M savings achieved in the last three months of participation in the pilot. The first cohort attended nine workshops in 2012 and 2013 with a report out and celebration on October 29, 2013. The second cohort attended nine workshops in 2013 and 2014 with a report out and celebration on October 29, 2014.

This interview is being conducted with the program implementer, Triple Point, to gather feedback on the pilot.

Introduction

Hello, my name is [Name] and I work for Navigant Consulting. We are evaluating the CORE Improvement Pilot on behalf of Energy Trust of Oregon. Today we'll be talking about your views of the CORE Improvement pilot in its second year, with a focus on the experiences of Cohort 2 as well as any changes between Year 1 and Year 2 of the pilot. This interview should take about 60 to 90 minutes.

ITSP Background

1. [For each interviewee:] First please tell me a little about your background and work with the CORE Pilot program this year.   Did you have any new responsibilities associated with the pilot this year?

Overall Project Management

2. Have there been any major changes between cohort 1 and cohort 2? What were they? What was the purpose of these changes?
3. Have there been any differences between cohort 1 and cohort 2 in terms of the level of effort needed to guide participants through the pilot? Have there been any changes in the amount or type of resources you have been given from last year to this year?
4. Have you experienced any operational issues in the second year of implementing the pilot?
5. Has there been any issue with Energy Trust's oversight of the program in year 2?
    a.   Have decisions been made consistently, effectively and in a timely manner?
6. What feedback would you give Energy Trust on their oversight of your firm's work and the pilot in general?

Recruiting

7. How were customers in cohort 2 recruited (did you recruit them, did PDCs recruit them, Energy Trust staff, etc.)? What method was most successful?
8. Out of the prospective participants that were actively recruited, how many or approximately what proportion ended up participating?

9. Are some types of customers that are more likely to participate? What are the characteristics of these customers? Are these characteristics different from large IEI participants and if so, how?

10. What elements of CORE do you think appealed to cohort 2 participants the most? Did any elements discourage customers from participating?

Coaching and Support

11. Did the type, frequency, and format of coaching and support you provided to the participants evolve from cohort 1 to cohort 2? Did this vary by sites within cohort 2?

12. How much did participants learn from the peer-to-peer networking and exchange of ideas that occurred during the group events? After observing cohort 2, do you have any ideas on how the "peer-to-peer" networking and exchange of ideas could be improved?

13. Do you have any concerns with your ability to expand SEM to more industrial customers in Energy Trust service territory, in terms of the technical resources needed to provide adequate coaching and support?
    a. Are there any other limitations to expanding the delivery of SEM in terms of additional resources that would be required?

CORE Workshops

14. Were there any changes to the format or content of the group workshops between cohort 1 and cohort 2?

15. Based on your experience with cohort 2, how effective were the group workshops in helping participants understand how to conduct the activities?
    a. By how much did they increase levels of participation or activity immediately following the workshops?
    b. Did this increase persist?
    c. Do you have any ideas for improving the group workshops?

16. Were there any changes to the format or content of the individual/onsite workshops between cohort 1 and cohort 2?

17. Based on your experience with cohort 2, how effective were the individual/onsite workshops in helping participants understand how to conduct the activities?
    a. By how much did they increase levels of participation or activity immediately following the workshops?
    b. Did this increase persist?
    c. Do you have any ideas for improving the individual/onsite workshops?

18. Did you use the same instructors/personnel to conduct the workshops and onsite meetings for cohort 2 and cohort 1? If not, how difficult was it to recruit new instructors for cohort 2?

Customer Participation and Engagement

19. Among the participants in cohort 2, what was the level of organizational commitment to SEM principles?
    a. What were common characteristics of companies that had a high level of commitment?
    b. Were these characteristics different from large IEI participants?
    c. Did you find that there was commitment among all levels of employees and management? Or was it a small core group driving the process?

    d. Did participants incorporate SEM principles into their corporate organization, for instance by developing and implementing energy policies, energy management plans, and/or energy savings goals?

20. How successful were cohort 2 participants at implementing SEM practices (e.g., regular energy team meetings, monitoring energy use, energy policy, opportunity register, etc.)?
    a. What characteristics or factors of cohort 2 participants most strongly correlated with success in implementing SEM practices?
    b. What subset of SEM activities do you think has provided the greatest benefit to companies in cohort 2?
    c. What subset of activities led to the greatest energy savings?
    d. Which SEM activities do you think cohort 2 participants are likely to continue with after the pilot is over? Which do you think they are likely to discontinue?

21. Which subset of SEM activities were most effective at engaging participants'…
    a. …Management?
    b. …Energy Team?
    c. …Operations and maintenance personnel?
    d. …Production employees?

22. Do you think participants get enough benefit from the MT&R models considering the time investment to create them?
    a. How much time does it take to build an effective MT&R model on the part of you and the participants?
    b. How much do cohort 2 participants rely on, use and understand their MT&R models?
    c. Do you think cohort 2 participants will be able to continue to use their MT&R model without the level of support provided during CORE? Will they be able to update their model to account for any production changes?

23. What was the level of engagement among cohort 2 participants in identifying and implementing O&M projects? Capital projects?

24. Did the milestone incentives and energy savings incentives change between cohort 1 and cohort 2? How effective were the milestone incentive in encouraging participants in cohort 2 to complete CORE activities? Were participants motivated more by the energy savings incentives or by the energy savings themselves to implement changes?

Program Delivery Contractors (PDCs)

25. Has the level or nature of involvement of the PDCs changed from year 1 to year 2? If so, how?
26. What is the general tenor of the interaction between the cohort 2 participants and their PDCs? [Prompt for: is it generally positive; negative; neutral]
27. How has the handoff of capital projects to the PDCs been working?
28. What were the benefits of having the PDCs involved? What were the drawbacks?

Closing

29. Overall, how would you say the CORE Pilot went over the course of the first two cohorts?
30. What would you say the greatest strengths and successes of the CORE Pilot are?
31. What areas are less successful or need improvement?
32. What challenges do you anticipate for the future? How will you address these challenges?
33. What are the key lessons learned?
34. What would you change about CORE to improve it?

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A.3 Cohort 1, Year 2 Interview Guide

<u>Background</u>
Navigant Consulting is evaluating the CORE Improvement (CORE) pilot for the Energy Trust of Oregon. The CORE pilot involves two <u>cohorts</u>—groups of about 10 highly motivated small- to medium-sized industrial sites. The program implementer, Triple Point Energy (Triple Point) trained participant management and staff on strategic energy management (SEM) practices and provided direct support to staff on energy management projects. Training and support was provided similar to the Resource Conservation Manager concept, but was shared across the cohort in this case. In addition to the support and training, CORE participants received incentives for completing certain milestones and for operations and maintenance (O&M) savings attributable to changes made through the CORE pilot. Annual savings and customer incentive amounts were based on the level of O&M savings achieved in the last three months of participation in the pilot.

The first cohort of participants attended nine workshops from 2012 to 2013, which a report out and celebration on October 29, 2013. This interview is being conducted with participants in the first cohort one year after the final report out to assess the persistence of CORE practices.

<u>Introduction</u>
Hello, this is [Name] from Navigant, calling on behalf of Energy Trust of Oregon. Thank you for agreeing to share your experiences one year after your participation in the CORE Improvement pilot. Your perspective is critical to Energy Trust as they seek to understand the benefits realized by pilot participants over time, as well as the challenges of maintaining savings over time, so they can make the initiative more effective for future participants. I anticipate that the interview will take approximately 40 to 50 minutes. This interview is for research purposes; your feedback will only be reported to Energy Trust anonymously and your responses will not affect the status of any Energy Trust project(s) you are involved with or may pursue in the future.

<u>Overcoming Objections</u>
<u>Confidentiality.</u> We are an independent consulting firm and will not report your firm's individual identity with your responses. Your responses will not affect the status of any Energy Trust project(s) you are involved with or may pursue in the future.
<u>Security.</u> Your responses will not affect your ability to participate in this or any other Energy Trust programs in the future.
<u>Sales concern.</u> I am not selling anything. On behalf of Energy Trust I simply want to understand your experience with the program to date.
<u>Contact.</u> If you would like to talk with someone from our client the contact is:
[Contact Information]

<u>Background</u>
First I would like to get some background on each of you individually, then some background on the firm.

1. For each interviewee, please identify:

Name	Department/Title	Length of time with Organization (yrs)	CORE Role (Energy Champion, Energy Data Mgr, Exec Sponsor, Other)

2. In the past year, have there been any changes to:
   a. The number of facilities your firm operates
   b. Where your facilities are located
   c. Whether you own or lease your facility
   d. Your firm's corporate structure
   e. The approximate number of employees at the firm
   f. The relative cost of energy, compared to other facility costs

Strategic Energy Management Activities

You may recall that the CORE pilot focused on training companies to engage in strategic energy management (SEM) practices. These are business practices that may not directly save energy but may result in energy savings over time as they are implemented. SEM practices include tracking your energy use, conducting employee engagement activities, using an opportunity register or other system to identify opportunities, having an energy policy or energy management plan, and setting energy reduction goals. *(If needed, clarify that we are not talking about specific capital or O&M measures yet.)*

Our first set of questions asks about general acceptance of strategic energy management practices.

Overall SEM Questions

3. To what degree has your organization continued to implement the energy management practices taught in the CORE pilot? What did it take to make this happen? [In other words, what is needed to make SEM "stick"?]
4. Have you encountered any challenges implementing SEM over the past year? What were they? How did you overcome them?
5. Have you maintained the energy savings you achieved during CORE? Have you identified additional opportunities and implemented changes during the past year by using energy management practices? Do you think you will be able to continue this into the future?
6. What have you done to ensure that these changes will persist?
7. Since the conclusion of the pilot, have other facilities that your company operates adopted strategic energy management practices as a result of your participation in CORE?

The next set of questions addresses specific SEM practices your company may have adopted as part of the CORE pilot.

MT&R Model

8. *[If we did not receive a copy of their MT&R before the call:]* Are you still using the Monitoring, Targeting and Reporting (MT&R) model and workbook that Triple Point developed to track

your energy use? If not, are you using another type of electronic system to track your energy usage over time?

If they are still updating the MT&R model and workbook:

a. In what ways are you currently using information from the MT&R model and workbook after CORE? (Probe about: Monthly reports to staff/management on energy savings; tracking toward annual savings goals; cost tracking, e.g. cost per unit of production)

b. How difficult is it to maintain the model? How much time does it take?

c. Have you changed the variables for your facility's MT&R model in the past year? If so, how? If not, are the existing variables still relevant?

d. Are you using any of your own tools to track energy in addition to the MT&R workbook?

e. Do you think you will continue using the MT&R workbook in the future?

If they are using another type of electronic system to track energy usage:

a. Can you describe how your system or tool works?

b. How difficult is it to maintain your system? How much time does it takes?

c. [If relevant: Why are you using/Why did you switch to] this electronic system instead of the MT&R model and workbook?

d. Do you think you will continue using your system in the future?

If they are no longer using a system to track energy usage:

a. What discouraged you from using the MT&R model and workbook past the CORE pilot?

b. How could the MT&R workbook have been improved so that you would have continued to use it?

c. Why are you not using an electronic system to track energy use?

9. Process changes not related to CORE:

a. Unrelated to your participation in CORE, how much has your production process and equipment changed since the end of the CORE pilot?

b. (If their process has changed and they are still tracking energy) Does your energy tracking system still provide you with reliable information, given these changes to your process?

10. Monitoring equipment:

a. Have you been using any of the monitoring equipment that you received through the pilot? [Prompt if needed: Current monitors, power meters…]

b. Have you purchased any additional monitoring equipment to help you track the energy use and diagnose problems of particular systems or pieces of equipment? [Prompt if needed: Data loggers, ultrasonic leak detectors for compressed air…]

Opportunity Register

11. Are you still using your opportunity register?

12. Of the items that were remaining on your opportunity register at the end of the CORE workshops, did you implement any of them at a later time? If not, why not?

Energy Team

13. [If not specifically addressed above, ask:] Are you continuing to hold energy team meetings? How frequently?

14. Has your energy team changed since the end of the CORE pilot? Were there other members of the energy team who are not on this call? Who were they and what role did they have?

15. Have you replenished the people on your energy team since the end of the CORE pilot?

16. Are there any members of your energy team who have these responsibilities as part of their work plan or part of their job description? Are any members of the energy team being evaluated by their management on this work?
17. What percent of each team member's time does he or she spend on energy team duties?
18. Are you still seeking people with any particular skills or knowledge to be on the energy team?
19. Are you still seeking people from any particular departments to be on the energy team?
20. Tell me about the Executive Sponsor's involvement. Do you have the same Executive Sponsor that you did during your CORE participation, or a different one? Do they require regular updates from the team? How frequently?
21. In general, how supportive is the management of continuing to work on SEM? What factors help influence this? [*Prompt for:* Does the Executive Sponsor help influence this? What about the savings achieved by participation?] [*If relevant*] Is the corporate office involved? If so, how?

Employee Engagement

22. Has the level of engagement in SEM changed since the end of the pilot (and if so, how) among your company's…
    a. …Management?
    b. …Energy Team?
    c. …Operations and maintenance personnel?
    d. …Production employees?
23. Last year you mentioned that you were…[*list employee engagement activities they were conducting or planned to conduct*]. Have you continued to conduct those activities? Have you initiated any new ones?

Energy Policies, Plans, and Goals

24. [If not specifically addressed above, ask:] Is your energy policy still in place? OR Have you adopted an energy policy in the last year?
    a. How is it used?
25. [If not specifically addressed above, ask:] Do you still have an energy management plan in place OR Have you developed an energy management plan in the last year?
26. [If not specifically addressed above, ask:] Are your energy reduction goals still in place? Did you meet your goals last year? OR Have you developed energy reduction goals in the last year? Did you meet those goals?

Capital and O&M Projects

I'm going to ask about some other types of projects you may have conducted as part of your participation in CORE—first, capital projects; and second, operations and maintenance changes—like adjusting set points, or turning out the lights.

Capital Upgrades

27. I noticed that you were planning to implement [*list capital projects that they said were in the planning stages*]. Did you end up implementing these projects?
28. Have you made any other capital upgrades in the past year as a result of your participation in the CORE pilot? What were they?

29. How did your participation in the CORE pilot affect your capital investment decisions after the end of the pilot period? (Probe for: did it impact their prioritization; did it help you overcome any specific challenges, etc.)

Operations and Maintenance

30. I noticed that you implemented [list O&M measures that they implemented as part of the CORE pilot]. Are you continuing to follow these practices?
31. I noticed that you were planning to implement [list O&M measures that they said were in the planning stages]. Did you end up implementing these projects?
32. Have you made any other changes to your operations and maintenance (O&M) as a result of your participation in the CORE pilot?
33. Do you have additional O&M changes planned? Please describe.
34. Did you encounter any challenges when implementing these? What were they? How did you overcome them?

General

35. Are there any other ways that your organization has changed the way it manages energy since the end of the CORE pilot?

Program Delivery Contractor

36. Have you worked with your PDC in the past year about energy efficiency or renewable energy projects? Were they able to help you? (If needed: PDCs are program delivery contractors. These are the professionals Energy Trust has hired to provide outreach, technical services and deliver the program to industrial and agricultural customers. Your local PDC is…[insert name of specific PDC who would serve that participant])
37. Are you planning to contact them about future energy efficiency or renewable energy projects?
    a. [If no, ask:] What are your concerns about contacting/working with them?

Next Steps

As part of our evaluation of the CORE pilot, we would like to request copies of your Opportunity Register and energy tracking spreadsheet, whether this is the MT&R provided by Triple Point or another system you have developed for tracking energy. Will you be able to send these to us?

[If they are no longer tracking their energy] Would you be willing to provide production or other relevant data to help us evaluate the energy savings? We will keep all data confidential.

We would also like to request a site visit to your facility by a member of our staff. The purpose would be to collect on-site qualitative and quantitative data that we will use to evaluate the energy savings. The site visits would most likely take place in January or early February. How should we arrange this with you?

Closing

Thank you very much for your time today. If I have a clarification question as I'm reviewing my notes, is it all right to call you back or email you? Yes/No

Thanks again, and have a great day.

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A.4 Cohort 2, Year 1 Interview Guide

Background
Navigant Consulting is evaluating the CORE Improvement (CORE) pilot for the Energy Trust of Oregon. The CORE pilot involves two cohorts—groups of about 10 highly motivated small- to medium-sized industrial sites. The program implementer, Triple Point Energy (Triple Point) trained participant management and staff on strategic energy management (SEM) practices and provided direct support to staff on energy management projects. Training and support was provided similar to the Resource Conservation Manager concept, but was shared across the cohort in this case. In addition to the support and training, CORE participants received incentives for completing certain milestones and for operations and maintenance (O&M) savings attributable to changes made through the CORE pilot. Annual savings and customer incentive amounts were based on the level of O&M savings achieved in the last three months of participation in the pilot.
Nine workshops were held over a thirteen month period in 2013 and 2014 with a report out and celebration on October 29, 2014. Three workshops were organized as group meetings and held at Energy Trust offices; six workshops we held individually at the participant site.
This interview is being conducted with participants in cohort 2 of the pilot to gather feedback on the pilot. Navigant will pre-populate as many fields as possible from the MT&R, opportunity register, or the participant's own wrap-up powerpoint to shorten the duration of each interview.

Introduction
Hello, my name is [Name] and I work for Navigant Consulting. I am calling on behalf of Energy Trust of Oregon (Energy Trust); they are interested in getting feedback from you on your experiences with the CORE Improvement pilot. Your perspective is critical to Energy Trust as they seek to understand the benefits realized by pilot participants, as wells as the challenges, so they can make the initiative more effective for future participants. I anticipate that the interview will take approximately an hour. This interview is for research purposes; your feedback will only be reported to Energy Trust anonymously and your responses will not affect the status of any Energy Trust project(s) you are involved with or may pursue in the future.

Overcoming Objections
Confidentiality. We are an independent consulting firm and will not report your firm's individual identity with your responses. Your responses will not affect the status of any Energy Trust project(s) you are involved with or may pursue in the future.
Security. Your responses will not affect your ability to participate in this or any other Energy Trust programs in the future.
Sales concern. I am not selling anything. On behalf of Energy Trust I simply want to understand your experience with the program to date.
Contact. If you would like to talk with someone from our client the contact is:
[Contact information]

CORE Interview Guide
Again, this interview should take about an hour. I'll start by getting some background information about you and your firm, then ask some questions about your experience and activities with CORE, then finally ask you to evaluate some of the elements of CORE.

Background

First, I would like to get some background on each of you individually, then some background on the firm.

1. For each interviewee, please identify:

Name	Department/Title	Length of time with Organization (yrs)	CORE Role (Energy Champion, Energy Data Mgr, Exec Sponsor, Other)

[We will pre-populate the following from the wrap-up powerpoint, as appropriate.]

2. How long has your firm been in business?
3. How many facilities does your firm operate? Where are they located?
4. Do you own or lease your facility? (The facility at which the CORE was implemented)
5. Is your firm privately or publicly held? What is your corporate structure and how does your facility fit into that structure? How does this structure affect decision-making at your site?
6. If private: Is the owner involved in the operation? Do they work at your facility?
7. What percent of total costs are energy costs at your facility?

Motivation to Participate

8. What originally motivated your company to participate in the CORE Improvement pilot?
9. What specific goals or results did you hope to achieve from your participation when you first began?
    a. Have any of these goals been realized so far?

10. We'd like to understand the value that your firm received from the CORE improvement pilot.
    a. First, do you think participating in the CORE pilot has been of value to your firm?
    b. Can you describe the form of the value?
    c. What elements of the CORE pilot provided the greatest benefit to you?
    d. Did you realize any unexpected benefits?

Strategic Energy Management

CORE focused on training companies to save energy through strategic energy management (SEM) practices. These are business practices that may not directly save energy but may result in energy savings over time as they are implemented. SEM practices include tracking your energy use, conducting employee engagement activities, using an opportunity register or other system to identify opportunities, having an energy policy or energy management plan, and setting energy reduction goals. (If needed, clarify that we are not talking about specific capital or O&M measures yet.)

Our first set of questions asks about general acceptance of strategic energy management practices.

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<u>Overall SEM Questions</u>

11. To what degree has your organization as a whole adopted the energy management practices taught in the CORE pilot? Have any met with resistance in your organization? [Prompt for: Why?]

12. Did you encounter any other challenges when undertaking SEM activities? What were they? How did you overcome them?

13. Do you think you will continue to incorporate the strategic energy management practices that you have learned into your business? [If not, prompt for reasons.]

If yes:
   a. Do you believe that you'll be able to maintain your energy savings?
   b. Do you believe you will be able to identify additional opportunities for saving energy if you continue to use the energy management practices past the workshops?
   c. What changes have you put in place that will enable you to do this?

14. Have any other facilities within your company adopted strategic energy management practices as a result of your participation in CORE?

The next set of questions addresses specific SEM practices your company may have adopted as part of the CORE pilot.

<u>MT&R Model</u>

15. Are you currently using the Monitoring, Targeting and Reporting (MT&R) model and workbook that Triple Point developed to track your energy use? If not, are you using another type of electronic system to track your energy usage over time?

   If they are using the MT&R model and workbook:
   a. Were the MT&R model and workbook useful to you and were they easy to understand and use?
   b. Did you use the MT&R workbook to help you identify potential opportunities or evaluate the benefit of the activities that you implemented? How?
   c. Were the variables chosen for your facility's MT&R model based on data that are easy to gather on a regular basis? Do they make sense to you?
   d. How could the MT&R workbook have been more useful to you?
   e. Was the MT&R workbook delivered in a timely fashion so that you could use it to track your progress during the pilot?
   f. Will you continue to use the MT&R model and workbook after CORE, and if so, in what ways? (Probe about: Monthly reports to staff/management on energy savings; tracking toward annual savings goals; cost tracking, e.g. cost per unit of production)

   If they are using another type of electronic system to track energy usage:
   a. Can you describe how your system or tool works?
   b. Why did you use this electronic system instead of the MT&R model and workbook?
   c. How could the MT&R workbook have been improved so that you would have continued to use it?
   d. Did you use the MT&R workbook to help you identify potential opportunities or evaluate the benefit of the activities that you implemented? How?
   e. Were the variables chosen for your facility's MT&R model based on data that are easy to gather on a regular basis? Do they make sense to you?
   f. Will you continue to use your electronic system after CORE, and if so, in what ways?

If they are not using a system to track energy usage:
   a. What discouraged you from using the MT&R model and workbook?
   b. How could the MT&R workbook have been improved so that you would have continued to use it?
   c. Did you use the MT&R workbook to help you identify potential opportunities or evaluate the benefit of the activities that you implemented? How?
   d. Were the variables chosen for your facility's MT&R model based on data that are easy to gather on a regular basis? Do they make sense to you?
   e. Why are you no longer using an electronic tool to track energy use?

16. Process changes not related to CORE:
   a. Unrelated to your participation in CORE, how much has your production process and equipment changed since you started CORE?
   b. (If their process has changed and they are still tracking energy) Does your energy tracking system still provide you with reliable information, given these changes to your process?

Opportunity Register
17. Did you find the Opportunity Register useful in helping you prioritize and implement projects? Are you still using it?
18. What percent of the items on your opportunity register were identified as a result of CORE?

Energy Team
19. How frequently did the energy team meet over the course of your involvement in CORE? Is your energy team still meeting? How frequently is it currently meeting?
20. Has your energy team changed since you first started meeting? Were there other members of the team who are not on this call? Who were they and what role did they have? Do you plan to replace them?
21. [For each person on the energy team:] How much of your job is devoted to SEM? Is energy management in your job description?
22. Do you feel that, amongst your team members, you had the right mix of people to effectively undertake all of the activities?
   a. What skills or knowledge did you or your team members have that were relied on the most?
   b. What additional skills or knowledge would have been useful?
   c. Did your team include members from the right mix of departments to support the changes you needed to make?
   d. Were there any additional departments that you wish had been represented on your energy team?
23. Are there any other areas of support from within your organization that would have made your efforts easier or more effective?
24. Tell me about the Executive Sponsor's involvement. Did they require regular updates from the team? How frequently?

25. In general, how supportive was the management of undertaking CORE and associated projects? Did the Executive Sponsor help influence this?

NAVIGANT

Employee Engagement

26. What was the level of engagement with the CORE Pilot among your company's…
    a. …Management?
    b. …CORE Energy Team?
    c. …Operations and maintenance personnel?
    d. …Production employees?
27. Did you conduct any specific employee engagement activities as part of your participation in CORE? If so, do you plan to continue those activities in the future or initiate new ones?

Energy Policies, Plans, and Goals

28. Did you develop an energy policy as part of your participation in the CORE pilot?
29. Did you create an energy management plan as part of your participation in the CORE pilot?
30. Did you develop any numeric energy reduction goals as part of your participation in the CORE pilot?
31. Are you currently using these tools to help guide your energy management activities? Do you plan to continue any of these activities after the end of the pilot?

Capital and O&M Projects

I'm going to ask about energy projects you may have conducted as part of your participation in CORE—first, capital projects; and second, operations and maintenance changes—like adjusting set points, or turning out the lights.

Capital Upgrades

32. I noticed that you implemented [list capital projects identified in their final report]. Can you briefly describe those projects?
33. I noticed that you listed [list projects identified in their Opportunity Register that did not appear in their final report] in your Opportunity Register. Have you implemented any of these projects? Do you plan to do so in the future?
34. How did your participation in the CORE pilot affect your capital investment decisions? (Probe for: did it impact their prioritization; did it help you overcome any specific challenges, etc.)
35. Are you planning to add any other capital projects to this list? If so, what are they? If not, why not?

Operations and Maintenance

36. I noticed that you implemented [list O&M projects identified in their final report]. Can you briefly describe those projects?
37. I noticed that you listed [list projects identified in their Opportunity Register that did not appear in their final report] in your Opportunity Register. Have you implemented any of these O&M projects? Do you plan to do so in the future?
38. Did you encounter any challenges when implementing these? What were they? How did you overcome them?
39. Are you planning to add any other O&M projects to this list? If so, what are they? If not, why not?

General Projects

40. Are there any other ways that your organization has changed the way it manages energy since beginning CORE?

CORE Workshops

41. How satisfied were you with the *group workshops*?
    a. What aspects did you like?
    b. Do you have any suggestions for improvement?
42. Did you find the peer exchange between firms at the group events to be helpful? How could CORE's peer-to-peer activities and networking be improved?
43. How satisfied were you with the *on-site workshops*?
    a. What aspects did you like?
    b. Do you have any suggestions for improvement?
44. Regarding all the workshops, group and on-site, what activities or content did you find the most valuable? Why?
45. What activities or content did you find the least valuable? Why?
46. What other topics would you have liked to cover?

Triple Point (Industrial Technical Service Provider)

47. How satisfied were you with the *service* and *support* provided by Triple Point?
    a. What did Triple Point do well?
    b. Do you have any suggestions for improvement?

Incentives

48. Milestone incentives: There were three interim incentives, one for providing two years of utility and production data, one for demonstrated understanding of the MT&R model use after the workshop, and one for tying the opportunities register and actions to the model.
    a. How much of a motivating factor were the availability of milestone incentives in encouraging you to complete key activities?
    b. Do you think the amount of these incentives was appropriate?
49. Energy savings incentive: This was an added incentive of $0.02 per kWh and $0.20 per therm of energy savings realized through CORE.
    a. How much of a motivator was the energy savings incentive in encouraging you to complete the various CORE pilot activities? [Prompt if examples needed: tracking your energy use, conducting employee engagement activities, using an opportunity register or other system to identify opportunities, having an energy policy or energy management plan, and setting energy reduction goals.]
    b. How about in encouraging you to make changes to save energy?
    c. Do you think the incentive level was appropriate?
50. Which was more of a motivating factor: the incentives, or the energy savings themselves?

Overall

51. How satisfied were you with the overall *structure and participation process of the Core Improvement pilot*? [If needed, clarify: What your company had to do and in what order; the meetings and workshops you participated in; the schedule; how easy or difficult it was for your firm to participate compared to the value you received; etc.]
    a. What aspects of the structure and participation process did you like?
    b. Do you have any suggestions for improvement?
52. Overall, what were the most positive aspects of the CORE pilot?

53. Were there any negative aspects? What were they?
54. What could Energy Trust do to help your organization sustain your strategic energy management practices and continue to identify and implement changes to save energy?
55. Would you recommend other firms to enroll in CORE?

<u>Closing</u>

Thank you very much for your time today. If I have a clarification question as I'm reviewing my notes, is it all right to call you back or email you? Yes/No

Thanks again, and have a great day.

Appendix B. Site-Specific Information for Cohort 1

The site-specific information contains confidential customer information and is provided in a separate document.