

# **Energy Management Practice MARKET EVALUATION**

**Year 4 Final Report**

Prepared for:

**New York State Energy Research and Development Authority**

Albany, New York

Carley Murray, NYSERDA Project Manager

Prepared by:

**Cadmus**

Portland, OR

Karen Horkitz, Vice President

Laura James, Associate

Kaitlyn Teppert, Senior Analyst

# Record of Revision

---

Document Title
NYSERDA EMP Market Assessment Report – Year 4 December 2020

Revision Date	Description of Changes	Revision on Page(s)
December 2020	Original Issue	Original Issue

# Notice

---

This report was prepared by Cadmus in the course of performing work contracted for and sponsored by the New York State Energy Research and Development Authority (hereafter “NYSERDA”). The opinions expressed in this report do not necessarily reflect those of NYSERDA or the State of New York, and reference to any specific product, service, process, or method does not constitute an implied or expressed recommendation or endorsement of it. Further, NYSERDA, the State of New York, and the contractor make no warranties or representations, expressed or implied, as to the fitness for particular purpose or merchantability of any product, apparatus, or service, or the usefulness, completeness, or accuracy of any processes, methods, or other information contained, described, disclosed, or referred to in this report. NYSERDA, the State of New York, and the contractor make no representation that the use of any product, apparatus, process, method, or other information will not infringe privately owned rights and will assume no liability for any loss, injury, or damage resulting from, or occurring in connection with, the use of information contained, described, disclosed, or referred to in this report.

NYSERDA makes every effort to provide accurate information about copyright owners and related matters in the reports we publish. Contractors are responsible for determining and satisfying copyright or other use restrictions regarding the content of reports that they write, in compliance with NYSERDA’s policies and federal law. If you are the copyright owner and believe a NYSERDA report has not properly attributed your work to you or has used it without permission, please email [print@nyserda.ny.gov](mailto:print@nyserda.ny.gov).

Information contained in this document, such as web page addresses, are current at the time of publication.

# Table of Contents

---

<b>Record of Revision</b> .....	<b>ii</b>
<b>Acronym List</b> .....	<b>iii</b>
<b>Executive Summary</b> .....	<b>1</b>
Research Activity and Key Results .....	1
Key Findings and Recommendations .....	6
<b>1. Introduction</b> .....	<b>9</b>
1.1. Background and Key Terms.....	9
1.2. Year 4 Research Tasks and Objectives.....	10
<b>2. Process Evaluation</b> .....	<b>12</b>
2.1. Logic Model Review.....	12
2.2. Program Changes and Lessons Learned .....	24
<b>3. Program Review Results: Recruitment and Market Transformation Strategies</b> .....	<b>28</b>
3.1. Key Recruitment Strategies.....	28
3.2. Strategies to Promote Market Transformation .....	34
<b>4. Key Findings and Recommendations</b> .....	<b>36</b>
4.1. Finding 1.....	36
4.2. Finding 2.....	36
<b>5. Methodology</b> .....	<b>39</b>
5.1. Process Evaluation.....	39
5.2. Program Review.....	39
<b>Appendix A. Logic Models</b> .....	<b>A-1</b>
<b>Appendix B. Program Manager Interview Guide</b> .....	<b>B-1</b>

# Tables

---

Table 1. Implementation Status of On-site Energy Manager Activities and Outputs.....	13
Table 2. Logic Model Audiences.....	16
Table 3. Status of On-site Energy Manager Near-Term Outcomes.....	18
Table 4. Implementation Status of Strategic Energy Management Activities and Outputs.....	20
Table 5. Logic Model Audiences.....	22
Table 6. Status of Strategic Energy Management Near-Term Outcomes.....	23
Table 7. Strategic Energy Management Marketing Segments and Characteristics.....	32

# Acronym List

---

Acronym	Definition
CEF Industrial Chapter	Clean Energy Fund Investment Plan Industrial Chapter
EMA	Energy management assessment
EMP	Energy management practice
FlexTech program	Flexible Technical Assistance program
IOU	Investor-owned utility
NEEA	Northwest Energy Efficiency Alliance
OsEM	On-site Energy Manager
SEM	Strategic Energy Management
U.S. DOE	U.S. Department of Energy

# Executive Summary

---

The Energy Management Practice (EMP) Market Evaluation is a five-year study to monitor the adoption of EMPs in the industrial sector in New York. The study, which was designed to run in parallel with NYSERDA's EMP initiatives, has two primary objectives:

- Measure the rate of EMP adoption by the broader market (exclusive of participants), both as a result of naturally occurring adoption and as a result of the EMP initiative activities
- Provide ongoing market characterization to inform initiative design and implementation

This report presents findings and conclusions from research conducted by the Evaluation Team in 2020, Year 4 of the EMP Market Evaluation.

## Market Evaluation in the Context of COVID-19

In early 2020, the coronavirus (COVID-19) began to spread rapidly throughout New York, and the world, causing a global pandemic. The New York State Governor issued an executive order on March 20, 2020 that mandated closure of all non-essential businesses, which remained in effect through May 15. Throughout 2020, the ongoing pandemic continued to have a profoundly limiting impact on social and economic activity in the state.

The EMP Market Evaluation Team has worked with NYSERDA to adjust evaluation activities to address the present circumstance. The Team updated research objectives for the Year 4 and Year 5 Market Evaluations to assess the impacts of COVID-19 on the EMP initiative and on the target market. The Team was not required to make changes to the Year 4 research scope or schedule. For the Year 5 Market Evaluation, the Team and NYSERDA will continue to monitor the impact of the pandemic. The Team will reevaluate data collection activities if respondents provide pushback about the appropriateness of fielding a survey or if response rates are notably lower than expected.

## Research Activity and Key Results

In Year 4 the Evaluation Team conducted a process evaluation of the EMP components: On-site Energy Manager (OsEM) initiative and of the Strategic Energy Management (SEM) initiative to evaluate the initiatives' effectiveness based on performance to date, and to assess those program outcomes for which relevant evidence was available.<sup>1</sup> The Team also assessed the impact of COVID-19 on initiative activities generally. The two alternative SEM training options were launched too recently to be evaluated, but the Team included observations on the design and launch of these training components as they related to the EMP initiative as a whole.

The process evaluation included a review of initiative logic models and other materials, interviews with the initiative program and project managers, and a review of findings from previous Market Evaluation

---

<sup>1</sup> The Year 5 study will include additional primary data collection and a more thorough assessment of initiative outcomes. NYSERDA will also conduct an impact evaluation to quantify direct savings generated by the initiative.

reports. In addition to the process evaluation, the Team reviewed secondary sources and interviewed program managers from other jurisdictions to identify best practices for recruitment and outreach to promote market adoption of SEM practices.

## **Logic Model Review Results**

The Evaluation Team reviewed the logic models against program materials, information collected through interviews with NYSERDA staff, and previous EMP Market Evaluation reports to examine the clarity of linkages between activities and outcomes, identify initiative strengths and opportunities for improvement, and assess whether evidence to date supports logic model assumptions about initiative outcomes.

## **On-site Energy Manager Results**

The Evaluation Team found the logic model to be generally clear and consistent with the initiative theory. The Team then reviewed the logic model components (Activities, Audiences, Outputs and Outcomes) against the initiative materials, interviews with NYSERDA staff, and past evaluation research.

## **Activities and Outputs**

The Evaluation Team confirmed that all OsEM initiative activities are currently complete or initiated and conform to the activity description in the Clean Energy Fund Investment Plan (CEF) Industrial Chapter.<sup>2</sup> Most activities have been fully implemented at least once, and several are repeating activities that will continue as long as the initiative is operational. These repeating activities include outreach, energy management activities implemented by OsEMs, and the development of OsEM case studies, roadmaps and resources.

## **Audience Engagement**

NYSERDA has engaged all target audiences identified in the logic model to some degree, but the response to NYSERDA's outreach has been uneven among some key market actor groups. Staff reported that, in the past, it was difficult for NYSERDA and utilities to work together, in part because of regulatory limits on the way savings from joint activities were allocated. Recently, however, the New York Public Service Commission issued an Order that lifted the savings restriction, and granted NYSERDA and utilities broad leeway to design partnerships that work for both organizations.<sup>3</sup> While, to date, most utilities have worked with NYSERDA to offer key account managers a webinar presenting NYSERDA industrial initiatives, National Grid has partnered extensively with NYSERDA to educate its key account managers about the OsEM and SEM initiatives specifically and to promote the initiative to its customers. Its program staff view the EMP project registers as valuable resources that drive participation in their rebate programs. NYSERDA staff continue to reach out to potential utility partners.

NYSERDA has also established sustained partnerships with several regional business and industry groups—such as the Business Council of New York, the Manufacturers Association of Central New York, and the Western New York Sustainable Business Roundtable. Industry-specific trade organizations

---

<sup>2</sup> New York State Energy Research and Development Authority. June 2020. *Clean Energy Fund Investment Plan Industrial Chapter*. <https://www.nyserdera.ny.gov/-/media/Files/About/Clean-Energy-Fund/CEF-Industrial-chapter.pdf>

<sup>3</sup> State of New York Public Service Commission. Issued and effective January 16, 2020. "Case 18-M-0084: Order Authorizing Utility Energy Efficiency and Building Electrification Portfolios through 2025."



have shown less interest. NYSERDA staff reported these organizations tend to have a national focus that makes it difficult for them to work with a state-level program.

### **Outcomes**

There is substantial evidence, from initiative materials, the OsEM staff, and participant interviews conducted for the Year 3 Market Evaluation, that OsEM participants are implementing energy saving projects. In addition, NYSERDA is disseminating case studies and other OsEM resources through outreach and education activities and through its website.

### **Strategic Energy Management Results**

In some places, the program theory and logic model do not incorporate the program team's latest understanding of the role of energy consultants. But overall, the SEM logic model generally reflected the SEM program theory in the CEF Industrial Chapter, and presented reasonable linkages and assumptions.

### **Activities and Outputs**

SEM outreach and education as part of general outreach for its industrial initiatives; these activities are ongoing as described in the OsEM section (see *On-site Energy Manager Logic Model* section). All activities related to developing and delivering the cohort training, providing organizational support to cohort participants, administering the training, and developing case studies had been fully implemented prior to the pandemic shutdown, and were repeated for each new cohort. Now that training programs are underway and generating results for participants, NYSERDA is planning to complete the final pending activity, developing and implementing a market dissemination plan, in 2021.

### **Audience Engagement**

As expected given the similar nature of program objectives, the SEM logic model identifies the same target audiences as the OsEM logic model. The SEM initiative engages with all audiences in a manner similar to the OsEM initiative, except energy consultants. SEM consultants have a less central role in the SEM initiative relative to the OsEM, and are engaged principally through outreach activities.

### **Outcomes**

The Evaluation Team was able to assess three of the SEM near-term outcomes identified in the logic model: implementation of energy projects resulting in energy savings, quantifiable energy intensity reduction, and dissemination of standardized SEM resources. The Evaluation Team found strong evidence that the SEM cohort participants are implementing energy projects, realizing energy savings, and making progress toward their energy usage reduction goals. The third outcome, dissemination of SEM tools and resources, is in progress. The implementer has created much of the content for these materials as part of the cohort training, and has developed public versions of some SEM resources. NYSERDA plans to finalize a dissemination plan and full set of SEM materials and resources in 2021.

### **Initiative Changes and Lessons Learned**

In addition to reviewing the logic models, the Evaluation Team documented the lessons learned as identified by the NYSERDA staff interviews and the drivers and outcomes of changes in initiative delivery over the past four years.

### ***On-site Energy Manager Initiative***

The OsEM staff reported that NYSERDA has proactively implemented several changes to streamline the administration of the OsEM initiative and to make the initiative more flexible and easier for participating businesses.

To simplify administration, NYSERDA opened the OsEM initiative to commercial and multifamily participants immediately following the pilot. This increased the volume of applications sufficiently to allow NYSERDA to assign multiple project managers to support the OsEM application and contracting processes and management of executed contracts.

To make the OsEM initiative design more flexible, NYSERDA allowed the period of the initial contract to vary from 12 to 24 months, or longer in some cases; allowed the OsEM time commitment to range from 20 to 40 hours per week regardless of the energy expenditure of the facility; and switched from a competitive enrollment process to open enrollment, which eliminated some risk for applicants.

Additionally, NYSERDA instituted bonus payments for OsEM participants who demonstrated continued project execution and ongoing energy savings in the 12 months following the initial contract period, and again in the 12 months after that. No OsEM participants had yet reached this stage at the time of this evaluation, but the NYSERDA staff interviewed reported most participants indicated that they intend to pursue the bonuses.

### ***Strategic Energy Management Initiative***

Since the initial cohort launch, the SEM initiative implementer has updated the initiative cohort training materials several times. In one instance, in response to participant feedback, the implementer expanded the more technical components of the training, such as the workshop on energy calculations. The SEM initiative also switched to the Northwest Energy Efficiency Alliance (NEEA) energy management assessment (EMA) tool, which provides several benefits to participants, including an easier experience and more information on their progress. Finally, NYSERDA staff expanded the initiative to include wastewater facilities. As of spring 2020, when initiation of new cohorts was put on hold due to COVID-19, NYSERDA had recently launched its second wastewater cohort.

In response to COVID-19 and a national shut down, the implementer and NYSERDA staff developed two alternative training options: the On Demand SEM and the Virtual Treasure Hunt. These options are currently promoted on the NYSERDA website, and references to the cohort model have been removed.

## **Initiative Review Results**

The Evaluation Team reviewed secondary materials and interviewed program managers of four notable energy management programs across North America to identify lessons learned about their recruitment and market transformation:

- Efficiency Vermont (continuous energy improvement)
- Northwest Energy Efficiency Alliance (SEM)
- Energy Trust of Oregon (SEM)
- A Midwest Organization (Energy Manager Non-Incented Measures and other SEM)<sup>4</sup>

### ***Key Recruitment Strategies***

Program managers in other jurisdictions all reported that recruitment for energy management programs relies on trusted messengers, targeted communication channels, and refined messaging.

Interviewees noted that the most effective messenger is one who already has an existing relationship with a potential participant, such as a utility key account manager. A program representative with an existing relationship may already know if a given facility is a good fit for SEM and may have already established trust with the facility staff. Partnering with utilities and trade associations also provide other benefits, such as increasing the validity of the outreach message. A customer is likely familiar with its utility and members expect trade associations to present them with new opportunities to keep their facility updated with new trends in the market. Finally, hiring an implementer to develop and maintain relationships with potential customers can replace or leverage utility or trade association relationships.

Targeted communication channels that allow potential participants to ask questions in real time such as presenting at conferences, hosting informal presentations for a small group of individuals (lunch and learns), and individual facility visits are effective recruitment activities. Presenting at conferences and hosting lunch and learns give candidates the opportunity to hear other questions and the response, and can be elevated by including trusted messengers and past participants. Individual facility visits are more time-intensive, but they give the program representative an opportunity to observe first-hand whether the facility is likely to be a good fit for SEM. (The active COVID-19 pandemic makes any in-person activity impractical, and elevates the importance of online outreach activities such as webinars.)

Regardless of the recruitment approach, the information provided to potential participants needs to be relevant and persuasive, which can be achieved by a robust segmentation plan. Interviewed program managers emphasized that in all messages, transparency about benefits and required commitments from the potential participant is key. In particular, since time is typically the key resource that must be committed to SEM, participants should understand how much staff time they will need to commit to both participate in the training activities, and set up and maintain SEM practices.

### ***Market Transformation***

Beyond consistently helping the program participants to lower their energy usage, NYSERDA has a long-term goal of transforming the industrial market to adopt SEM independently of program activity.

---

<sup>4</sup> This program is presented anonymously at the program manager's request.

Most interviewed program managers indicated that market transformation is technically not a program goal of theirs, but they believe market transformation is occurring naturally as a result of their program. As an example, one program manager reported increasing demand for energy manager jobs in its jurisdiction.

In contrast, NEEA's Industrial Continuous Energy Improvement Initiative, which was active from 2006 to 2014, was explicitly focused on market transformation. NEEA's program manager indicated NEEA achieved a considerable degree of market transformation, starting at nearly zero awareness and arriving at a point where multiple market actors collaborate to promote SEM to industrial customers across the Northwest. The single most important strategy NEEA's program manager identified was getting different stakeholders, particularly trade associations and utilities, express their concerns and ideas in one room together. This allowed for a better understanding of each other's perspectives and needs. After facilitating new relationships between participating entities, NEEA was able to step out of the picture and these stakeholders could continue implementing SEM programs without NEEA's direct support.

Another key strategy mentioned by NEEA's program manager was establishing the perception of SEM as a continuum. For companies with less resource flexibility to participate in a full SEM program, a guide with activities that are easy and cheap to implement can engage them in a minimum SEM program. NEEA's program manager said these minimum SEM programs create a regional SEM maturity curve because when a company adopts a minimum SEM, they are more likely to come back and adopt more and more SEM practices over time.

## Key Findings and Recommendations

The Evaluation Team identified two key findings and three recommendations for NYSERDA's EMP initiatives.

### Finding 1

**Early outcomes from the first four years of initiative activity indicate that OsEM and SEM are operating largely in alignment with their respective logic models, and are well-positioned to increase their focus on market dissemination.** Participation in the OsEM and SEM initiatives has demonstrated that the programs have value for end users and that activities have effectively led participants to implement energy management and achieve energy savings. NYSERDA staff have created case studies for both programs, based on participant experiences, and integrated these case studies into outreach and education activities. Some OsEM and SEM standardized tools and educational resources are already being disseminated through outreach and education activities. NYSERDA staff are also working with the SEM implementer and the marketing provider to complete an SEM dissemination plan with additional SEM resources in 2021.

Over the four years of implementation, the program team has deepened their understanding of the target market and used that information to continuously refine and improve the initiative design and delivery systems. NYSERDA continues to recruit new participants as well as an increasing pool of supply side and other market actor partners. As reported in the Year 3 evaluation, participants report high levels of satisfaction with the program, and a high rate of continued EMP activity even after the direct program engagement ends.

## **Recommendation 1**

**At this point in the implementation, take the opportunity to review and update the program theory and logic model to incorporate new understanding.** In particular, review the role of energy and process consultants in achieving market transformation for the SEM target markets. Based on implementation experience and market research, NYSERDA staff have deemphasized the role of energy and process consultants in driving SEM adoption, and instead focused on developing a more varied set of training options that accommodate smaller firms and offer end-users more choice and convenience.

Documenting the reasons for this shift will help the program team sustain their long-term focus on market transformation and communicate their approach to other stakeholders. In the near term, revise the logic model barriers and outcomes that reference SEM qualified service providers to instead reference SEM training resources, and remove the list of SEM qualified providers as an output. Longer term, update the initiative background and program theory in the next iteration of the CEF Industrial Chapter to reflect an updated understanding of the resources end-users need to implement and sustain SEM.

## **Finding 2**

**NYSERDA is already implementing many of the outreach best practices observed in other programs, but there may be opportunities to expand partnerships with key market actors to support both recruiting and market transformation.** Program managers from other jurisdictions indicated that recruiting participants for energy management programs requires working through a diverse set of trusted messengers, using communication channels that facilitate presenting complex information, clearly communicating both benefits and the intensive time and financial commitments required from participants, and conducting early screening to ensure that potential participants are a good fit for SEM. NYSERDA is already employing all of these practices, and continues to identify new opportunities to collaborate with long-term marketing partners on presentations and conferences that attract a diverse audience. At the same time, NYSERDA staff reported that recruitment is still a challenge. And while NYSERDA has a robust partnership with National Grid and several regional trade organizations, other utilities and trade groups have not engaged at the same level with NYSERDA's EMP initiatives.

## **Recommendation 2**

**Continue to reach out to utility staff at National Grid and the other New York IOUs to explore opportunities to develop formal program partnerships.** The program review confirms that utilities are among the best-positioned actors to support scaled-up outreach and education about the benefits of energy management. The State of New York Public Service Commission Order from January 2020 encouraged greater collaboration between NYSERDA and utilities by removing the cap on savings utilities could claim from joint initiatives. Since this is a relatively new Order, NYSERDA's past experience interacting with utilities may not reflect their current appetite for partnership.

If not already doing so, NYSERDA staff should reach out to the commercial and industrial program managers at each IOU and their implementers, to discuss how NYSERDA and utility programs could better coordinate or offer complementary programs. For example, IOU programs may be ideal vehicles to help customers work through the decision to commit to an intensive program such as OsEM or SEM. For example, ConEd's rebate programs for commercial and industrial customers are all based on an initial walkthrough audit. If the auditors (some of which are the implementer or their subcontractors) are trained

on the benefits of the EMP initiatives, they can advise customers on their total energy efficiency potential and whether they might benefit from OsEM or SEM.

### **Recommendation 3**

**Contact prior and current participants in OsEM and SEM to understand what industry specific trade organizations, if any, exist in New York that could be effective outreach and marketing partners.** NYSERDA staff may be able to identify New York-focused trade associations that might be interested in partnering with NYSERDA through conversations with their current and past participants. Participants are likely to have a good understanding of what organizations exist, how active they are, and how well their typical activities would overlap with supporting NYSERDA outreach. NYSERDA should also involve participants when reaching out to trade associations, since program managers from other jurisdictions reported trade associations can initially be difficult partners to recruit. Involving a past participant that is also a member will immediately demonstrate to the organization that NYSERDA 's programs are potentially of interest to their members.

# 1. Introduction

---

The EMP Market Evaluation is a five-year study to monitor the adoption of EMPs in the industrial sector in New York. The study, which was designed to run in parallel with NYSERDA's EMP initiatives, has two primary objectives:

- Measure the rate of EMP adoption by the broader market (exclusive of participants), both as a result of naturally occurring adoption and as a result of the EMP initiative activities
- Provide ongoing market characterization to inform initiative design and implementation

This report presents findings and conclusions from research conducted by the Evaluation Team in 2020, Year 4 of the EMP Market Evaluation. (NYSERDA's EMP initiative was previously known as the Continuous Energy Improvement initiative, and this study was previously titled the Continuous Energy Improvement Market Evaluation.)

## 1.1. Background and Key Terms

EMP is loosely defined as a facility management approach that encourages an ongoing, coordinated, and strategic approach to managing energy usage as a core business practice to optimize profitability and competitiveness. In its CEF Industrial Chapter, NYSERDA describes its EMP initiatives as being directed to the industrial sector to demonstrate the benefits of EMP and encourage broader adoption. NYSERDA offers two EMP initiatives: OsEM and SEM.

- *The **OsEM** initiative*, launched in September 2016, is designed to encourage facilities to adopt a long-term OsEM in their facility organizational structure. OsEMs deliver continuous process and energy improvement by identifying and overseeing the implementation of operational, organizational, and behavioral changes in a facility or organization. The initiative subsidizes the cost of an energy manager—either an internal employee or an outside consultant—for a minimum of 12 months.
- *The **SEM** initiative*, launched in July 2017, is designed to empower key staff to implement SEM at their facilities through a learn-by-doing training program. Under the original design, NYSERDA established cohorts of peer energy champions who participated in 12 monthly training sessions with a professional energy coach, followed by 12 months of monitoring and technical support. These training sessions included in-person classroom training, online sessions, and on-site workshops. The energy coach and energy champion worked together to determine the steps necessary to implement SEM practices in the facilities. In response to the COVID-19 pandemic, NYSERDA paused the cohort model in the first part of 2020. In July 2020, NYSERDA instead launched two alternative training options: On Demand SEM and Virtual Treasure Hunt.
  - On Demand SEM is a series of online trainings on the same topics as the cohort model, but is more directly oriented to support participants to meet the ISO 50001 energy management standard. Like the cohort model, On Demand SEM includes one-on-one instruction from an energy coach, but all training is conducted online.
  - Virtual Treasure Hunt promotes a popular component of SEM training: a walk-through audit that engages a cross-section of facility staff to identify efficiency opportunities, with virtual support from the energy coach.

The OsEM and SEM initiatives are intended to effect a long-term change in the behavior of participant facilities. Through the initiatives, NYSERDA guides participants to develop and implement the new practices and systems necessary to engage in energy management. NYSERDA anticipates that the process to implement all EMPs, and to begin achieving savings, may not be fully realized until after participants' direct engagement with the initiative has ended. However, once participants have begun EMPs, the cost-savings and competitive benefits should motivate them to continue to identify and implement new energy savings projects on an ongoing basis.

## **1.2. Market Evaluation in the Context of COVID-19**

In early 2020, the coronavirus began to spread rapidly throughout New York, and the world, causing a global pandemic. The New York State Governor issued an executive order on March 20, 2020 that mandated closure of all non-essential businesses, which remained in effect through May 15. Throughout 2020, the ongoing pandemic continued to have a profoundly limiting impact on social and economic activity in the state.

The EMP Market Evaluation Team has worked with NYSERDA to adjust evaluation activities to address the present circumstance. The Team updated research objectives for the Year 4 and Year 5 Market Evaluations to assess the impacts of COVID-19 on the EMP initiative and on the target market. The Team was not required to make changes to the Year 4 research scope or schedule. For the Year 5 Market Evaluation, the Team and NYSERDA will continue to monitor the impact of the pandemic. The Team will reevaluate data collection activities if respondents provide pushback about the appropriateness of fielding a survey or if response rates are notably lower than expected.

## **1.3. Year 4 Research Tasks and Objectives**

In Year 4, the Evaluation Team conducted a process evaluation to assess the effectiveness of the OsEM and SEM initiatives' designs in generating awareness and increasing adoption of the target practices and behaviors. Using the latest CEF Industrial Chapter, initiative documents provided by NYSERDA, NYSERDA staff interviews, and information from past market evaluation research, the Evaluation Team conducted three process evaluation tasks:

- Reviewed the initiative logic model for clarity and completeness
- Assessed the status of all proposed initiative activities, identified changes to the design and delivery, and determined lessons learned since the EMP initiative first launched
- Assessed whether evidence to date validates certain initiative outcomes (limited to outcomes for which evidence was available).

The Team also assessed the impact of COVID-19 on initiative activities generally. The two alternative SEM training options were launched too recently to be evaluated, but the Team included observations on the design and launch of these training components as they related to the EMP initiative as a whole.

In addition to the process evaluation, the Team reviewed energy management programs in other jurisdictions to identify best practices for recruitment and for effecting market transformation. More



details on the Team’s methodology for conducting each activity and analyzing the results is presented in the *Methodology* section of this report.

The Year 5 study will include additional primary data collection and a more thorough assessment of initiative outcomes. NYSERDA will also conduct an impact evaluation to quantify savings generated through the initiative.

## 2. Process Evaluation

---

### 2.1. Logic Model Review

In the CEF Industrial Chapter, NYSERDA presents the market transformation theory underlying the OsEM and SEM initiatives in the form of logic models and testable hypotheses. The OsEM and SEM logic models, included in *Appendix A*, illustrate the linkages from barriers to specific activities, target audiences and outputs, and from activities, audiences, and outputs to the expected near-term and long-term outcomes. The testable hypotheses articulate theorized cause-and-effect linkages between certain activities or short-term outcomes and longer-term market changes.

The Evaluation Team reviewed each logic model to identify any gaps or unclear linkages in the initiative theory. In addition, the Team assessed whether each activity described in the logic model is being implemented and producing expected outputs, whether NYSERDA is engaging all target audiences, and, where information existed, whether available evidence validates expected outcomes.

#### 2.1.1. On-site Energy Manager Logic Model

The OsEM logic model illustrates how funding qualified consultants to serve as energy managers on-site at participant facilities will result in the long-term adoption of EMPs by participants, as well as lead to increased awareness and normalized adoption of energy managers by industrial facilities. The OsEM initiative is intended to serve primarily the largest industrial facilities, where energy savings from realized projects can more than offset the salary for a full or part time OsEM.

#### ***Review of Program Theory***

The logic model clearly illustrates how the initiative intends to address awareness and resource barriers for industrial facilities and how that will lead to increased demand for OsEMs, widespread adoption of EMPs, and ongoing energy and process improvements.

#### ***Activities and Outputs***

Table 1 shows each OsEM activity included in the logic model, grouped into three categories for ease of discussion: outreach and education, energy management activities, and resource development. The table also shows the resources required to implement each activity, the associated outputs, and the implementation status of that activity. The Evaluation Team confirmed that all OsEM activities are currently complete or have been initiated and that they conform to the activity description in the CEF Industrial Chapter. All activities have been fully implemented and will be repeated as staff continue outreach, OsEMs continue to implement scopes of work, and staff continue to produce additional case studies (using participant data and roadmaps) and update the list of consultants.

**Table 1. Implementation Status of On-site Energy Manager Activities and Outputs**

Category	Activity	Necessary Resources	Outputs	Status
Outreach and Education	Conduct outreach to educate industrial customers on the value of an OsEM and to promote participation	Program staff and outreach contractor		Fully implemented, ongoing
Energy Management	Conduct energy assessments of existing conditions and determine baseline and performance scorecard	OsEM staff and initiative funding	<ul style="list-style-type: none"> <li>• Qualified OsEM consultants</li> <li>• Awareness of energy efficiency benefits as they relate to process efficiency</li> <li>• Industrial facilities pair on-site resources with experts in energy efficiency as it relates to process efficiency</li> <li>• Energy efficiency process improvement projects</li> <li>• Quantifiable savings in energy use per unit of production</li> <li>• Viable case studies and value propositions for replication developed</li> <li>• Standard templates, resources, and training materials developed</li> </ul>	Fully implemented, ongoing
	Establish an energy team including staff from various business units			Fully implemented, ongoing
	Conduct energy accounting and analysis and develop performance metrics			Fully implemented, ongoing
	Integrate energy conservation and productivity initiatives into business model			Fully implemented, ongoing
	Review progress reports			Fully implemented, ongoing
Resource Development	Develop case studies and value propositions for replication through best practices workshops			Fully implemented, ongoing
	Develop a roadmap for on-boarding the role			Fully implemented, ongoing
	Create a list of qualified energy-focused process consultants			Fully implemented, ongoing

**Outreach and Education Activities**

**Materials.** The logic model specifies that NYSERDA staff and outreach contractors should conduct outreach and education about the value of both an energy manager (technical outreach) and the OsEM opportunity (recruitment). The materials provided by NYSERDA included five examples of technical presentations and over a dozen recruitment presentations that mention OsEM, demonstrating that slide presentations are a primary medium for NYSERDA outreach. The materials also include one white paper, though it is not clear where the paper was published. The technical materials discuss general topics such as basic concepts behind energy management, how to develop a benefit/cost analysis that includes energy usage costs, and energy management techniques for compressed air systems. One presentation was specific to OsEM and addressed techniques for OsEM to be integrated into the larger operation. While the primary purpose of these materials was educational, most also referenced the NYSERDA programs or directed the audience to contact a NYSERDA representative or visit the NYSERDA website.

The recruitment presentations were generally professional slide decks that followed a semi-standard format: discussion of benefits, review of eligibility requirements, case study or testimonial, and resources

for applying or obtaining more information for each initiative addressed. Presentations that included OsEM typically also reference other industrial programs such as FlexTech, Industrial and Process Efficiency, and Real-Time Energy Management.

Although presentations are a primary recruitment tool, NYSERDA also uses its website, online advertising, targeted direct mail campaigns, flyers and brochures (posted to the website and given as handouts at events), and earned media to promote its industrial programs, including OsEM and SEM.

**Delivery Channels.** In addition to the OsEM and SEM staff, NYSERDA has designated internal outreach staff who conduct outreach and recruitment at a sector level, promoting all relevant programs for a given customer type (such as industrial, commercial, or multifamily). These staff work with the EMP initiative team to develop and deliver presentations that communicate the benefits of NYSERDA programs and explain how organizations can apply. The outreach staff conduct the majority of these presentations, but occasionally EMP initiative staff will present as well.

NYSERDA also has two outreach contractors for the industrial sector, both New York–based engineering firms that have served as outreach contractors since 2010 and have a strong understanding of the programs’ rules and requirements. Both are also well-established in New York, with independent knowledge of the industrial sector in New York and within their own relationship networks. These contractors collaborate with the outreach and initiative staff and to engage with market partners and represent NYSERDA at events, and the outreach contractors also leverage their own deep networks in the industrial sector in New York for direct phone calls, email blasts, and other contact to promote NYSERDA initiatives. According to staff, the outreach contractors are particularly important in generating recruitment leads.

NYSERDA staff and outreach contractors present at conferences, at webinars hosted by partner organizations, and at webinars hosted directly by NYSERDA. The outreach staff lead efforts to reach out to other organizations, such as utilities or trade associations, to establish partnerships and jointly schedule outreach events such as webinars, in-person meetings, or small conferences. NYSERDA representatives have presented at conferences such as the World Energy Engineering Congress and the Association of Energy Engineers annual conference. A few market partners—in particular the New York Business Council, the Manufacturers Association of Central New York, and the Western New York Sustainable Business Roundtable—have hosted events that showcase NYSERDA programs, often as a breakfast meeting (a three to four hour in-person event that starts at 7:30 a.m. and serves breakfast). The OsEM staff reported that the business organizations are better able than NYSERDA staff to target presentations and events to specific roles such as executives or facility staff within customer organizations. NYSERDA has also partnered with most of the investor-owned utilities (IOUs) in New York at least once, delivering presentations to the utility key account managers about NYSERDA programming options. (See the *Audience Engagement* section for more discussion of NYSERDA’s interaction with manufacturing groups and utilities.)

### **Energy Management Activities**

The activities in the OsEM logic model include several EMPs that each energy manager will implement at their facility, including conducting an energy assessment, establishing an energy team, conducting energy accounting and analysis, integrating EMPs into the company’s standard processes, and reviewing progress reports on project implementation. Through a review of example participant scopes of work and the

interviews with the NYSERDA staff, the Evaluation Team determined that all these activities are being performed by each of the 22 contracted OsEM participants (at the time of writing, including current and previous participants). NYSERDA ensures that each OsEM completes all the energy management activities identified in the logic model by incorporating them into each participant's contractual scope of work. Energy managers document the tasks they have completed through detailed quarterly participation reports they submit to NYSERDA project managers. (Note that these participation reports may include information from the progress reports identified in the logic model but are a separate document.)

### **Resource Development Activities**

The final activities identified in the OsEM logic model are developing case studies with value propositions, developing a roadmap to onboard energy managers, and creating a list of qualified energy consultants capable of serving as energy managers. The materials developed through these activities are intended to be disseminated to the market to spread awareness of the benefits of energy managers and promote greater market adoption of this role.

To date, NYSERDA staff have worked with past participants to develop eight OsEM case studies. These case studies are posted on the website and are used as handouts by NYSERDA outreach and staff and by outreach contractors attending in-person meetings, conferences, or events. In several instances, a participant featured in one of the case studies has co-delivered technical or recruitment presentations with NYSERDA staff. NYSERDA OsEM staff also described how case studies facilitate social media outreach: past participants have posted the case studies or included links to the case studies on their website. They then feature these posts on their social media accounts, and NYSERDA's own social media team can "like" or "retweet" these posts to further spread the message. NYSERDA OsEM staff cited the case studies, as well as technical presentations by consultants who have served as energy managers, as the program's primary mechanism for accelerating market transformation.

The onboarding roadmap is a guide for facility management and critical staff to take key steps to integrate a new energy manager into company operations. Each participating energy manager develops a roadmap for their specific facilities, which they use to onboard their replacement once the participation period is complete (or later, as needed). NYSERDA staff include key elements of these roadmaps in participant case studies.

The list of qualified energy consultants helps promote market adoption of EMP generally by making it easier for service providers and facilities to connect. Specifically for OsEM, it is a resource for consultants who are interested in serving as an energy manager and for interested facilities to come together and apply to the OsEM program. NYSERDA's OsEM website currently links to the FlexTech list of consultants to fulfill this activity.

In addition to the three specified resources, the OsEM website includes a template energy management plan, links to utility rebate programs, and links to other NYSERDA industrial programs.

### **Audience Engagement**

Table 2 shows the target audiences for OsEM and whether and by what methods NYSERDA is engaging each audience. To assess engagement, the Team primarily relied on the examples of outreach materials provided by the staff and the staff interviews.

**Table 2. Logic Model Audiences**

Audience		OsEM Status
Multiple industrial decision makers		Engaged through outreach and marketing
Critical staff	Facility and process engineers	Engaged through energy management and project identification as well as implementation activities implemented by OsEM; Some critical staff are engaged by serving as the OsEM
	Production and plant managers	
	Operations and maintenance managers	
	Energy managers	
	C-suite executives	
Energy and process consultants		Engaged through outreach and marketing and by serving as OsEMs
Utility companies		Limited engagement through outreach and marketing
Manufacturing groups		Limited engagement through outreach and marketing

**Multiple industrial decision makers.** The logic model specifies that marketing and outreach should be structured to target staff at varying levels of seniority and with different roles within a facility, since multiple decision makers will ultimately be engaged in implementing EMPs. Based on registration lists for recruitment events, NYSERDA recruitment and technical education events have attracted facility staff and management with a range of roles and responsibilities. For example, at the 2019 Summer Summit conference NYSERDA cohosted with National Grid, 15% of the 130 registrants who self-identified as a customer had a C-suite title, while 45% had a mid-level title (such as manager, director, or coordinator) and 23% had a technical title (such as specialist, analyst, or engineer). While the specific job descriptions associated with a given title can vary widely across companies, this example does suggest that NYSERDA is successfully reaching a wide range of industrial professionals.

**Critical staff.** The OsEM logic model lists “critical staff” as a separate audience from industrial decision makers, and links some activities only to one of these audiences or the other. The intensive documentation for OsEM identifies the individual staff that collaborate with the OsEM as they implement their scope of work. In one quarterly report submitted by a past OsEM participant, 15 different facility staff were identified by name and title as having participated in meetings, equipment analysis, or planning activities over the three-month period.

**Energy and process consultants.** Energy consultants are aware of and respond to NYSERDA outreach and education activities, as evidenced by their attendance at NYSERDA recruitment webinars and events. Consultant staff are frequently engaged as OsEMs through the program. OsEM staff reported that of 25 applications received to date for industrial OsEM since the initial pilot, 16 rely on an outside consultant as the energy manager and one used a hybrid approach (having an outside consultant work closely with the designated internal energy manager).

**Utility companies.** NYSERDA staff and their outreach contractors have met with staff at each of the New York IOUs that contributed to the System Benefits Charge<sup>5</sup> at least once, and have either provided a webinar on applicable NYSERDA programs to key account staff or have received customer referrals from key account managers or utility implementers. However, NYSERDA staff reported that one IOU, National Grid, has been significantly more engaged with the EMP initiative than other utilities. National Grid has co-sponsored several events with NYSERDA staff that were directed at multiple audiences. These events have including multiple webinars promoting NYSERDA programs for key account

<sup>5</sup> <https://www.nyserda.ny.gov/Researchers-and-Policymakers/System-Benefits-Charge>

managers, jointly sponsoring a conference attended by over 130 customers and 173 consultants, and inviting utility energy efficiency staff to observe an SEM participant’s Treasure Hunt workshop.

Staff said National Grid appeared to have a different business culture from the other utilities, and that National Grid staff view NYSEERDA as a natural partner and appreciate that the OsEM and SEM programs led to project lists that facilitate participation in National Grid’s rebate programs. Staff reported that until recently, NYSEERDA and utility programs were not complementary, and the organizations would all compete to claim savings from completed projects. Following recent orders from the State of New York Public Service Commission that encourage NYSEERDA and utilities to work together, such as the order filed on January 16, 2020 in regard to case 18-M-0084, NYSEERDA has directed its staff to no longer view utilities as competitors for savings. This Order removes caps that had previously existed on the amount of savings utilities are able to claim from joint initiatives with NYSEERDA, and gives NYSEERDA and the utilities broad leeway to determine the parameters of any collaborations and how to assign savings achieved through a joint initiative.<sup>6</sup>

**Manufacturing groups.** As noted previously, NYSEERDA is engaging members of regional and statewide manufacturing and business development groups—such as the New York Business Council, the Manufacturers Association of Central New York, and the Western New York Sustainable Business Roundtable—by partnering with them to deliver promotional and technical webinars. However, staff reported that while they and outreach contractors have reached out to different industry-specific trade organizations, they have received little interest. According to staff, industry-specific organizations tend to operate at a national level, so there are fewer opportunities to partner with them to promote state initiatives. NYSEERDA staff did give a presentation at a conference at Clarkson University, sponsored by the Technical Association of the Pulp and Paper Industry, Inc., but said they have not found any other opportunities to partner with the organization.

The Team found that membership lists and news feeds for industry-specific organizations, such as the Plastics Industry Association and the Empire State Forest Products Association, include past EMP participants; however, neither of these groups have partnered with NYSEERDA. A review of the Plastics Industry Association website shows it is a sophisticated, active organization that offers extensive national and international news, policy advocacy, and educational content and hosts numerous conferences, tradeshow, and other events around the country. Many articles and resources on the site addressed environmental policy issues, such as product bans and recyclability requirements, that are negatively impacting plastic manufacturers. The Empire State Forest Products Association, on the other hand, is a New York State organization that supports the forest products industry and claims to have over 400 members. It also provides news and advocacy, and hosts events and trainings. Decarbonization and

---

<sup>6</sup> State of New York Public Service Commission. Issued and effective January 16, 2020. “Case 18-M-0084: Order Authorizing Utility Energy Efficiency and Building Electrification Portfolios through 2025.” [https://www.google.com/url?sa=t&ret=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjzMejjavtAhUHpZ4KHeVYDf4QFjABegQIAxAC&url=http%3A%2F%2Fdocuments.dps.ny.gov%2Fpublic%2FCommon%2FViewDoc.aspx%3FDocReflD%3D%257B06B0FDEC-62EC-4A97-A7D7-7082F71B68B8%257D&usg=AOvVaw3VJKuk76X6ksJNh\\_TRImu](https://www.google.com/url?sa=t&ret=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjzMejjavtAhUHpZ4KHeVYDf4QFjABegQIAxAC&url=http%3A%2F%2Fdocuments.dps.ny.gov%2Fpublic%2FCommon%2FViewDoc.aspx%3FDocReflD%3D%257B06B0FDEC-62EC-4A97-A7D7-7082F71B68B8%257D&usg=AOvVaw3VJKuk76X6ksJNh_TRImu)

industry options for addressing the recent Climate Leadership and Community Protection Act<sup>7</sup> (CLCPA) legislation were two of the leading topics addressed on its website.

### Outcomes

While it was not within the scope of this study to evaluate all the expected outcomes included in the logic model, the research conducted for Year 4 and prior years did provide enough evidence to assess some of the outcomes. Table 3 shows the outcomes assessed in this study and their status.

**Table 3. Status of On-site Energy Manager Near-Term Outcomes**

Near-Term Outcomes	Status
A supply of energy consultants	There is some evidence this is occurring
Demand for OsEMs at industrial and manufacturing sites	<i>Outside Year 4 evaluation scope</i>
Implementation of energy and production efficiency projects that realize a reduced energy usage	There is strong evidence this is occurring
Familiarity with continuous energy improvement principles	<i>Outside Year 4 evaluation scope</i>
Industrial customers meet utility self-direct program compliance	<i>Outside Year 4 evaluation scope</i>
Case studies encourage market adoption	<i>Outside Year 4 evaluation scope</i>
Standardized resources disseminated	There is strong evidence this is occurring

**Supply of consultants.** By maintaining a centralized list of companies providing OsEM and related services, NYSERDA makes it easier for energy consultants to grow their line of business related to energy management. The list is attracting a growing number of consultants - NYSERDA staff reported that the number of registered FlexTech Consultants has grown from 44 to 73 since January 2019. While it was not clear if this increase in registered FlexTech Consultants corresponds to an increase in the total number of qualified service providers in the market, it is evidence that providers are recognizing and responding to NYSERDA’s effort to organize the market.

**Implementation of energy and production efficiency projects.** Although NYSERDA’s impact evaluation of OsEM is scheduled for 2021, there is evidence from several sources indicating that participants are implementing projects and achieving considerable energy savings. Staff said the example of a participant quarterly report they provided to the Evaluation Team was typical across participants. This highly detailed report provided solid evidence that OsEM participants quickly identify and begin to implement numerous energy saving projects; the participant who submitted the example fourth-quarter report had set a combined electricity and natural gas usage reduction target of 5.5% and had already achieved 65% of the electricity component and 169% of the natural gas component of that target. The Year 3 Market Evaluation also provided evidence that participants are achieving savings: four of six interviewed participants said their cost savings from energy projects implemented with the OsEM exceeded their costs to participate, and a fifth interviewee said their company broke even.<sup>8</sup> Finally, staff have published eight case studies indicating that participants realized substantial savings.

---

<sup>7</sup> <https://climate.ny.gov/>

<sup>8</sup> New York State Energy Research and Development Authority (NYSERDA) 2019. “Continuous Energy Improvement Market Evaluation Final Report: Year 3.” Prepared by Cadmus. <https://www.nyserda.ny.gov/-/media/Files/Publications/PPSER/Program-Evaluation/CEI-Market-Evaluation-Yr-3-Report.pdf>



**Standardized resources disseminated.** There is strong evidence that staff and outreach partners are disseminating standardized OsEM resources. To make these resources widely available, NYSERDA posted them to the OsEM webpage. Outreach staff and contractors also reference these materials in outreach and educational activities. The resources include a template for an energy management reporting plan, a quarterly reporting template, and a project summary sheet. The page also features links to four IOUs' rebate programs, other relevant NYSERDA programs, and all eight case studies. Staff reported that NYSERDA outreach staff, outreach contractors, industry partners, and past participants are actively using these case studies as social media posts, handouts, and references. Outreach materials include presentations on EMP concepts that direct the audience to visit the NYSERDA website for more information.

### **2.1.2. Strategic Energy Management Logic Model**

The SEM logic model illustrates how providing training and technical support to facilities interested in implementing SEM will lead to increased market-wide awareness and adoption of energy management. SEM is intended to serve a broader segment of the market than OsEM, including small, medium and large industrial facilities.

#### ***Review of Program Theory***

The SEM logic model is generally cohesive, and linkages represent reasonable relationships and assumptions. The logic model is also generally consistent with the three testable hypotheses presented in the CEF Industrial Chapter.

The program team observed that in some places the SEM program theory and logic model, which were developed at the outset of the initiative, no longer reflect the program team's latest understanding of the market for SEM. In particular, the current program documents place a heavier emphasis on the need for energy and process consultants to help drive market transformation for SEM than implementation experience and recent research have shown to be the case. The documents indicate the limited supply of qualified SEM consultants is a key barrier to SEM adoption, and that more consultants offering SEM services will lead to more facilities adopting SEM. In practice, participants have not indicated they have any appetite for hiring consultants to help them implement SEM, and have had success relying on the NYSERDA training and then on their own staff. In addition, the Year 3 Market Evaluation found that many energy consultants do not have a good understanding of the management aspects of SEM and have not pursued a role as SEM trainers. (This differs from the OsEM initiative, where energy consultants have played a central role.) In line with these findings, the SEM program team continues to conduct outreach hand education on SEM with consultants, but has focused most of their efforts on direct support to end-users.

#### ***Activities and Outputs***

The SEM logic model identifies several outreach, organizational support, training, and resource development activities. Table 4 presents these activities, the resources required to implement each activity, the associated outputs, and the implementation status. Since the logic model has not been updated since the alternative training options were launched, the table relates only to the original cohort training. However, the Evaluation Team included findings related to the alternative training options (On Demand SEM and Virtual Treasure Hunt) as applicable.

**Table 4. Implementation Status of Strategic Energy Management Activities and Outputs**

Activity	Necessary Resources	Outputs	Status
Outreach to educate on the value of SEM and promote participation	Program staff and outreach contractors	<ul style="list-style-type: none"> <li>Data on SEM projects conducted and replicated</li> <li>Data on internal SEM staff trainings and energy project implementation</li> <li>C-suite executives valuing and engaging in SEM</li> <li>Case studies</li> <li>Standard templates, SEM resources, and training materials</li> <li>List of qualified SEM consultants</li> </ul>	Recruitment of new cohorts on pause, outreach about SEM ongoing
Organize cohort training sessions and develop materials	Program staff and implementation contractor		Fully implemented
Lead cohort through SEM training and implementation of SEM activities			Ongoing for active cohorts
Review deliverables from SEM key milestones activities to ensure SEM adoption and energy savings			Ongoing for active cohorts
Organize cohort network to promote peer to peer exchange	Program staff		Pending additional review
Review progress reports on energy and productivity projects	Program staff		Ongoing for active cohorts
Develop case studies and value propositions for replication	Program staff and implementation contractor		Ongoing for active cohorts
Develop and disseminate templates and resources for SEM			In process
Establish and coordinate qualified consultant pool with participants	Program staff		Pending
Develop SEM training programs	Program staff and implementation contractor		Pending

**Outreach and education.** NYSERDA conducts outreach primarily at the sector level (such as industrial or commercial). The main outreach and education activities for both SEM and OsEM are described in the *On-site Energy Manager Logic Model* section, under *Activities and Outputs*.

Specific to SEM, program staff reported that they are in the process of updating the description of the On Demand SEM on the website and in program materials to reference the U.S. Department of Energy (U.S. DOE) ISO 50001 Ready Navigator program. The On Demand SEM training modules are also being co-branded with the U.S. DOE logo. The U.S. DOE program served as the basis for NYSERDA’s On Demand program. Staff expect recruitment for the newly launched On Demand SEM training to benefit from the association with the ISO 50001 and U.S. DOE brands. Both of these organizations are well-known in industry circles nationally and globally.

**Organize cohort sessions and develop training materials/Develop SEM training program.** The SEM implementer, with oversight from NYSERDA staff, completed the initial curriculum development prior to launch of the first cohort. Since then, the implementer has revised the training materials and schedule several times to make small improvements based on implementation experience. Staff reported that one of the more substantial changes to the original curriculum, completed in response to feedback from post-workshop surveys, was to make the workshop content more technical generally and to allocate more time to the energy calculation workshop (extended from a half day to a full day).

Although not mentioned in the logic model, the implementer also developed new training curriculum to support alternative training options, which NYSERDA implemented after COVID-19 required the cohort training model be paused in early 2020.

**Training and SEM Implementation.** The SEM logic model includes three activities related to providing training and organizational support for end users. Since 2017, NYSERDA has conducted or initiated SEM training and technical assistance (leading SEM training and implementation) for five cohorts, consisting of three manufacturing cohorts and two wastewater cohorts. In early 2020, shifted sessions for active cohorts to an online format since the COVID-19 pandemic made on-site and in-person training activities impractical. Since the start of the pandemic, NYSERDA has launched new SEM training options, and does not expect to launch additional cohorts going forward.

**Reviewing deliverables from SEM key milestone activities.** The initiative consists of one year of active training and technical assistance to implement SEM, followed by one year of periodic technical support and monitoring. During the initial year, participants complete periodic deliverables to demonstrate that they reached key milestones in SEM implementation, such as setting facility energy goals, forming and convening an energy team, and other tasks. In addition to the periodic deliverables, participants complete energy management assessments (EMAs) at the beginning of the cohort and again at nine months into the training program. The EMAs ask a series of multiple choice questions, completed by the trainee, then generate a scorecard that informs the trainee of their level of SEM adoption and benchmarks their progress to other similar facilities. By completing formal EMAs twice in the training period, participants can observe their progress. The implementer and NYSERDA staff review the deliverables and the EMAs to monitor how well participants are integrating SEM practices into their organizations and to identify participants who may need additional support. NYSERDA also captures the EMA scores in its tracking data.

**Organizing a peer-to-peer network.** According to the logic model, NYSERDA is directly responsible for organizing the cohort peer-to-peer network. Some peer engagement occurs through the basic training design, during on-site visits to cohort participant's facilities, and during classroom and webinar sessions. In addition, NYSERDA staff had taken some steps to foster a more collegial relationship among cohort members. For example, the staff routinely organized group dinners for individuals traveling to on-site events and staying in the area overnight. EMP initiative staff are also working with other NYSERDA departments to consider options for providing a more structured network for cohort members. Ideas under consideration include establishing a dedicated page on a social media platform such as LinkedIn or hosting half-day cohort "reunions" or networking sessions, potentially overlapping with the final training session for an active cohort. NYSERDA had set aside funding to implement one or more of these activities in 2020 but was not able to move forward due to the COVID-19 shutdowns. Going forward, the team expects to revisit budget allocations and program needs.

**Reviewing project progress reports.** NYSERDA staff collect quarterly updates from participants on energy and process efficiency projects they have implemented as a result of their SEM training. This provides a record of energy savings achieved through the program.

**Develop case studies and value propositions.** NYSERDA staff and the implementation contractor have developed three industrial SEM case studies and one wastewater case study. The industrial case studies are posted on the NYSERDA website and used in outreach activities. The wastewater study was posted

previously and will be available on the updated SEM web pages, currently in development. At least one past SEM participant, featured in a case study, also co-presented a webinar with NYSERDA staff. Staff indicated that these two outreach mechanisms—the case study and the in-person testimonial—seem to reinforce each other. Staff considered the SEM case studies, like the OsEM case studies, to be one of the most critical outputs for both stimulating participation and effecting broader market adoption.

**Develop and disseminate templates and resources for SEM.** The logic model states that the implementer and NYSERDA should develop standardized tools and training resources to help end-users understand and implement SEM on their own. Now that training programs are underway and generating results for participants, NYSERDA is moving forward with this activity. The implementer’s scope of work indicates that the implementer will develop a number of resources including website content, a news feed, a sell sheet directed to end users, an educational video, and specific trainings on topics such as how to foster employee engagement in SEM. Some of the identified resources, such as SEM employee engagement training, exist as part of the training materials in the cohort program. The CEF Industrial Chapter indicates a market dissemination plan is an SEM milestone expected to be completed in 2021. The SEM implementer and NYSERDA’s marketing provider are collaborating to develop and implement this plan.

**Establishing a qualified pool of SEM consultants.** Although the OsEM webpage links to the FlexTech consultants list as qualified OsEM consultants, the SEM page does not reference this resource. The market dissemination plan, to be completed next year, may include this list. However, as noted in the *Review of Program Theory* section, energy consultant SEM trainers are not a key outcome to drive market transformation.

**Audience Engagement**

Table 5 shows the target audiences for the SEM program, identified in the logic model, as well as the Evaluation Team’s assessment of whether NYSERDA has engaged each audience, based on the information available for this report.

**Table 5. Logic Model Audiences**

Audience		SEM Status
Multiple industrial decision makers		Engaged through outreach and marketing
Critical staff	Facility and process engineers	Engaged through outreach and marketing; Engaged as direct recipients of SEM training, or through collaboration with SEM trainee
	Production and plant managers	
	Operations and maintenance managers	
	Energy managers	
	C-suite executives	Engaged through outreach and marketing, as well as indirectly by authorizing facility staff to participate in training
Energy and process consultants		Engaged through outreach and marketing
Utility companies		Limited engagement through outreach and marketing
Manufacturing groups		Limited engagement through outreach and marketing

**Multiple industrial decision makers.** The target audiences for SEM are the same as for the OsEM program. Like OsEM, SEM is engaging all audiences through marketing and outreach activities.

**Critical staff.** The SEM initiative engages with the energy manager directly, by providing that individual with training and technical support. The SEM initiative’s ability to reach other critical staff is not explicitly documented in any of the materials. However, in interviews with the Evaluation Team in Year 3, six of eight previous SEM participants reported adopting practices that required the involvement of various staff in their organization, such as establishing company energy policies and targets, assigning staff to an energy team that has regular meetings, conducting employee education, and reporting on energy efficiency progress to key stakeholders throughout the organization. SEM engages executive staff when they authorize the energy manager to participate, and in the implementation of SEM milestones such as setting company energy targets.

**Energy consultants.** The SEM initiative engages energy consultants through outreach and marketing activities.

**Utility companies and manufacturing groups.** See the *On-site Energy Manager Logic Model* section for a discussion of how NYSERDA is engaging with these audiences.

**Outcomes**

The Team used information from the staff interviews and the Year 3 Market Evaluation to evaluate three SEM outcomes. The remaining SEM outcomes were beyond the scope of this study to assess. Table 6 shows the SEM near-term outcomes and outcome status.

**Table 6. Status of Strategic Energy Management Near-Term Outcomes**

Near-Term Outcomes	Status
Successful implementation of SEM projects resulting in energy and cost savings	There is strong evidence this is occurring
Quantifiable energy intensity reduction	
Case studies encourage market adoption	<i>Outside Year 4 evaluation scope</i>
Standardized SEM resources disseminated to the market	In progress
Peer-to-peer learning	<i>Outside Year 4 evaluation scope</i>
Increased number of qualified SEM consultants	<i>Outside Year 4 evaluation scope</i>

**Implementation of SEM projects resulting in energy and cost savings and Quantifiable energy intensity reduction.** Although the program materials did not include documentation of energy savings by SEM participants, there is ample evidence that participants are implementing projects, observing energy and cost savings, and achieving quantifiable energy intensity reduction. Staff reported several instances of SEM participants implementing retrofits or process improvements. One participant who operates a relatively new facility and expected to achieve little near-term savings actually led its cohort in savings after determining it could shut down an entire refining line that was not necessary. In another example, a participant led a team of several employees on a treasure hunt that identified over 100 compressed air leaks. As the energy manager was logging individual leaks, he found that in most cases, the person who found the leak had taken the initiative to fix it, resulting in immediate energy savings for several operations across the facility. These anecdotal examples are supported by evidence from the Year 3 Market Evaluation, when the Team found that six of eight participants reported maintaining an opportunity register and actively scheduling projects and tracking implementation. As mentioned previously, NYSERDA plans to quantify energy savings from the SEM program in an impact evaluation in 2021.

**Standardized SEM resources.** NYSERDA had previously published some SEM resources, but these were removed as part of temporary updates to the website in response to changes in offerings due to COVID-19. A revised SEM website, currently in development, will include these and additional SEM materials. As discussed in the previous section, developing SEM resources and a corresponding market dissemination plan is scheduled for 2021.

## 2.2. Program Changes and Lessons Learned

After four years of implementation, staff for both the OsEM and the SEM programs have identified significant lessons learned, some of which simply provide a deeper understanding of how end users benefit from the EMP initiative and others that have led to design and implementation changes. The Team documented these learnings and implementation changes and the observable outcomes.

### 2.2.1. On-site Energy Manager

During and immediately following the pilot, NYSERDA implemented several changes to increase participation, make the eligibility requirements more flexible, and make the initiative more effective. Since that time, NYSERDA has left the design relatively unchanged. The COVID-19 shut-down had little impact on the program, other than delays to some participants' projects.

To attract greater participation following the OsEM pilot, NYSERDA extended participation eligibility to include commercial and multifamily participants. This change significantly increased the application rate: NYSERDA only received six applications for the pilot but has since received 67 applications across the three eligible sectors. NYSERDA manages OsEM as a single offering to all three sectors, which allows the organization to realize some economies of scale from the increased participation rate.

The increased participation provided an opportunity for NYSERDA to assign dedicated staff resources to managing OsEM contracts, which provided a more streamlined process for applicants and participants. NYSERDA created two project manager positions for industrial OsEM contracts. These project managers serve as a resource to help participants complete the application properly. Once the participation contract is executed, one of the project managers meets with the OsEM monthly to check on progress. The project managers also review submitted deliverables to ensure that contractual requirements are met. The *On-site Energy Manager Project Manager Guide* documents in detail the standardized process that project managers must follow to review and approve applications and manage active contracts. As another administrative process improvement, NYSERDA developed a data management system using the Build Portal platform to capture and store OsEM participant data, including the contract deliverables, specific projects completed, and energy saved.

NYSERDA also made several small changes to make the design more flexible following the pilot. First, the solicitation is no longer competitive. The competitive pilot solicitation was intended to allow NYSERDA to control the initial pilot size and to select participants who were likely to have a good experience with the OsEM to demonstrate its feasibility (although NYSERDA accepted all six pilot applications received). Now that the initiative is more established, it is operated on an open-enrollment basis. Any applicant who meets the criteria can participate. This reduces risk for the applicants and also makes the application process faster since no committee review is required. Second, the pilot required that

participants use a consultant from a FlexTech partner as the OsEM, and stipulated whether the OsEM was to be full time or half time based on the organization's energy usage. The current rules allow applicants to propose an internal hire, an energy consultant (not required to be in the FlexTech program), or a hybrid of these two approaches. NYSERDA also no longer mandates the OsEM's schedule based on the participant's annual energy spending. OsEMs must dedicate at least 20 hours per week to the role, but facilities can set a range of hours from 20 to 40 per week to suit their needs. According to staff, the majority of OsEMs are full time.

Staff reported that NYSERDA also took steps to allow for the OsEM role to become more established in participant facilities before the contract period ended. One immediate change was to make the contract period of performance more flexible. The pilot initially encouraged a 15-month period of performance (including 12 months of on-site activity), but even for the pilot participants NYSERDA extended this to fit the particular participant's needs. Some contracts have been extended to as long as 24 months to allow the projects to be more advanced and the OsEM role to be more established before the subsidy ends.

Additionally, following the pilot, NYSERDA implemented bonus payments to encourage continued engagement with the OsEM. The bonus payments are an additional \$7,000 annually for two years following the initial 12- to 24-month contract term if the organization reports continued progress on the projects identified during the initial term. Staff reported that, at the time of this evaluation, all eligible participants intend to pursue the bonus payments, but only one is approaching the end of the first bonus year.

### **2.2.2. Strategic Energy Management**

SEM has undergone several changes since its launch to improve recruitment effectiveness, improve training content and suitability, and allow for a broader cross-section of companies to participate. In addition, SEM has experienced significant interruptions due to the pandemic, including having to create entirely new SEM training options.

#### ***Lessons Learned***

**Recruitment.** Staff reported that recruitment continues to be the biggest implementation challenge for the program, but also described several steps NYSERDA has taken to improve recruitment efforts.

Recruitment for SEM seems to work best as a multi-touch approach, in which companies have several opportunities to be exposed to the initiative and research its benefits. Staff also noted how important it is to engage the right messenger, which she observed when she started including the implementer in her conversations with the outreach contractors. When the outreach contractors could talk directly to the implementer, who has a similar professional background, they became much more engaged and asked more questions. Similarly, when staff receive inquiries from potential participants, she directs them to the implementer as quickly as possible. The implementer has a deeper background in SEM and can draw on their experiences offering similar programs in other regions to answer participant questions.

In addition, staff noted that they have learned how to screen facilities that are not good candidates for SEM early in the process. For example, facilities need about a 24-month baseline as the foundation to set energy targets and monitor for improvements. Facilities are not good candidates if they have recently been retrofitted or recommissioned their equipment, installed new equipment, or significantly altered their production process in any way. Recruitment staff now know to ask questions up front about recent equipment upgrades or retrofits and changes to production processes.

**Peer-to-peer learning.** Staff observed some mixed signals regarding the importance of peer-to-peer sharing among manufacturing cohorts. Although participants reported that the interaction with peers was one of the most beneficial aspects, few participants appeared to actually take advantage of networking opportunities. Staff considered that the value participants received from the cohort model was awareness that energy issues in their facilities are not the fault of any individual, but instead are common and systemic issues across industry. This awareness gave participants more confidence and helped them adopt a more systematic approach to addressing issues they had been aware of for some time. But manufacturing peers in different industries have very different technical problems, and peers in the same industry are prohibited from sharing too much to avoid giving away any company secrets. Staff did not observe that manufacturing participants want additional time or resources dedicated to peer exchange.

However, wastewater cohorts actively and openly shared their experiences and appeared more interested in soliciting feedback from peers. Based on observing the robustness of peer sharing among the wastewater cohorts, and the relatively minimal peer-to-peer engagement among the manufacturing cohorts, NYSERDA is reviewing whether and how to move forward with additional activities to enhance peer-to-peer exchange when it restarts the cohort program.

### ***Delivery Changes***

NYSERDA has also implemented several changes to make the cohort SEM model fit better with participant needs. As discussed earlier, the original workshop content has gone through several iterations. According to staff, two of the more substantial changes to the original program, completed in response to feedback from post-workshop surveys, were to make the workshop content more technical and to allocate more time to the energy calculation workshop (extended from a half day to a full day).

Staff also indicated that in the second year of implementation, the implementer switched from using a proprietary EMA tool to measure and monitor participant SEM adoption to using an open-source tool maintained by NEEA. This EMA tool offered at least two advantages: (1) it is available online, making it easy for participants to use on their own, as many times as they like, and (2) it has an attractive, easy-to-read summary sheet that gives participants their assessment results and benchmarks those results against similar facilities. NYSERDA captures an official assessment at the beginning of training and captures a second assessment at the nine-month mark to record participant progress.

Finally, based on the applicability of the design to the wastewater industry, NYSERDA opened the initiative to wastewater facilities in 2019. Wastewater participants were very engaged with the material and reported high satisfaction. Given the success of the first cohort, NYSERDA launched a second wastewater cohort in January 2020. Staff observed that the wastewater cohorts demonstrated several differences from the manufacturing cohorts: the cohorts were restricted to wastewater facilities only, so all participants are operating in similar environments and have similar technical issues. Also, the peer-to-peer aspect of the SEM trainings was more robust among the wastewater cohort. This was partially due to the common experience of all cohort participants, and partially to the fact that these facilities are municipal agencies rather than competitive private-industry actors, and thus have no competitiveness constraints. There are also differences in implementing SEM between manufacturing cohorts and wastewater cohorts, including that wastewater facilities deal with significantly more external stakeholders and have a slower and more bureaucratic budgeting process.



### **Expanded Training Options**

In response to the COVID-19 shutdowns across the state, NYSERDA paused active recruitment for future cohorts and moved the existing cohorts to virtual delivery. In addition, by July 2020, NYSERDA and the SEM implementer were able to develop and launch two alternative SEM training options offered entirely online – On Demand SEM and the Virtual Treasure Hunt.

Staff described the On Demand SEM option as an enhanced version of the original training. On Demand SEM is based on the U.S. DOE’s 50001 Ready Navigator, a program designed to help facilities implement the ISO’s 50001 energy management standard. ISO (formerly the International Organization for Standardization, in English) offers several management programs to help organizations operate more effectively across a broad range of objectives. The ISO 50001 standard is focused on energy management. Organizations may implement management to the standard for its own sake or may pursue third-party certification to the ISO 50001 standard in order to demonstrate their commitment to sustainable energy practices to outside stakeholders.

NYSERDA used the U.S. DOE’s 50001 Ready Navigator as the core content for its On Demand SEM option. This training is more structured than the original SEM content, and designed to align with the steps necessary for ISO 50001 certification. For example, each module’s content is mapped to the requirements of ISO 50001 to help facilities keep track of what they have completed. Staff noted some trade-offs between the original cohort design and the On Demand option. While the On Demand option lacks the on-site technical support and peer-to-peer exchange available from the original model, it allows participants to control their own pace, and does not require time-intensive travel to attend trainings.

Virtual Treasure Hunt is a less intensive training option focused on the walk-through audit as a tool to engage multiple staff, identify energy saving opportunities, and demonstrate how considering energy usage in routine practices such as adjusting equipment settings, managing air leaks, etc., can deliver ongoing energy savings. The Year 3 Market Evaluation participant interviews revealed that the Treasure Hunt was one of the most popular aspects of the SEM curriculum. This finding also reflects a finding from the 2019 Industrial Market Insights study, that a scaled-down version of SEM could have a value proposition for smaller firms. Smaller firms do not use enough energy for incremental energy savings to offset the cost of full SEM implementation, but less intensive training and management practices could result in ongoing energy savings at a meaningful level.<sup>9</sup> The Virtual Treasure Hunt provides a pathway for smaller firms to get exposure to continuous energy improvement concepts, with a greatly reduced cost in terms of staff time and with a clear, immediate benefit.

---

<sup>9</sup> New York State Energy Research and Development Authority (NYSERDA) 2019. “Industrial Market Insights: Continuous Energy Improvement.” Prepared by Cadmus.

## 3. Program Review Results: Recruitment and Market Transformation Strategies

---

The Evaluation Team reviewed secondary materials and interviewed program managers of four well-known energy management programs across North America to identify best practices for outreach activities to support recruitment and market transformation:

- Efficiency Vermont (Continuous Energy Improvement)
- Northwest Energy Efficiency Alliance (SEM program)
- Energy Trust of Oregon (SEM program)
- A Midwest Organization (Energy Manager Non-Incented Measures and other SEM programs)

Additionally, the Team researched strategies that drove market transformation. As applicable and available, the Team also documented key program features or market characteristics that may affect the success of applying similar strategies in New York. This includes understanding if the program was run by a utility or a third-party and whether the program was providing monetary incentives or subsidies.

A short summary of each program can be found in the *Methodology* section.

### 3.1. Key Recruitment Strategies

A primary objective of the program review was to identify best practices for recruitment based on methods that other mature energy management programs around the country have employed.

#### 3.1.1. Trusted Messengers (Key Partners)

All sources indicated that using trusted messengers to communicate with potential participants was a critical part of energy management program recruitment. The Evaluation Team identified several approaches for identifying effective recruitment partners.

**Leverage internal relationships.** As noted in a 2019 review of SEM best practices, and confirmed by all program managers, the most effective recruitment strategy was to leverage existing relationships between the program representative and potential participant.<sup>10</sup> Interviewed program managers elaborated that if their organization already had a relationship with a potential participant, it was possible to overcome many initial recruitment barriers. For example, if a program representative is already familiar with a facility, they can assess whether the facility is a good fit for SEM before they even reach out, they may already know the appropriate person to talk to, and they may have already established trust with the facility staff, increasing the chances for that staff to be interested in the program. Where a relationship already exists, the recruitment conversation becomes less about a program manager trying to “sell a

---

<sup>10</sup> Conlan, Jim, Allison Grinczel, Tom Hovde, Chuck Peterson, Doug O’Donnell, and Snohomish County Public Utility District. 2019. “Strategic Energy Management Cohorts: Wastewater Treatment and Manufacturing Customer Engagement and Collaboration.” Presented at the American Council for an Energy-Efficient Economy 2019 Summer Study, Portland, Oregon, August 12-14. <https://2019aceee.conferencespot.org/#/paper/event-data/f015>

product” to a company and more about providing potential participants with information that their peers found valuable and motivating.

**Partner with utilities.** Program managers also found that utilities were beneficial partners, especially if the utility key account managers had established relationships with large industrial customers, who are typically most likely to benefit from an energy management program. Even where the utility does not use key account managers, having utilities as additional proponents of the benefits of energy management can increase the validity of a program outreach, and utility program staff may have a better understanding of the market and can help create a recruitment list or assist with potential participant segmentation.

Interviewees and researchers reported that it may be difficult for a nonutility program administrator to establish a partnership with utilities if both entities want to claim savings that are achieved through the program.<sup>11</sup> However, even in these cases, utilities can be recruited as program partners if the program administrator can assure them of the benefits to them as well as to their customers. First, interviewed program managers said facilities that participate in energy management programs are more likely to continue making energy efficiency upgrades and to participate in other energy efficiency programs.<sup>12</sup> This means that by partnering with a third-party for SEM (assuming the utility does not already have a SEM program), the utility may expect some positive spillover and uptick in participation in their other programs. Additional options include designing reciprocal programs, where two entities enter an agreement to promote each other’s programs to their own participants, and designing jointly funded programs, where two entities enter an agreement to design, promote, and manage one program. Sometimes these options are implemented most effectively when a neutral third party helps orchestrate the agreement instead of having a negotiation between multiple program administrators.

**Partner with trade associations.** Program managers also reported that trade associations can be very effective recruitment partners, although, like utilities, some program managers initially had difficulty convincing local trade associations to support the program. Members trust the trade association and expect the association to present them with new opportunities to keep their facility updated with new trends in the market. Like utility key account managers, trade associations often have a member database with contact information and key characteristics that implementers can use to target facilities that are more likely to be a good fit for the program. The NEEA program manager reported that recruitment for NEEA’s SEM program was much easier after trade associations agreed to support the program. The NEEA program manager also noted that they had the most success with one trade association that had its own energy conservation goals, which gave it a reason to keep promoting the SEM program even without direct support from NEEA. (It was not clear why this trade association was motivated to set its own energy targets, and this is likely not a common scenario.)

---

<sup>11</sup> Rogers, Ethan A., and U.S. Department of Energy. 2019. “Challenges and Opportunities of Multi-Utility Strategic Energy Management Programs.” Presented at the American Council for an Energy-Efficient Economy 2019 Summer Study, Portland, Oregon, August 12-14. <https://2019aceee.conferencespot.org/#/paper/event-data/f033>

<sup>12</sup> Neiman, Lucy, and Bryn Samuel. 2019. “Beyond Incentives: Market Transformation Strategies for the Path Forward.” Presented at the American Council for an Energy-Efficient Economy 2019 Summer Study, Portland, Oregon, August 12-14. <https://2019aceee.conferencespot.org/#/paper/event-data/f007>

**Hire an implementer to manage relationships with participants.** In some cases it may not be possible to access a key account manager who already has a relationship with a potential participant, particularly if the local utility does not have a such a system in place. For these cases, the Energy Trust of Oregon and Midwest Organization program managers successfully created relationship management systems by hiring an implementer. Most commonly, these relationship managers work closely with a few regional facilities. This single contact allows a relationship manager to earn the trust of the facility they represent and can promote deeper engagement since they have familiarity with the specific needs at each facility. These deeper relationships can lead to higher participant satisfaction.

Energy Trust of Oregon started with two implementers, since that was the existing infrastructure for its suite of industrial programs. One was in charge of recruitment and the other was in charge of managing the actual SEM program participation, leading to a disconnect between the goals of each individual implementer. When the Energy Trust of Oregon restructured they only contracted with one SEM implementer, who then took care of both recruitment and managing participation. The Energy Trust of Oregon program manager said this boosted participant satisfaction since it created a smoother process for the customer (with the same person recruiting them as managing their participation) and said their implementer was more motivated to reach not just a participation goal, but also a savings goal.

### **3.1.2. Communication Channels**

In addition to identifying key strategic partners, interviewed program managers described methods they employed to communicate information about their program to potential participants. The communication channels described below can be used in tandem and can be supported by key partners and trusted messengers: presenting at conferences, hosting informal presentations for small groups of individuals (lunch and learns), and completing individual facility visits, as well as providing case study materials at these events.

**Presentations at conferences.** All program managers mentioned that they, or stakeholders acting on behalf of the program (such as trade associations, implementers, or even past participants), presented about the SEM program at conferences. In addition to energy sector conferences such as the annual conference held by the American Council for an Energy-Efficient Economy, NEEA's program manager presented at industry-specific conferences in markets they were recruiting. Though presentations may not answer specific questions from all attendees, they have the advantage of reaching a wider and more diverse audience.

**Lunch and learns.** Lunch and learns are a type of informal presentation given to a smaller group of potential participants. While most program managers alluded to implementing this method in some form, Efficiency Vermont's program manager said it was the key to continually recruiting participants. They indicated that while sometimes they or their implementer would give presentations, they also would try and get previous participants to attend and provide their perspective and experience with the program. These informal gatherings facilitate more of a conversation between potential participants and stakeholders than a simple presentation. The Efficiency Vermont and Energy Trust of Oregon program managers also noted that getting potential participants in the same room together sometimes starts a rapport between them and results not only in more program interest, but also can lead to participants engaging with each other outside of activities, creating deeper engagement with SEM.

**Individual facility visits.** Though potentially not as efficient as activities with multiple potential participants in a room at once, individual facility visits can be effective. Usually these are conducted by the program manager or their third-party implementer rather than other stakeholders. Individual facility visits allow for exploring the area(s) the potential participant would be improving. It lends itself to refining the messaging for a particular potential participant, allowing the recruiter to better exemplify why SEM would be beneficial for that specific facility.

**Case study materials.** Program managers spoke about supporting materials they might use at presentations, lunch and learns, or facility visits. One option that stood out was case studies: while not necessarily effective when just posted online, when provided in conjunction with targeted communication channels as described above, showing proven savings from previous participants can be very persuasive (particularly if the case study is related to the facility of interest in some way). Case studies that exemplify cost savings are more universally appealing, but the inclusion of any other benefits—such as being more competitive in the marketplace—can be particularly effective at recruiting participants who want to improve their facility operations overall.

### 3.1.3. Messaging

Regardless of the recruitment approach, program administrators need to provide relevant and persuasive information. Program administrators can follow several approaches to ensure that decisions are made and implemented: conduct robust customer segmentation (which can help explain which value propositions of SEM will be most useful for a particular audience within a potential participant facility), focus on transparent messages and tools to help a facility know if they are well-suited for SEM, and connect with the appropriate people at the potential facility to ensure that changes needed for improving energy management can be made and implemented.

**In-depth customer segmentation and clustering.** Efficiency Vermont’s and Energy Trust of Oregon’s program managers emphasized that by creating a segmentation and clustering plan, they were better able to reach appropriate customers using effective messaging. According to the Northwest Industrial Strategic Energy Management Collaborative (NISEMC), developing segmentation techniques that are based on more than energy consumption and industry type can make recruitment efforts more efficient.<sup>13</sup>

Segmenting by energy consumption (or size) is typically a good place to start, but it is just as important to understand *who the customers are, how they use energy, what they want, and how they think*. This information can be used to create customer segments. Table 7. shows an example of this segmentation from a guide published by the NISEMC. By creating the segments of *business leaders, cost cutters, premium pragmatists, process differentiators, and traditionalists*, it is possible to gain a deeper understanding of the business practices and policies of a potential participant. This allows for adjusting the value propositions of SEM to best fit the potential participant’s views and for helping them realize how SEM can fit into their established business model. For example, a *business leader* is interested in being able to continually improve their business systems, so this customer segment may appreciate the

---

<sup>13</sup> Northwest Industrial Strategic Energy Management Collaborative. March 5, 2015. “DIY Guide to SEM Customer Segmentation.” <https://conduitnw.org/Pages/File.aspx?rid=2652>

strategic aspect of an SEM program. However, for a *cost cutter*, the bottom line is about how much money they are going to save by participating in SEM.

**Table 7. Strategic Energy Management Marketing Segments and Characteristics**

Customer Segment	Business Practices and Policies
Business Leaders	Politically and socially progressive Engaged leadership Strategic, long-term planners Strong management and business processes Strong results (“doers” as well as “thinkers”) Early adopters
Cost Cutters	Mature stage of business cycle Need to improve margins Focused on cost savings May have other business drivers (supply chain or regulatory)
Premium Pragmatists	Early or steady growth stage of business cycle Have good margins Able to invest in programs that help the business Looking for market differentiation Willing to make changes Process-oriented thinkers
Process Differentiators	Process-focused thinkers Sophisticated management and manufacturing processes Drive continuous improvement throughout own companies Influence improvements up and down the supply chain
Traditionalists	Risk adverse Resistant to change Initiative fatigue Suspicious of “green” initiatives Established return on investment methodologies

Source: Northwest Industrial Strategic Energy Management Collaborative. December 2014. *NW Strategic Energy Management: Guide to SEM Customer Segmentation*.

Energy Trust of Oregon’s program manager described how their program was planning to apply this kind of in-depth segmentation to recruitment for their program. At the beginning of the program, Energy Trust of Oregon relied mainly on the relationships between their third-party implementer and potential participants. However, they created a more sophisticated outreach approach over time. The program staff identified value propositions for energy management that reflected the perspective of each segment from the NISEMC guide, then developed a set of outreach materials that could be adapted for individual customers. These materials included a readiness guide that described the types of facilities most likely to benefit from the program and a sell sheet that presented a business case for participation. Energy Trust of Oregon developed a formula to estimate the return on investment for a particular customer’s time commitment to SEM, which could be added to the sell sheet (as a customized version). These tools allowed the program staff to recruit participants more efficiently.

**Transparency and determining readiness.** Interviewed program managers emphasized that when presenting the benefits of SEM, transparency is key. Energy Trust of Oregon’s program manager said they developed a tool that allowed them to quickly generate a business case for a potential participant. These covered the exact value propositions of SEM including time investment required and the expected return on investment for participating. All interviewed program managers explained that potential

participants should have a very clear understanding of not only what benefits they can expect from their SEM program participation, but also of the commitments needed on their end. In particular, since *time* is typically the key resource that must be committed to SEM, participants should understand how much time they will need to commit and what they will be doing during that time.

In addition to having a well-segmented customer population, the Efficiency Vermont and Energy Trust of Oregon program managers emphasized the importance of readiness guides they had developed for their programs. These readiness guides helped with recruitment by easing the process of identifying what facilities would be a good fit for SEM. This enabled program staff to have strategic conversations with potential participants, even those who might not yet be ready for SEM. For example, Efficiency Vermont's program manager explained that for a facility that was not quite ready for SEM, the readiness guide identified that the facility would need to install meters to establish a reliable baseline in order to participate in the future.

**Speaking with the appropriate person.** It is key to find out who has the power to make the decision to participate and who is knowledgeable about the facility energy use. Without existing relationships to leverage, finding the appropriate person at a potential facility might require trial and error (as not all titles across different companies mean the same thing; for example, a *facility manager* might be the best contact at one facility, but not at another).

The NEEA and Midwest Organization program managers cited that a motivating factor to participate for individuals (regardless of title) was the fact they would receive some sort of award or recognition for completing the SEM program. NEEA's program manager noted that many facility managers are not noticed or awarded for their work, so this type of recognition could be unique in its appeal. While the interviewees did not note a best award or recognition, they suggested certificates that can be hung in a facility and banners at conferences that highlight successful participants.

Overall, successful outreach relies on understanding who the potential participant is and their perspective. The treatment of cohorts in different programs provides a good example of how important it is to understand the customer perspective when developing outreach materials. Some programs tried to implement single industry cohorts so that participants would have more in common. Efficiency Vermont reported that this approach worked well because they targeted non-competitive industries, especially hospitals. For these sectors, the value proposition of the program, and one of the program selling points, was the opportunity for peer-to-peer engagement.

Energy Trust of Oregon had a different experience. It experimented with single-sector and general (non-specific) cohorts and found that the general model worked best. While some industries—including wastewater and flour milling—seemed to really enjoy sharing detailed facility information, most other industries did not. For most industries, the prospect of having to share sensitive information with competitors became a potential barrier to participation. To address this, Energy Trust of Oregon no longer promotes single-industry cohorts, incorporated a non-disclosure agreement in the participation contract, and emphasizes in outreach that participants will not be required to share sensitive facility information.

## 3.2. Strategies to Promote Market Transformation

Beyond directly supporting participants, NYSERDA has a long-term goal of achieving market transformation. Market transformation occurs when a third-party like NYSERDA can stop offering energy management programs, yet market actors continue to adopt and promote EMPs. Outreach and education are important program components to support market transformation, as well as to drive direct program participation. The Evaluation Team asked program managers what outreach and education (or other techniques) they use to promote market transformation.

The Efficiency Vermont, Energy Trust of Oregon, and the Midwest Organization program managers indicated that while market transformation is not an explicit program goal, they believe market transformation is occurring naturally as a result of their programs. The Midwest Organization program manager said that since the inception of their program, they have seen increased demand for energy managers in the job market in their region.

In contrast, NEEA's program manager considered that its program had successfully transformed the market, which was the primary program goal. For NEEA, market transformation meant establishing infrastructure for other organizations, such as utilities, to be able to create and implement their own programs without NEEA assistance. As a third-party entity, separate from any utility or trade association, NEEA's approach at the beginning of the process was to form a SEM collaborative by creating a cohort of active players in their region. The single most important strategy NEEA's program manager identified was getting different stakeholders in one room and at one table together, particularly trade associations and utilities: this allowed each person to feel heard. They could lay out their concerns and ideas and get reactions from other stakeholders. Not only was it useful to have multiple perspectives when discussing an SEM program and the regional collaborative, this process created relationships between participating entities that may not have previously existed. This allowed all parties to better understand each other's perspectives and needs, which ultimately led to a collaborative that worked best for everyone and not just one entity. With such an inclusive design process, even after NEEA stepped away, these utilities and trade associations were already familiar with working together and could continue to expand that relationship to engage additional utilities, trade associations, and even potential participants directly.

Another key strategy mentioned by NEEA's program manager was establishing the perception of SEM as a continuum. For smaller companies or companies with less resource flexibility to participate in a full SEM program, having a guide ready with a list of activities that are easier and cheaper to implement can get these companies engaged in a minimum SEM program. From there, the company can choose to further engage or come back to SEM when they are able. Increasing the number of entry points for different companies that might be unable to commit to a full SEM program promotes market transformation not only because the number of companies adopting SEM increases, but also because it results in an SEM maturity curve. When a company adopts a minimum SEM, they are more likely to come back and adopt more and more SEM practices over time, allowing SEM to permeate and grow within a company and around the region at the same time.

NEEA continues these strategies today through a unified platform for the regional SEM stakeholders and programs. By having one place (in this case, a publicly available website) where all stakeholders can post



case studies and helpful materials and can contact other professionals involved in SEM, newcomers and experts alike can come together to improve SEM and increase the value it provides to facilities.

## 4. Key Findings and Recommendations

---

### 4.1. Finding 1

**Early outcomes from the first four years of initiative activity indicate that OsEM and SEM are operating largely in alignment with their respective logic models, and are well-positioned to increase their focus on market dissemination.** Participation in the OsEM and SEM initiatives has demonstrated that the initiatives have value for end users and that initiative activities have effectively led participants to implement energy management during and after their initiative engagement. This energy management activity in turn has resulted in project implementation and energy usage reduction (based on staff observations, the progress reports from OsEM participants, and interviews with OsEM and SEM participants). Staff have created case studies for both initiatives, based on participant experiences, and integrated these case studies into outreach and education activities. Some OsEM and SEM standardized tools and educational resources are already being disseminated through outreach and education activities, and staff plan to provide more of these resources in the coming year.

While the overall program strategy has not changed, over the four years of implementation, the program team has deepened their understanding of the target market and used that information to continuously refine and improve the initiative design and delivery systems. NYSERDA continues to recruit new participants as well as an increasing pool of supply side and other market actor partners. As reported in the Year 3 evaluation, participants report high levels of satisfaction with the program, and a high rate of continued EMP activity even after the direct program engagement ends.

#### 4.1.1. Recommendation 1

**At this point in the implementation, take the opportunity to review and update the program theory and logic model and incorporate new understanding.** In particular, review the role of energy and process consultants in achieving market transformation for the SEM target markets. Based on implementation experience and market research, NYSERDA staff have de-emphasized the role of energy and process consultants in driving SEM adoption, and instead focused on developing a more varied set of training options that accommodate smaller firms and offer end-users more choice and convenience.

Documenting the reasons for this shift will help the program team sustain their long-term focus on market transformation and communicate their approach to other stakeholders. In the near term, revise the logic model barriers and outcomes that reference SEM qualified service providers to instead reference SEM training resources, and remove the list of SEM qualified providers as an output. Longer term, update the initiative background and program theory in the next iteration of the CEF Industrial Chapter to reflect an updated understanding of the resources end-users need to implement and sustain SEM.

### 4.2. Finding 2

**NYSERDA is already implementing many of the outreach best practices observed in other programs, but there may be opportunities to further expand partnerships with key market actors to support both recruiting and market transformation.** Program managers from other jurisdictions indicated that recruiting participants for energy management programs requires working through a diverse set of trusted messengers, using communication channels that facilitate presenting complex information,

clearly communicating both benefits and the intensive time and financial commitments required from participants, and conducting early screening to ensure that potential participants are a good fit for SEM. NYSERDA is already employing all of these practices, and continues to identify new opportunities to collaborate with long-term marketing partners on presentations and conferences that attract a diverse audience. NYSERDA currently works with several market partners in New York to conduct outreach about NYSERDA opportunities. NYSERDA staff and subcontractors have developed promotional and educational resources, delivered through conferences and other events, that facilitate delivering complex information about benefits and requirements and directly engaging with potential participants to answer their questions. NYSERDA staff also reported that NYSERDA has developed screening criteria to identify good candidates for SEM and trained outreach staff to ask these screening questions early. Recruitment efforts have been effective, in that OsEM has exceeded its participation targets for the past year and expects to do so again in Year 4, and SEM had sufficient interest to launch five cohorts before having to pause the program.

At the same time, NYSERDA staff reported that recruitment is still a challenge. And while NYSERDA has a robust partnership with National Grid and several regional trade organizations, other utilities and trade groups have not engaged at the same level with NYSERDA's EMP initiatives.

#### **4.2.1. Recommendation 2**

**Continue to reach out to utility staff at National Grid and the other New York IOUs to explore opportunities to develop formal program partnerships.** The program review confirms that utilities are among the best-positioned actors to support scaled-up outreach and education about the benefits of energy management.

The New York regulatory and policy environment related to energy conservation and electrification continues to change at a rapid pace, which may also increase utility interest in SEM and OsEM going forward. The State of New York Public Service Commission Order from January 2020 took steps to remove a significant obstacle to collaboration between NYSERDA and utilities, by allowing the organizations to work together to themselves determine how they could partner to improve market outcomes and increase savings. In particular, the Order makes greater collaboration possible by allowing the organizations to determine how they would allocate savings resulting from that partnership between the utility and NYSERDA, and by removing the cap that previously existed for savings utilities could claim from NYSERDA-led programs.

If staff are not already doing so, they should expand the utility contacts they are in touch with to include commercial and industrial program managers at each IOU, and at utility prime implementers, to discuss how NYSERDA and utility programs could better coordinate, or offer complementary programs. NYSERDA should continue to share updates about participation in SEM and OsEM, including the specific companies participating in OsEM and SEM (many of which are household names and multi-national organizations), and the number and variety of individual projects that participants have completed. IOUs often struggle to get participants to use their programs for more than a single project, or to achieve deep energy savings. OsEM participants appear to do both of these things, and NYSERDA has detailed records on these projects and the reported energy savings.

From NYSERDA's perspective, the IOU programs may be ideal vehicles to help customers work through the decision to commit to an intensive program such as OsEM or SEM. For example, ConEd's rebate

programs for commercial and industrial customers are all based on an initial walkthrough audit. If the auditors (some of which are the implementer or their subcontractors) are trained on the benefits of the EMP programs, they can advise customers on their total energy efficiency potential and whether they might benefit from OsEM or SEM.

#### **4.2.2. Recommendation 3**

**Contact prior and current participants in OsEM and SEM to understand what industry specific trade organizations, if any, exist in New York that could be effective outreach partners.** NYSERDA staff may be able to identify New York-focused trade associations that might be interested in partnering with NYSERDA through conversations with their current and past participants. Participants are likely to have a good understanding of what organizations exist, how active they are, and how well their typical activities would overlap with supporting NYSERDA outreach. NYSERDA should also involve participants when reaching out to trade associations, since program managers from other jurisdictions reported trade associations can initially be difficult partners to recruit. Involving a past participant that is also a member will immediately demonstrate to the organization that energy management is potentially of interest to their members.

Staff should also continue to reach out to national associations. While these groups would not likely be interested in promoting the NYSERDA program specifically, the concept of energy management is universally relevant. NYSERDA has a growing set of persuasive case studies reflecting a wide range of industries, as well as other hard data, resources and tools that could be valuable to an association interested providing education about energy management as a service to its members.

## 5. Methodology

---

### 5.1. Process Evaluation

The Team used materials, staff interviews, and research the Evaluation Team has conducted in previous years to inform a review of the activities, audiences, and outcomes identified in the logic models. The Team assessed to what extent the programs had fully implemented all identified activities and engaged with all audiences, and where gaps existed. The Team also considered what evidence was available to assess whether the activities were likely to produce the expected outcomes.

#### 5.1.1. Materials Review

To provide a solid understanding of implementation and evidence of outcomes, the Evaluation Team requested several materials:

- Examples of participant progress reports, EMAs, and other records of participant activity
- Contracts, operations or process manuals, or other documents used to define roles and responsibilities among the program team and implementers
- Examples of resources provided to end users, such as standard templates, decision-making roadmaps, or other general tools or resources (if available)
- Examples of marketing materials, promotional presentations, or technical presentations used to recruit participants or disseminate energy management technical practices

In response, staff submitted 73 separate files, in addition to content posted on NYSERDA's website.

#### 5.1.2. Staff Interviews

The Evaluation Team conducted in-depth interviews with OsEM and SEM staff to discuss the initiative status, including the drivers and outcomes of any changes made to the design or proposed activities and lessons learned to date about the market transformation theory or implementation, or about the target market. The Evaluation Team developed a detailed guide for each interview based on an initial review of the latest CEF Industrial Chapter and logic models and the materials provided by staff. A copy of the interview guide is included in *Appendix B*.

### 5.2. Program Review

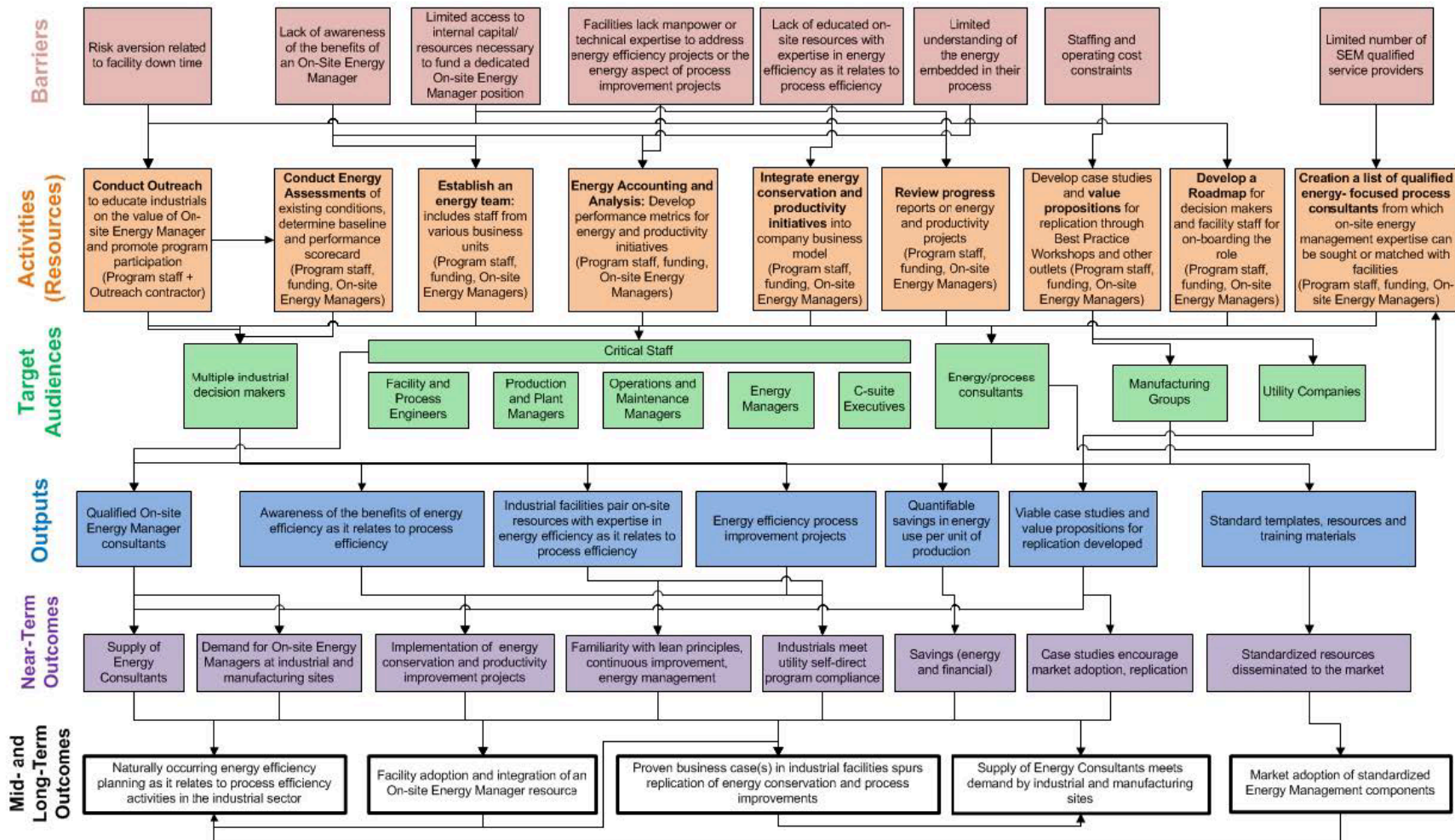
First the Team reviewed a small group of papers about SEM and recruitment strategies, from sources like recent American Council for an Energy-Efficient Economy's Summer Studies. Then the Team searched the internet for known SEM programs across North America to see what kind of information was readily available online and to narrow down what programs would be beneficial to explore deeper. Of those programs, the Team chose four for interviews that either had known market transformation goals or were mature and had successful recruitment. Reaching out via email, the Evaluation Team interviewed five program managers (one program had two interviewees), asking for details about their experience with SEM recruitment, challenges they faced and how they overcame those challenges, and their market transformation expectations from the program.

Below is a short summary of the four programs:

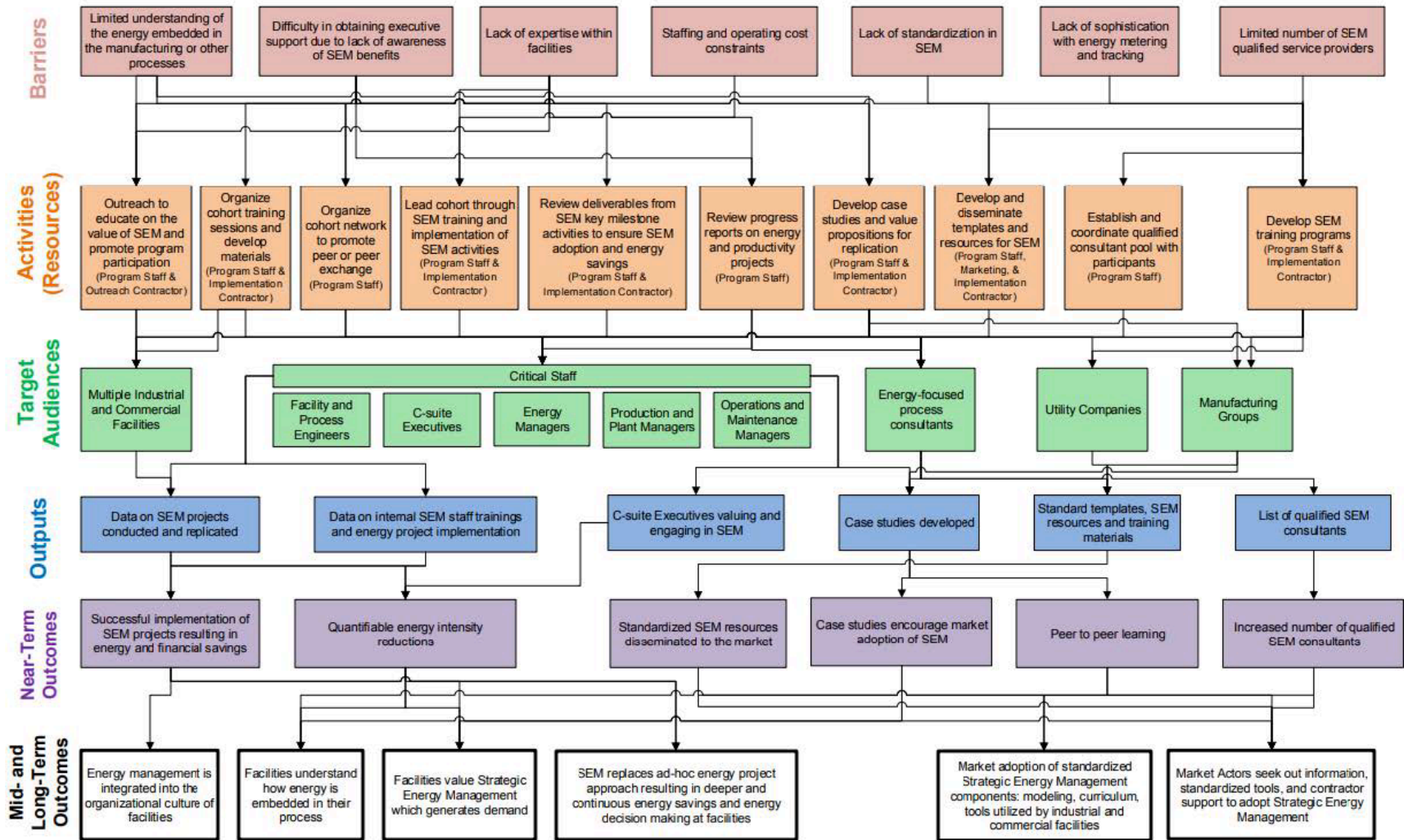
- **Efficiency Vermont's continuous energy improvement program:** Through this program, in operation since 2013, Efficiency Vermont engages large commercial and industrial companies in SEM practices by providing an account manager, who helps the company implement SEM best practices and who facilitates communication between members of the cohort.
- **Energy Trust of Oregon's SEM program:** Through its Production Efficiency program, Energy Trust of Oregon offers SEM training and support to industrial participants by providing energy management consulting services to educate and train about details of industrial energy. Energy Trust of Oregon's program is largely run by a third-party implementer, but with Energy Trust of Oregon oversight in the curriculum used for SEM project trainings.
- **A Midwest Organization's Energy Manager Non-Incented Measures and other SEM programs:** This organization has several industrial portfolio programs related to SEM practices, such as the Energy Manager Non-Incented Measures program and the Monitoring and Targeting program, through which it provides expertise and funding for SEM projects and staff. Through the Energy Manager Non-Incented Measures program, the Midwest Organization subsidizes the salary of an in-house energy manager, and through the Monitoring and Targeting program, it helps participants install or upgrade their energy monitoring systems. The interview was largely focused on the Energy Manager Non-Incented Measures program.
- **NEEA's SEM program:** NEEA has been key in spurring the market transformation of SEM in the Northwest. Ultimately, the trainings, presentations, funding, and general coordination from NEEA resulted in the Northwest Industrial Strategic Energy Management Collaborative, which is now a self-sustaining organization that continues to integrate SEM into the Northwest by providing connections and resources, most of which can be found on the SEM Hub website.

# Appendix A. Logic Models

LOGIC MODEL: On-site Energy Manager



**LOGIC MODEL: Strategic Energy Management (rev. 03/11/19)**





# **Appendix B. Program Manager Interview Guide**

## 6. NYSERDA OsEM/SEM Staff Interview Guide

The table below maps the research questions of the study to the specific interview questions in this guide.

Researchable Questions	Question Number
Are all aspects of program design and delivery working as anticipated in the 2019 logic models?	A5,A6,B1,B3, C3,C4,C8,D3,D5 E1-E3
How is program implementation structured? What are the roles and responsibilities of NYSERDA and key partners?	A1-A4,D2,D6,D7
Is the program design effective? What are the drivers of changes, and what are the outcomes so far?	Section B, Section C
How does the program collect feedback from participants and program partners, and what feedback has it received?	B2,B7,C4-C7
What external or internal challenges has the program faced to date, and how has it overcome those challenges (implementation and management, recruitment, data collection and tracking, and developing and distributing materials)?	A3,A4,B8,B9,C9,C10
For activities not yet initiated, what is the anticipated path of implementation? Are there any barriers to moving forward with these activities?	B6,E1,E2
What channels and methods are being used for recruiting participants?	Section D
What channels are being used, or are anticipated, for disseminating program results and other information?	Section E

### A. Introduction

Thanks for participating in this interview today. The purpose of the interview is to understand your perspective on the effectiveness of the SEM/OsEM program, capture any lessons you have learned through your experience, and identify obstacles or potential opportunities for improving program outcomes. The information you provide today will help us document a holistic picture of the program's effectiveness to date, including what is working well and should be continued, where there are opportunities for improvement, and what additional collaboration, information or resources might be needed to optimize the program. To begin, I will ask some questions about how operations for your program are organized.

A1. [SEM] I have read the VEIC scope of work, but can you explain to me how the SEM operations are structured? Please include your role, the roles of the outreach contractors CHA and ERS, and how you both interact with VEIC and Cascade Energy.

1. Do you have an org chart or written description of these roles that you could share?

A2. [OsEM] Can you explain how the OsEM operations are structured, including your role, the roles of the outreach contractors CHA and ERS, the OsEM project managers, and the roles of any other core partners?

1. Do you have an org chart or written description of these roles that you could share?

- A3. How do you report on the program’s activity and progress to other audiences within NYSERDA? How is that information used? Do you think this communication system is effective?
- A4. Does the program have sufficient staff, budget and other resources to accomplish its goals? Do you see any opportunities to change policies or organization within NYSERDA to improve program performance?
- A5. According to the latest Industrial Chapter, from June 2020, the only changes to the logic models for SEM and OsEM have related to the target market – the SEM model was changed from industrial-focused to industrial and commercial. Are all aspects of program design and delivery working as anticipated in the logic models?
- A6. Do you foresee any updates to the logic model barriers, outputs or outcomes, based on your experience with the programs to date?
- A7. OsEM and SEM represent two different approaches to achieving similar outcomes for end-users. How do you share experiences and learnings across the two programs? What have you learned about how to target the two approaches to different types of end-users?
1. At least one participant has enrolled in both programs, is that right? Would you recommend that approach to other participants? Why or why not?

## *B. OsEM Design and Implementation*

[These questions are for OsEM staff only.] Next I’d like to better understand the details of program implementation.

- B1. One of the OsEM activities is the creation of a roadmap to onboard the OsEM role. The 2017 CHA presentation (by Craig Avalone) appears to provide this roadmap – is that correct? If so, how is this tool used?
1. How else does the program structure help the OsEM engage other stakeholders within the facility? Have any OsEMs had difficulty with this aspect of their role?
- B2. The quarterly reports for Byrne Dairy are extremely informative, and effective at describing energy management activity and progress against goals. Are other quarterly reports at the same level of quality?
1. How are the OsEM quarterly reports used? (Probe: what audiences, internal or external, do they reach?)
  2. Since starting the program, what lessons have you learned about what characteristics or features are important for effective energy management plans, and communication and reporting, both internally and to the program?

- B3. Have any industrial participants used an internal employee as OsEM, or a hybrid approach? What are you learning about pros and cons of these different approaches?
1. What have you learned since starting the program about what characteristics, skills or practices make OsEMs more or less effective? (Probe: background, experience in industry, years experience, internal/external, communication approach, management/delegation habits, etc.)
  2. The Byrne Dairy SOW indicates that the CHA assigned multiple staff to fill the OsEM role. What are the implications of this for a company that elects an internal OsEM approach, and for the concept of the OsEM as a single individual?
- B4. How many participants have pursued the bonus payments? If they do not pursue the bonus payment, do you have any other way to track whether they continue to use energy management practices?
- B5. How has the design of the OsEM program changed since the first pilot, if at all? What are the drivers of these changes, and what are the outcomes so far? (Probe: changes to broaden eligibility and increase flexibility).
- B6. One of the performance monitoring steps for OsEM described in the Industrial Chapter is an assessment of the effectiveness of training materials.
1. Do you have a plan yet for how you will conduct this assessment? Are you facing any barriers to completing this task?
  2. What training materials are involved in the OsEM program, and for what audiences? What is the status of these trainings? Have you developed all the training resources you expect to need?
- B7. Other than the information included in the quarterly reports, what data on activity and energy savings do you receive from participants and OsEMs? How often do you receive data updates, and how are you storing this information? (Probe: Buildings Portal system)
1. What reporting or analysis capabilities does this system have? (Probe: How is program data used and shared? Does data inform future program planning?)
  2. Have impact evaluators indicated that project data is sufficient for their approach? Do you know what methods they will use?

B8. Thinking about the various aspects of program implementation, including design, recruitment, implementation and management of partners, data collection and reporting, and budget management, among others, what would you say has been the greatest challenge? How have you addressed that challenge?

B9. What do you view as the program's greatest success to date? Why do you say that?

### C. SEM Design and Implementation

[These questions are for SEM staff only.] Next I'd like to better understand the details of program implementation.

C1. Since starting the program, are there any lessons you have learned about SEM curriculum design, how to implement cohorts and trainings, or what type of participants are most or least likely to benefit from the program?

C2. I believe at least one of the active cohorts is entirely wastewater facilities. What have you learned about the benefits or challenges, if any, of a cohort where all participants are in the same industry?

C3. According to the logic model, one of the anticipated outcomes of SEM is an increase in the number of qualified SEM consultants. This is also included as a task in the VEIC scope of work. Can you discuss what training activities have happened to date, and how the consultant training overlaps with the cohort work, if at all?

1. Are there any challenges in completing these trainings?

C4. One of the more difficult near-term SEM outcomes to measure is peer to peer learning. What evidence do you have that peer-to-peer learning continues after the SEM training (Year 1) and technical support (Year 2) is over? Do you feel ongoing peer-to-peer collaboration is an important outcome to ensure long-term commitment to SEM by participant facilities? If so, why?

C5. I understand you changed the structure of the EMA tool used to assess participant progress. When did this change take place, and what was the purpose of the change? What has been the outcome?

C6. How are you receiving and storing data on SEM program participants? What kinds of information do you collect?

1. What reporting or analysis capabilities does this system have? Are you able to access data as needed to monitor program progress against targets, inform future program planning, and share information with other stakeholders?

2. Have impact evaluators indicated that project data is sufficient for their approach? Do you know what methods they will use?

- C7. Are you able to track whether companies are continuing to implement SEM after the direct engagement with the program ends (after the year 2 technical assistance)?
- C8. The current PON for SEM allows participants to choose from traditional SEM, virtual treasure hunts and self-serve strategic energy management. Can you describe what led to the addition of the treasure hunts and self-serve options, and what response you have seen to date?
- C9. Thinking about the various aspects of program implementation, including design, recruitment, implementation and management of partners, data collection and reporting, and budget management, among others, what would you say has been the greatest challenge? How have you addressed that challenge?
- C10. What do you view as the program's greatest success to date? Why do you say that?

#### D. Recruitment

[These questions are for both SEM and OsEM.] Thank you. Now let's move on to recruitment.

- D1. The June 2020 BAB shows participation in the EMP programs increasing to 30 or more per year for the next five years. What proportion of that number is expected to come through SEM/OsEM? Are you on pace to meet those targets?
1. [If yes] This represents a significant increase from previous years. What factors are contributing to the increase in participation? Why do you say that?
  2. [If no] What factors do you think are limiting participation? Why do you say that?
  3. How do you expect participation to change going forward, if at all?
- D2. Why were CHA and ERS selected as outreach contractors? (Probe: specific skills, resources) Have they met your expectations in terms of their outreach and recruitment success? How do you evaluate their effectiveness?
- D3. Based on the materials you shared, you are using webinars cohosted with trade organizations and utilities, CHA/ERS [as described in Introduction], marketing through KSV, and the NYSERDA website as recruitment channels. Is that correct? Are there any I missed?
1. Which ones have been the most or least effective? Why do you say that? (Probe: what data is tracked on participant awareness channels, webinar attendance, CHA relationships, etc.)
- D4. The program materials included documents from KSV describing proposed marketing approaches for SEM and OsEM. What activities did KSV implement (probe: email blasts, mailings, online ads). Did you engage in any other forms of marketing aside from the webinar presentations?
1. How effective was the marketing activity? Why do you say that? (Probe: what data is collected, and how is it stored?)

2. Do you expect to use similar marketing services going forward?
- D5. Based on the participant interviews from 2019 and the registration lists for your webinars, you have engaged on some level with all of the target audiences in the logic models. How effectively do the webinars engage the different audiences listed in the logic models?
1. Do you see a need for deeper engagement with any specific audience or group, or different modes of engagement?
- D6. I see from the program materials you shared that you are working with a number of partners, including utilities, trade associations including the Business Council, MACNY, and Ignite Long Island, the Association of Energy Engineers, Western NY Sustainable Business Roundtable, and others. What role do these organizations play in your recruitment approach?
1. Some organizations seem more engaged than their peers. For example, National Grid seems to be more active than other utilities, and the Business Council seems to be a more engaged partner than the smaller trade organizations. Is that accurate? What opportunities do you see for other partners to be more engaged, if any?
  2. Which of these organizations have been most effective? Why do you say that?
- D7. While you have engaged a number of regional associations and utility partners, none of the partners mentioned in the program materials are industry-specific organizations. What has your experience been reaching out to national or state-level industry organizations such as the Associated New York State Food Processors, the Plastics Industry Association, or the Empire State Forest Products Association?
1. Does the program outreach specifically target recruitment to the six energy-intensive industries in any way? Why or why not?
- D8. Some webinars show that participants co-presented, such as the webinar delivered by Todd, John Conery of Camso and Craig Avalone of RED-Rochester. Have you noticed that this is a more or less effective approach to sharing information about the program? What evidence makes you say that?
1. Are there any obstacles to persuading participants to present? How did you overcome these obstacles?
- D9. Are you planning any changes to your recruitment approach? What is driving those changes? What outcome do you expect from the change?

## *E. Market Transformation*

My final questions concern market transformation.

- E1. [SEM] One of the specified activities in the SEM logic model, which is also included in the VEIC scope of work, is the dissemination of standardized SEM materials, which is expected to be necessary to drive market transformation. What is the timeline for this activity? Are you facing any obstacles to moving forward with this task?
1. The VEIC scope indicates you will target high energy intensity industries, and energy consultants. Do you anticipate any changes to this approach? What channels do you expect to use to disseminate these materials?
  2. Other programs, such as NEEA, offer standardized materials for program administrators. What is your perspective on using non-NYSERDA materials for market outreach?
- E2. [OsEM] The logic model shows that, in addition to training materials, standard templates and resources will be distributed to the market as an outcome of the OsEM program. Some resources are currently posted on your website. What other resources do you expect to develop, if any?
1. What additional dissemination strategies do you expect to use, if any? What audiences will they target? (Probe: If end-user, specific roles/functions targeted)
- E3. To date, you have generated a large number of case studies – 3 for SEM and 8 for OsEM. How are you disseminating these materials, aside from posting them to the website? How do you envision using these materials going forward? Have you received any feedback on these materials?
- E4. Participant feedback on the programs has been largely positive so far. In what ways, if any, do you expect participants to play a role in recruitment or market transformation? What evidence do you have that this occurs?
- E5. Other energy management strategies, such as ISO50001 exist and have some brand recognition among industrial companies. What have been the benefits and challenges of promoting SEM and OsEM instead of endorsing a branded approach, (as the DOE has done with ISO 50001)?
1. To what extent are these other approaches existence in the market complementary to, or a barrier to, dissemination of NYSERDA's approach?