

CONTINUOUS ENERGY IMPROVEMENT PROGRAM



PROGRAM SUMMARY

Participants:	Large commercial and industrial customers.
Customers are incentivized to:	Continually practice strategic energy management through both behavioral/operational changes and technology upgrades.
Support provided to customers:	Free energy expertise is provided through workshops and “Kaizens” (facility walkthroughs), which empower customers to continually improve their energy management. A cohort structure facilitates peer-to-peer engagement to ensure buy-in to energy saving strategies.
Impact:	Customers are predicted to cut energy consumption by 10 to 15% in the first three years.

Efficiency Vermont’s (EVT’s)¹ Continuous Energy Improvement (CEI) Program² empowers customers to achieve energy savings through behavioral changes, operational adjustments, and technical guidance for equipment upgrades.

- ✔ The program offers extensive training and facilitates peer-to-peer engagement opportunities.
- ✔ CEI is framed as a long-term systems approach to energy management that fosters a culture of energy efficiency through its strategic energy management process.
- ✔ Customers have the potential to cut energy consumption by 10–15% in the first three years of participating in the program.³

CEI began as a pilot in 2014, but officially became part of EVT’s portfolio in 2018 as its first energy efficiency program that was both behavior-focused and targeted toward commercial and industrial customers in Vermont. Each year, EVT focuses on a different technology theme – e.g., chillers, ammonia refrigeration systems, or wastewater systems – to select its cohort (i.e., a group of participants that have similar building systems or functions), which helps to maximize the relevancy of the peer-to-peer engagements within a cohort.

The CEI program approach, often referred to as “strategic energy management,” is replicable and has

¹ EVT is one of Vermont’s Energy Efficiency Utilities. EVT is a regulated utility that operates under VEIC, a sustainable energy company with a mission to enhance the economic, environmental, and societal benefits of clean and efficient energy use for all people. Vermont’s Public Service Board directs and provides oversight for EVT.

² Efficiency Vermont (2020), [Continuous Energy Improvement](#)

³ Efficiency Vermont (2020), [Continuous Energy Improvement](#)

been used in many areas of North America: CEI-type programs have been successfully implemented by several utilities and third-party administrators, including Bonneville Power Administration, Energy Trust of Oregon, Focus on Energy Wisconsin, BC Hydro, NYSERDA, and Southern California Edison.⁴ In some cases, VEIC provides guidance to other states interested in implementing strategic energy management programs.

Systems Efficiency Benefits. The CEI Program is intended to enhance the culture of energy efficiency at an organization by demonstrating how participants can identify and deploy strategies for continuous energy improvement. Regardless of the technology theme of the cohort, the program is not exclusive to any particular equipment type or building system, and instead aims to save energy across multiple building system types (e.g., HVAC, lighting). The program focuses on promoting process improvements, maintenance, and employee engagement to encourage a long-term systems approach to energy management. The CEI Program facilitates in-person educational opportunities – Kaizens, workshops, and meetings with energy teams – that guide participants on the use of these tactics to address multiple building systems. An entire cohort of program participants might attend a Kaizen or workshop to enable peer-to-peer engagement.

CUSTOMER SUPPORT

Program staff facilitate Kaizens and workshops that walk customers through strategies that they can continually implement to identify and act on energy-saving opportunities.

Kaizens. “Kaizen” is an approach to continuous improvement that builds on small changes to generate large improvements.⁵ Within the CEI Program, a Kaizen is an energy treasure hunt event involving a walkthrough of a participant’s facility.

- ✔ During a CEI Kaizen, EVT brings outside engineers to a facility to highlight areas for improvement, and other cohort participants contribute their expertise as well. A typical question raised during a Kaizen might be: What will happen if the pressure of a facility’s steam system is lowered? Or, more generally, what changes to setpoints or behaviors are viable energy saving opportunities?
- ✔ Once a program participant is familiar with the Kaizen investigative framework, they can regularly apply it to sustain existing energy saving measures and to unearth more savings opportunities.
- ✔ Peer-to-peer engagement at Kaizens may help program participants gain confidence in an energy saving strategy if a peer reports that the strategy is both feasible and valuable. For instance, a notable energy-consuming process at a brewery is maintaining the kettle temperature. At a Kaizen, an outside engineer could suggest reducing the kettle temperature to save energy, but the brewery’s facility manager might hesitate to take the suggestion unless they hear from a peer – a representative from another brewery – that the temperature change would not negatively affect the quality of the product based on their experience at another facility.

“If we can have customers be their own good stewards of the environment and the grid, then that’s something where we see huge value in terms of saving energy.”

– Jason Lenihan, Senior Program Manager, Vermont Energy Investment Corporation

⁴ ACEEE (2019), “[Features and Performance of Energy Management Programs](#)”

⁵ The word “kaizen” literally means “improvement” in Japanese and in English is defined as a Japanese business philosophy of continuous improvement of working practices, personal efficiency, etc.

Workshops. At workshops, EVT provides advice (from EVT energy consultants, EVT energy coaches, or third-party experts) on energy-efficient products and technologies.

- ✔ EVT introduces participants in a classroom setting to an energy savings approach or concept tailored to that cohort's needs. For example, workshops for the hospital cohort have focused on chilled water systems, best practices for operations and maintenance of rooftop units and boiler systems, and encouraging employee engagement.

Resources for administration of customer support. The deepest engagement with customers and the most positive feedback within the CEI Program typically comes from in-person events that demonstrate opportunities for energy savings. Although in-person events can be time-consuming, the CEI Program spreads out participation over 18 months, rather than squeezing the program commitment within a typical 12-month period. To the extent possible, the program intersperses in-person meetings with webinars to maximize educational support within participants' time constraints.

Encouragement for equipment retrofits. While the CEI Program has a heavy focus on low/no-cost behavioral and operational improvements, the program also encourages participants to consider equipment retrofits through its Kaizens and other technical trainings. The program encourages participants to frame equipment retrofits as short- or long-term opportunities so that they can be considered for integration into other life-cycle events, e.g. other tenant improvements or needed equipment replacements. While participants might not have the capital initially to upgrade equipment, over time the cost savings garnered from behavioral and operational adjustments have potential to build enough capital to do so. Additionally, EVT, through some of its project support programs⁶, offers financial incentives that buy down the price of equipment such as light bulbs, heat pumps, and air compressors. Savings achieved through equipment upgrades are attributed to another energy efficiency program at EVT that provides the financial incentive, but they are still tracked as program uplift benefits, i.e. EVT tracks when the CEI program leads an user to take advantage of another complementary program.

LOOKING FORWARD

EVT aims to increase program participation to encourage more customers to commit long-term to improving energy efficiency

The CEI Program promotes continued efficiency improvement among participants, including after program completion:

- ✔ CEI graduates not only successfully participate in the 18-month program, they also commit to staying engaged, including through completing an annual reassessment of their energy plan. Energy plan assessments involve collecting the data necessary to track savings and populate an energy model, which EVT can help develop.
- ✔ The CEI Program provides guidance in using an energy management information system to track energy consumption trends. Tracking savings beyond the first year enables the program to measure and document

"The CEI partnership reinforces Gifford Health Care's commitment to energy efficiency, which strengthens our bottom line and enables us to further invest in patient services and facility improvements."

-Dan Bennett, Gifford President and CEO

⁶ Efficiency Vermont (2020), [Project Support](#)

savings that accrue from the behavioral and operational changes, which become more significant over time.

Nevertheless, correctly monitoring data is an ongoing challenge for both modeling and verification of savings:

- ✔ Savings due to behavioral adjustments are commonly small and require a degree of submetering to detect. Submetering makes it easier to assess equipment performance, attribute specific actions to energy savings outcomes, and input precise data into an energy model to predict savings.
- ✔ Another challenge is that securing accurate savings data depends on having an accurate baseline model. However, by the third year of data tracking, the baseline model is usually outdated due to significant changes in operations or additional interventions that were not originally considered. Therefore, EVT encourages CEI graduates to re-baseline every three years and provides technical support to do so through an account manager.

There is opportunity to grow the number of CEI Program participants and alumni. As of December 2019, there were about 20 participants and graduates of the CEI Program, yet there are about 500 large customers in Vermont that are eligible for participation. The next cohort may focus on launching green campus initiatives with universities, in which the CEI Program would plan to incorporate energy challenges (similar to Kaizens) and empower students to take the lead on behavioral changes. Inspiring buy-in and fostering ownership over energy management best practices will continue to be a key element of the CEI Program.

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