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INDUSTRIAL ENERGY IMPROVEMENT

Cohort 1, Year 1 Report

Prepared for:
Energy Trust of Oregon

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Introduction

Energy Trust of Oregon (Energy Trust) is operating an Industrial Energy Improvement (IEI) pilot program within its Production Efficiency (PE) Program. The IEI is being implemented by Strategic Energy Group (SEG) under Energy Trust oversight. The IEI seeks to reduce participant site energy intensity and production costs by applying continuous improvement practices. Under the IEI, energy is treated as a variable and manageable (as opposed to fixed) cost for industry. It is assumed that energy intensity can be reduced by five to ten percent with little capital investment and that continuous improvement practices applied to energy can have other benefits for productivity, safety and environmental impact.

The IEI assists participant firms by putting in place a structured energy program which includes establishing accountability for tracking energy and engaging employees to reduce energy use through the "Plan, Do, Check, Act" cycle. The IEI services are delivered to participants in a group environment. Monthly trainings are held over the course of a year in various formats, consisting of six, day-long in person workshops, four, two-hour Webinars, and two individual, on site meetings. The workshops are held at the Energy Trust offices and IEI participant firm locations on a rotating basis.

Pilot Goals and Objectives

The goal of the pilot is to put into operation a process of continuous energy management improvements which enables energy savings and reductions in energy intensity. Energy savings come from operational and maintenance improvements, incremental increases in capital energy efficiency projects (i.e., more lighting efficiency), additional capital projects that would not otherwise have been considered (i.e., process changes, consideration of energy efficiency in all capital efforts), and improved persistence for operations and maintenance (O&M) and capital projects. Through the pilot, Energy Trust will learn the level of commitment it can expect from industrial firms in continuous improvement energy management programs.

Conclusions and Recommendations

Conclusions

The key conclusions from the IEI Cohort 1, one- month interviews are:

- Participants thought their participation in the IEI was valuable and a good use of time and resources.
- Most participants reached their energy savings goals with many indicating that they expect the savings to persist and to be able use the tools they've learned through the IEI to leverage additional savings.
- The majority of the participants rated their overall satisfaction with the IEI, as well as the support they received from SEG, as very high.
- Upper management or corporate support was a key success factor for the IEI.
- Participants preferred face to face meetings, especially those at other participant facilities, as the preferred meeting format, but admit that scheduling a day away from the office is challenging.
- Despite the high level of satisfaction with the IEI, some participants seemed to struggle with the continuous energy improvement concept or felt that some aspects weren't applicable to their firms.

Recommendations

Based on the participant feedback from the IEI Cohort 1, one-month interviews, Navigant Consulting recommends the following:

- Continue the IEI as a regular component of the PE program:
    - Ensure high-level management support and a mix of involvement, including team members from the shop floor
- Continue the current recruitment strategies as they are effective at identifying appropriate candidates for the IEI:
    - Utility reps understand their customers and can help screen good candidates and introduce them to the IEI; and
    - Lean manufacturing consortiums are also an effective outreach as these customers are already familiar with continuous improvement concepts.
- Modify the format of trainings to emphasize face to face meetings;

- Analyze the content of the training to make sure that topic aren't redundant and differences between material are clear;
- Have participants respond to Energy Trust's industrial energy management battery of questions at start of IEI to establish a baseline;
- Expand the IEI to include natural gas efficiency;
- Consider funding SEG as an ongoing resource to IEI participants:
    - Possibly allow SEG to continue on as energy team members for an additional period of time.
- Leverage participants enthusiasm for the IEI and their plans to continue and expand IEI activities by:
    - Asking past IEI participants to speak at current trainings; and
    - Hosting annual follow up meetings to discuss progress with initiatives.

It should be noted that, prior to this evaluation report, Energy Trust had already implement several improvements for Cohort 2, including modifying the format of the trainings to emphasize face to face meetings and asking past participants to speak at current trainings.

Areas for further investigation

Energy Trust should undertake an investigation of PE program records to determine if IEI participants are more likely to undertake capital projects than IEI non-participants. As several interviewees indicated that they would have included capital projects in their IEI activities but for the current economic conditions and because large capital projects often involved significant lead time for budgeting, planning and equipment procurement, this follow-through analysis should be conducted one to two years after the completion of the IEI. This analysis should also investigate to what degree IEI participants implemented capital projects prior to their IEI involvement and whether this likely influenced their decision to participate.