research/into/action inc

Final Report

2006 Production Efficiency Program: Process and Impact Evaluation

Funded By:

EnergyTrust of Oregon, Inc.™

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We contacted more than half of the 2006 Production Efficiency participants, visiting 66 customers on-site and interviewing others by telephone. We appreciate the time they spent with us and the access to their facilities. Finally, we contacted nonparticipating industrial customers and we thank them for taking the time to help the evaluation team and Energy Trust to understand their programmatic needs.

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C EXECUTIVE SUMMARY

Energy Trust of Oregon, Inc. (Energy Trust) was incorporated as an Oregon nonprofit public benefit corporation in March 2001 to fulfill a mandate to invest "public purposes funding" for new energy conservation and related activities in Oregon. It receives funding from a three-percent public purpose charge to the rates of the two investor-owned electric utilities in the state. Energy Trust has a responsibility to report to the Oregon Public Utilities Commission (OPUC) on how it is spending its funding and what it achieves.

Energy Trust launched the Production Efficiency (PE) program in May 2003. The primary goal of the program is the acquisition of large volumes of electric savings at modest cost through a wide variety of efficiency strategies for industrial processes. Available to both industrial and institutional customers of the state's investor-owned utilities, the program addresses both new and existing industrial manufacturing processes and process support systems.

In 2006 alone, Production Efficiency has saved an estimated 0.5% of Oregon's total industrial electricity consumption. Since its inception through 2007, Production Efficiency has saved an estimated 2% of Oregon's total industrial electricity consumption and has engaged about 10% of industrial customers, responsible for about 20% of industrial electricity consumption.

This document assesses the impact of completed Production Efficiency projects recognized in 2006. For 2006, 157 project sites had a combined recorded savings of 71,984,735 kWh (roughly 8.9 average megawatts). The evaluation estimated savings for these projects totaling 73,136,251 kWh, for a realization rate of 101.6%. For the assessment, the team visited 65 of the projects with the largest savings; the reported energy savings for this sample totaled 63,963,306 kWh, or 89% of recognized 2006 program savings. The team interviewed staff at each site visited, plus conducted additional interviews by telephone. From this sample of 97 contacts, free-ridership was estimated. Participants reported taking actions that constitute program spillover, saving both electricity and natural gas, but the current research was not able to estimate the magnitude of the savings. Table ES.1 provides the indices of program savings.

This document also updates a previous process evaluation completed for the Production Efficiency program in early 2005. To accomplish the update, the evaluation team interviewed representatives from all of the organizations involved in implementing the program, including the program management contractor (PMC), the program delivery contractors (PDCs), allied technical analysis contractors (ATACs), and market actors (industrial equipment vendors and contractors), and surveyed participant contacts to assess the program's strengths and weaknesses.

Table ES.1: Gross and Net Electricity Savings from the 2006 Production Efficiency Program

INDICES OF PROGRAM SAVINGS	VALUE
Working Estimate of 2006 Savings	71,984,735 kWh
Realization Rate	101.6%
Gross Savings Estimate	73,136,251 kWh
Free-Ridership Estimate*	17.6%
Net Savings Estimate	60,242,106 kWh
Net-to-Gross Ratio	82.4%
Net Savings as a Percent of Working Savings	83.7%

* This estimate is the mid-point of a free-ridership range estimated for the program.

Finally, this document assesses the remaining industrial market for program services. This was done through an analysis of a database of the state's industrial customers and a survey of a sample of nonparticipating industrial firms to learn about their program awareness and some of their energy-use behaviors.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

The Production Efficiency program is successful from a number of perspectives. It has conducted a large number of projects with a variety of industrial firms and is acquiring large quantities of cost-effective energy savings. Industrial participants are pleased with the program overall and with the program's various aspects in particular, including the services they receive from program representatives.

Since its inception, the Production Efficiency program has worked with industrial sites corresponding to 20% of estimated total industrial electricity consumption (kWh). Energy Trust, as a whole, has worked with industrial sites corresponding to 25% of estimated total industrial electricity consumption through the Production Efficiency, Building Efficiency, and New Building Efficiency programs.

Within the industrial sector, Production Efficiency, since its inception, has worked with facilities corresponding to over 30% of total electricity consumption in three high-use manufacturing subsectors: paper, food, and machinery.

The Production Efficiency program is well positioned to meet many of the needs of nonparticipants. When nonparticipants were asked about the types of external support they would find most valuable, incentives for energy-efficient equipment (41%) and efficient process improvements or plant upgrades (39%) topped the list. Following closely, was information on energy management best practices in their industry (35%).

Below, we summarize our specific conclusions and recommendations on research issues investigated by this evaluation.

Marketing

Conclusion

Since program inception, the numbers of PDCs and ATACs have decreased; funding for individual PDCs has also decreased, while their territories have expanded. At the same time, the success of the program's marketing strategy has made that strategy more challenging, as the program has already gained entry in the more welcoming facilities and has identified the most pressing projects for those facilities.

PGE customers were significantly more likely than were PacifiCorp customers to be uncertain about whom to call with questions about the program. PGE customers were also significantly less likely than were PacifiCorp customers to have called, or to contemplate calling, their program representative when considering an additional equipment purchase, suggesting a need for more aggressive marketing in PGE territory.

The Production Efficiency program appears to be successful in appealing to equipment vendors and contractors. Most equipment vendors and contractors interviewed for this evaluation initiate conversations about program participation with their customers. However, this component of program marketing can continue to be strengthened, as less than one-half of 2006 participants learned of the program from these market actors.

Recommendation

For maximum effectiveness of program marketing, program staff should take steps to increase program understanding and augment the skills of those expected to market the program, including PDCs, ATACs, and vendors. To provide the greatest opportunities to obtain program savings, program staff should review the allocation of PDC resources, and the marketing roles of PDCs and ATACs.

Communications

Conclusion

Energy Trust staff have acted on a recommendation from a previous evaluation and now hold quarterly meetings with the program management and delivery contractors (the PMC and PDCs). All parties interviewed viewed this as "moving in the right direction" and an improvement in communications. Nonetheless, gaps in communications with PDCs remain. In addition, vendors reported a desire for additional program information.

Recommendation

To minimize uninformed speculation among program contractors about PE activities and procedures, program staff should continue to expand its ongoing communications with PDCs. Specifically, the details of the reservation system and the cost-effectiveness payback

threshold should be explained to those contractors and to the other market actors expected to market the program. ATACs should be given the opportunity to attend PDC meetings by receiving notice of and agendas for those meetings.

Ensure PDCs convey to their not-for-profit and municipal clients that they can benefit from the BETC tax credits using the pass-through mechanism.

Increase communication with vendors and their program-related training, and pursue ways to make program eligibility requirements and incentive calculations more transparent. Encourage vendors to promote BETC tax credits to their customers.

Program Data Collection, Tracking, and Processing Activities

Conclusion

In the course of this evaluation, inconsistencies between data obtained by the evaluation team from different sources, and even from the same source (Energy Trust), were noted. The evaluation team does not believe these inconsistencies are program critical. However, improvements in data collection, data tracking, and data processing activities will add credibility to program reporting and enhance program marketing efforts.

Recommendation

To address data and list discrepancies, we recommend a review of program data collection and entry procedures internal to Energy Trust and with program contractors. In particular, specific and consistent definitions of data-entry categories (such as *project* and *site*) should be developed and used. Energy Trust should identify one of the several date variables, which reflect different steps in the conclusion of a project, as the default date to be consistently used to report program activity by year, with any exceptions to this selection carefully identified and justified. Further, Energy Trust needs to clarify that some reported numbers will differ due to the factors used.

2006 Funding Limitation

Conclusion

There was evidence from all groups contacted for the research – program contractor staff, vendors, and participants – that the 2006 funding limitation and the resulting incentive-level changes were setbacks for the program, creating confusion among some participants and vendors as to whether there was funding and, among all groups, the method used to allocate it. Decision-making for complex industrial projects can be protracted and sometimes span several years; when project incentives change or appear to be in jeopardy partway through firms' internal deliberations, efficiency projects can be scuttled.

Recommendation

Program funds should be managed and accounted for in a way that provides steady, dependable funding for projects. Frequent changes to the incentive level and program starts and stops as a means of managing annual program expenditures should be avoided. Any changes in funding and funding allocation procedures need to be clearly communicated to all parties several months in advance of the change.

Technical Studies

Conclusion

A prior evaluation recommended the adoption of procedures or guidelines for technical studies. While the current research found an improvement in the quality of technical studies, nonetheless, no written procedures or guidelines have been produced. The evaluation team believes such guidelines are still warranted.

Recommendation

To simplify the program review and oversight function, and to enhance quality control of technical studies, program staff should promulgate and implement uniform procedures and standards or guidelines for both the technical studies and the review of those studies.