

Partners for Energy Efficiency and the Environment

Partners for Energy Efficiency and the Environment, or E3, was designed to be a coordinated effort between the state environmental inspectors of the Colorado Department of Public Health and Environment (CDPHE) and the Office of Energy Management and Conservation (OEMC), the state energy office. It expended \$76,000 over four years and conducted 76 free energy assessments for small to medium sized businesses, primarily along the Front Range of Colorado. These assessments have resulted in an estimated annual energy savings of \$31,640.00. If you estimate the life of the measures conservatively at 15 years the savings will easily pay for the cost of the program.

E3 was unique in the aspect of outreach, utilizing state environmental inspectors (who were seen as an untapped resource) for reaching building operators and owners to offer them a free energy assessment of their operations. These inspectors collectively visit thousands of small and medium sized businesses in Colorado each year for routine environmental inspections.

Inspectors attended a half-day training on the E3 program and recognizing energy efficiency (E2) opportunities. They were asked to promote free energy audits to the facilities they visited by passing out E3 brochures and referring interested businesses to the CDPHE E3 coordinator or OEMC. Unfortunately, it did not transpire as designed. Very few inspectors were active in making referrals or promoting the program. Even when an E3 brochure was given to the facility personnel, they rarely contacted OEMC for a free energy assessment.

Upon review, OEMC and CDPHE decided that there were several possible design factors responsible for the low referral rate. These factors included: limited time during a regulatory inspection; a low threshold of interest by building personnel because inspections may be a time of stress; and building owners were not interested in hearing about energy efficiency at the time of an inspection. There was also a weak follow up loop, i.e. an inspector did not know if the businesses they talked to called OEMC and OEMC did not know which businesses had been contacted. In the end it was only a few inspectors who led the program through their willingness to take the time to explain the audit process and then follow up with a phone call or email to OEMC. One hazardous waste inspector provided nearly half of all the referrals for the program. After a referral, OEMC could then do a follow up call to gauge suitability and interest. If the facility was suitable and the facility manager interested, he/she would be referred to a contractor who would schedule an assessment.

Due to the low referral rate, OEMC and CDPHE expanded the outreach channels from environmental inspectors to regional business support organizations that worked with similar customers. The program received referrals from the Northeast Metro Pollution Prevention Program (NEMPPA) and the City/County of Boulder Partnership for a Clean Environment (PACE) program. NEMPPA is a northeast metro Denver partnership of local businesses, government, and other organizations that promotes pollution prevention (P2) and E2 in that area. PACE is a P2 certification/recognition program for the Boulder area. Each of these entities had either utility rebates (PACE) or grant funds (from the

STEPP Foundation (www.steppfoundation.org) to give to businesses to assist with E2 project implementation. In addition to the low referral rate, the program also had a low implementation rate. While no formal evaluation was completed, we estimate that there was a 5-7% implementation rate. The referrals mentioned above, which came from organizations with additional cash assistance for implementation, likely had a higher success rate. Implementation analysis is based on a minimum of follow up phone calls conducted by OEMC throughout the duration of the project.

Of the \$76,000 budget, \$75,000 was allocated to the assessments, which averaged about \$925 per site visit. Additional funds were spent on inspector training, project status reports and meetings, project analysis, and a final report. OEMC received 114 referrals from CDPHE, NEMPPA, PACE, and Rebuild Colorado. Ten of those went to other programs, six to the Industrial Assessment Center at CSU and four to Rebuild Colorado of OEMC. 76 referrals were turned into assessments. Of those assessments, we concluded that five to seven of the businesses we visited did an energy retrofit of some kind. It is likely that a higher number implemented the low cost recommendations such as set back thermostats and lowering water heater temperatures. OEMC plans to do a

In addition to this narrative, please see the attached report from the subcontractor who conducted the assessments, Econergy International Corporation (EIC). EIC has provided qualitative program observations and quantitative calculations for potential energy savings. The potential energy savings are based on calculations that assume all the recommended measures were installed or implemented. This is a very unlikely scenario, but is useful in capturing existing opportunities.

In the end, the program had a harder time utilizing the environmental inspectors because environmental inspectors are focused on their primary enforcement task, and the site visit for environmental regulatory enforcement does not seem to be an effective "teachable moment" for E2. Existing CDPHE programs that are not enforcement-oriented and are already helping small and medium sized businesses with compliance assistance and P2 seems to be a more efficient way to promote E2.

Implementation for small- to medium-sized businesses is known to be a difficult market. We learned that partnering with groups like NEMPPA and PACE worked to the advantage of both parties in finding synergistic programs to help match E2 assessments with resources to aid in implementation.

In conclusion, this was not a very cost-effective program for hard energy savings, but we feel the educational aspect will be important as businesses continue to face increasing energy costs. It is our hope that the assessment will be a useful document to the business owners as they consider building operation and energy consumption in the coming years.

*361,100 kWh in annual electric savings and 555 therms of natural gas savings for a total annual cost savings of \$31,640. Based on EIC estimated calculations and applying a 5% implementation rate.

Energy and Environment: Results and Comments for Final Report
Econergy International Corporation
March 29, 2005

Recommendation Summary

Recommendation	Count (#)	Annual Electric Savings (kWh)	Annual Natural Gas Savings (therm)	Annual Electric Cost Savings (\$)	Annual Natural Gas Cost Savings (\$)	Annual Cost Savings (\$)
Lighting	68	5,657,000	0	\$429,900	\$0	\$429,900
Heating & Cooling Equipment	62	417,000	5,000	\$31,700	\$37,900	\$69,600
HVAC Controls	53	24,000	4,500	\$1,800	\$34,100	\$35,900
Compressed Air	27	100,000	0	\$7,600	\$0	\$7,600
Motors	11	61,000	0	\$4,600	\$0	\$4,600
Water Heater	10	3,000	300	\$200	\$2,100	\$2,300
Envelope	9	0	40	\$0	\$300	\$300
Refrigeration / Cooking	9	21,000	0	\$1,600	\$0	\$1,600
Other	20	939,000	1,300	\$71,400	\$9,600	\$81,000
Total	269	7,222,000	11,100	\$548,800	\$84,000	\$632,800

Qualitative assessment regarding the receptivity of the program

The companies we worked with were generally very receptive to us performing the assessment. They were also appreciative of the assistance. Several companies had specific concerns or questions that were important to them, which we were able to address. The fact that most companies did not have in-house energy expertise likely contributed to the general receptivity. We began working with companies after OEMC confirmed their interest, so we probably did not deal with the least receptive companies.

Unfortunately, companies were not as receptive in terms of implementing the recommendations that we provided. The most common feedback received for not implementing recommendations was financial barriers.

What seemed to work

- The fact that the service was free. There would have been much less interest if companies had to pay.
- Having CDPHE and OEMC perform the recruiting and initial screening, to maximize the use of Econergy's time.
- Coordination with related programs. Coordination with the NEMPPA grant program generated several referrals and increased the rate of implementation. Working with the City of Boulder generated a few referrals, and would have generated more if there had been more time.

What did not seem to work

- The level of implementation of recommendations was less than one would hope. Companies most often cited financial barriers as the reason for this. The experience with NEMPPA suggests that modest grants or other financial incentives can improve the rate of implementation.