
Evaluation, Measurement & Verification Report for Lassen Municipal Utility District 2009

Energy Efficiency Programs

- **Keep Your Cool**

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ABSTRACT

The following Evaluation, Measurement, and Verification (EM&V) report for Lassen Municipal Utility District provides a systematic review of the Keep Your Cool program. Recommendations were made to review savings figures and expand marketing efforts.

Table of Contents

Executive Summary	4
Introduction & Purpose of Report	4
Program Descriptions.....	5
Evaluation Standards	6
Evaluation Plans	6
Findings & Recommendations	6
Appendix A – Gasket Installations.....	8

Executive Summary

This report provides findings from an independent Evaluation, Measurement and Verification (EM&V) for the following energy efficiency programs from Lassen Municipal Utility District's (LMUD's) 2009 fiscal year: Keep Your Cool program.

The program was evaluated using a continuous improvement approach with the goal of identifying and recommending areas where changes can be made to improve data management and ensure data quality. For LMUD, this involved a review of the overall program with particular focus on data collection for the Keep Your Cool program.

After reviewing LMUD's energy efficiency program, we are recommending a review of the savings figures used for one measure in the Keep Your Cool program and a customer follow up regarding installation quality. We are also suggesting additional efforts toward marketing commercial and residential rebate programs.

Introduction & Purpose of Report

EM&V is the documentation of energy savings using direct measurements, engineering calculations, statistical analyses, and/or computer simulation modeling. EM&V is a requirement of two bills adopted during the 2005-2006 California legislative session:

SB 1037 (Kehoe): Requires all publicly-owned utilities to report to the California Energy Commission and their local governing boards about current and projected energy efficiency programs, including expenditures and savings.

AB 2021 (Levine): Reaffirms SB1037 mandates but also requires publicly-owned utilities to develop energy efficiency targets on a triennial basis and provide an independent assessment of measured savings.

This report provides unbiased, independent third-party auditing of the programs selected by LMUD. Specifically, this report assesses the savings calculation accuracy of the Keep Your Cool program.

Program Descriptions

Keep Your Cool

The *Keep Your Cool* program focuses on energy saving within the food and beverage industry, focusing on reducing electrical consumption of refrigeration equipment.

Common measures installed include:

- Door gaskets
- Strip curtains
- Auto-closers

Because this is a small city, very little program promotion is done or required. Since it is a direct install program that requires no investment by the business owner, it is expected that word of mouth will build interest amongst other businesses.

Evaluation Standards

The requirement for utilities to provide independent third-party assessments of measured savings is relatively new and subject to some interpretation. There are published references (such as the International Measurement and Verification Protocol and the Technical, Methodological, and Reporting Requirements for Evaluation Professionals), but it is apparent from the body of previous third-party assessments that there is a range of interpretations and applications of these references.

Our stance and approach is to:

- 1) Provide a rigorous review of the utility's programs.
- 2) Meet them where they are at and identify actionable improvements.
- 3) Minimize costs so more public benefits funds can be devoted to energy efficiency programs.

With this approach, our goal is to provide an "optimized" assessment resulting in an actionable review at minimal cost to the utility. This Continuous Improvement approach begins with process evaluation, followed by data analysis and detailed savings verification. If we discover significant opportunities for improvement in the course of evaluating a process or analyzing the data, we will stop and document the needed improvement actions. In such cases we do not make assumptions or otherwise fill in gaps in the data.

For example, if required program data is missing then we will document this as a needed improvement activity rather than spend additional time to estimate the data which should have been provided.

Evaluation Plans

Using the approach explained above, the specific evaluation plan for LMUD was as follows:

Process Review

Conduct staff interviews to identify any specific issues with the energy efficiency program and identify improvement opportunities. Evaluate the overall program for effectiveness.

Keep Your Cool

Evaluate third-party proposed energy savings and review deemed energy savings assumptions. Perform site verification for a portion of the installed measures.

Findings & Recommendations

Process Review

On Friday, March 12, an interview was conducted with Theresa Phillips, Energy Services Manager for LMUD. The discussion covered programs provided by the utility, qualitative results of the Keep Your Cool program and medium-term plans for Public Benefits Funds.

Other LMUD programs include commercial lighting retrofit programs, motor efficiency rebates and ground source heat pump rebates. There are also residential lighting, weatherization and appliance rebate programs. Rebate applications are available on LMUD's web site. It is worth noting that while links are provided in the rebate section of the web site, there are no program descriptions or other marketing materials. It would be beneficial to expand that section of the site with descriptions of each program.

The Keep Your Cool program has been successful and well received. Such direct install programs are simple to administer and a great way to open relations with the customer base since the installations are ostensibly free. In a number of cases, LMUD customers combined Keep Your Cool installations with lighting projects.

LMUD plans to continue the Keep Your Cool program for the next two to three years, until most or all of the small businesses are served. The focus will then shift more to lighting projects.

One of the hurdles LMUD faces, both in the commercial and residential markets, is educating the public about the benefits of energy efficiency and getting the word out about rebate programs. An approach that has been successful in other utility districts is to target lighting programs with efficiency returns great enough to justify giving the measure away. On the residential side, for example, this can take the form of a program where strings of incandescent lights may be exchanged at no charge, for a string of LED lights. For commercial customers it would take the form of distributing free replacement bulbs, or even funding small commercial retrofits as an outreach.

Any such outreach program should include distribution of marketing materials and – where possible – discussions with the customer about the benefits of energy efficiency.

Evaluation of Keep Your Cool

Most of the demand and consumption savings figures used in the Keep Your Cool program were reasonable and close to those of widely accepted references.

However, one issue noted was an apparent discrepancy between kW demand reduction figures, kWh consumption reduction and reasonable hours of operation. The demand reduction figure provided by LMUD was 0.18 kW, and the consumption reduction provided was 2,485 kWh. These numbers should be related to one another via hours of operation. However, as can be seen in the following table, back-calculating yields an hours of operation figure that is greater than the total number of hours in a year (8,760).

Measure	Unit Of Measure	Cost Per Unit	Annual kWh's Saved Per Unit of Measure	kW Reduction	Annual Hrs of Op
Auto Closers - Glass Reach-In Freezer	Per Closer	\$125	2,485	0.18	13,806

This could be the result of either an assumed demand reduction that is too low, or a consumption reduction that is too high. For comparison, the consumption savings provided in KEMA's "Measure Quantification Methodology Statewide Savings and Cost" report are 2366 kWh. This is similar to the annual savings in LMUD's data. It should be noted that only one auto closer was installed as part of this program, so the overall effect on calculated savings will be minimal.

This was discussed with the provider of the measure (The Bay Area Gasket Guy). It was found that the discrepancy came from using consumption and demand figures from two different KEMA reports. The provider agreed to provide revised savings figures for future installations.

Phone verification was performed on 3 of the 11 participating business. Satisfaction with the program was mixed, with one participant stating they were very satisfied, while another stated that their gaskets were beginning to fall off, to the extent that they "wished they had never participated". A measurable reduction in electrical consumption was noted by several participants.

A complete list of locations and savings figures is available in Appendix A.

The dissatisfied participant's information has been communicated back to LMUD. It is our recommendation that they be contacted and the gaskets repaired. Word of mouth marketing is a critical component of a program such as this, and if this participant is taken care of properly they could become a better ambassador of the program than other participants with no complaints.

Appendix A – Gasket Installations

Lassen Municipal Utility District

Keep Your Cool Program Activity Report

FY09

Date	Num	P. O. #	Name	Address	Amount	Gasket (feet)	Strip Curtain (Sqf)	Closers	Annual kWh savings	kW reduction
6/22/09	9513	905211430	Shell	2750 Main St.	\$381	0.0	26.0	1	13,034	1.95
6/22/09	9518	905211350	Young Sing Resturant	1350 Main St.	\$753	67.1	21.9	0	17,176	1.96
6/19/09	9499	905211100	Alliance	1850 Main St.	\$2,676	309.5	20.3	0	41,631	4.75
6/19/09	9500	905211145	Chevron	1530 Main St.	\$1,617	172.3	24.2	0	29,158	3.33
6/26/09	9576	905211600	Johnstonville Foods	472-850 Johnstonville Rd.	\$1,910	180.7	47.0	0	40,664	4.64
6/26/09	9577	905210945	Larry's Spirit Station	2525 Main St.	\$233	0.0	23.6	0	10,988	1.25
6/26/09	9578	905211500	Susanville Supermarket	50 Grand Ave.	\$331	41.3	0.0	0	4,298	0.49
6/26/09	9579	906101130	The Health Nut	2204 Main St.	\$1,024	128.0	0.0	0	13,311	1.52
6/26/09	9580	905211700	The Sage Hen Rest	2975 Main St.	\$1,784	173.6	40.0	0	36,659	4.18
6/25/09	9574	905211215	Beacon	1001 Main St.	\$1,509	158.8	24.2	0	27,769	3.17
6/25/09	9575	905211000	Idaho Grocery	2120 Main St.	\$3,288	323.3	71.1	0	66,696	7.61
TOTAL					\$15,507	1554.6	298.4	1	301,385	34.86

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