

California Energy Commission
STAFF REPORT

**ACHIEVING COST-EFFECTIVE
ENERGY EFFICIENCY IN
CALIFORNIA: 2013 STATUS UPDATE**



CALIFORNIA
ENERGY COMMISSION

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ABSTRACT

Achieving Cost-Effective Energy Efficiency in California documents the progress California utilities make in prioritizing investments in cost-effective energy efficiency. For the seventh consecutive year since the enactment of Assembly Bill 2021 (Levine, Chapter 734, Statutes of 2006), this report tracks how utility-reported energy savings compare with the state's goal of reducing total forecasted electricity consumption by 10 percent over 10 years. This report presents staff analysis of energy efficiency data compiled from investor-owned utilities' annual reports filed with the California Public Utilities Commission and from the California Municipal Utilities Association who, on behalf of publicly owned utilities, annually files reports with the California Energy Commission.

In 2012, investor-owned utilities, who represent the largest share of state electricity consumption, reported over \$1 billion in combined spending on energy efficiency measures. Investor-owned utilities reported achieving 3,898 gigawatt hours in annual electricity savings and 678 megawatts in peak demand reduction. Publicly owned utilities reported \$127 million in combined spending on their energy efficiency programs. Publicly owned utilities reported achieving about 440 gigawatt hours in annual electricity savings and 81 megawatts in annual peak demand reduction. As a group, publicly owned utilities achieved 64 percent of their combined annual electricity savings target that was established in 2007. Since 2006, publicly owned utilities have spent \$737 million on energy efficiency, resulting in 2,705 gigawatt hours of reported electricity savings and 511 megawatts in peak demand reduction.

Publicly owned utilities cite economic conditions such as a sluggish economy, slow recovery, and high unemployment as the prime reasons for lower participation in efficiency programs and main barriers in reaching their individual efficiency targets. Furthermore, electricity savings from lighting programs are expected to decrease when federal and state standards take full effect. Combined, these issues pose ongoing challenges to publicly owned utilities in achieving higher levels of efficiency savings.

Keywords: Energy efficiency, savings, demand, reduction, peak, electricity, consumption, potential, targets, evaluation, goals, measurement, verification, Assembly Bill 2021, Senate Bill 1037, investor-owned utilities, publicly owned utilities

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EXECUTIVE SUMMARY

Achieving Cost-Effective Energy Efficiency in California: 2012 Status Update documents progress of California electric utilities in meeting their individual energy efficiency targets as Assembly Bill 2021 (Levine, Chapter 723, Statutes of 2006) (AB 2021) requires. In 2006, this legislation set a goal to reduce total state energy consumption by 10 percent over 10 years and directs California utilities to identify all potentially achievable cost-effective energy savings. Under AB 2021, the Energy Commission is responsible for:

- Developing statewide achievable energy efficiency savings estimates in consultation with the California Public Utilities Commission (CPUC) and the publicly owned utilities (POUs).
- Establishing 10-year energy savings and demand reduction targets.
- Assessing POU progress through comparing their actual energy efficiency savings and demand reductions to their established annual targets.
- Proposing improvements in setting or meeting annual targets.
- Making recommendations (if any) to the POUs, the Legislature, and the Governor on potential improvements in the level of aggregate or individual target achievement in energy savings.

In this report the Energy Commission staff assesses utility progress in achieving individual and statewide energy efficiency savings. As Table 1 illustrates, the investor-owned utilities (IOUs) reported spending more than \$1 billion in 2012 on energy efficiency measures, which was a 5 percent increase in spending over 2011. IOUs reported 3,898 gigawatt hours (GWh) in combined annual energy savings and 678 megawatts (MW) in peak demand reduction. Combined, IOUs reported 54 million therms in natural gas savings.

Table 1: IOU and POU Electricity Savings, Peak Demand Reduction, and Program Expenditures in 2011–2012

	IOUs		POUs	
	2011	2012	2011	2012
Electricity Savings (GWh)	3,557	3,898	456	440
Peak Demand Reduction (MW)	644	678	81	82
Expenditures (\$ Millions)	\$959	\$1,004	\$129	\$127

Source: Reports from CPUC and California Municipal Utilities Association (CMUA).

In 2012, the POUs spent a combined total of \$127 million on energy efficiency programs, a 2 percent decrease from 2011. With a few individual exceptions, the POUs' reported combined electricity savings have declined for the third consecutive year. In 2012, POUs reported a combined 440 GWh in electricity savings, a decrease of 3 percent from 2011, comprising 64 percent of their combined annual electricity savings target. POUs also reported a combined 81 MW in peak demand savings, a 2 percent increase from 2011,

comprising 56 percent of their combined annual peak demand target. Individual POU electricity savings, peak demand, and program expenditures data are presented in **Table A-3**, **Table A-4**, and **Table A-5** in Appendix A.

This report contains metrics assessing the progress POU's made in their energy efficiency programs: trends in reported energy efficiency expenditures, energy efficiency spending as a percentage of revenue, electricity savings relative to adopted targets, electricity savings as a percentage of total sales, and the cost-effectiveness of efficiency programs.

This report concludes with the Energy Commission continuing to support achievement of higher levels of energy savings. Staff recommendations include:

- *Disclosure of energy efficiency and demand reduction funding sources.* AB 2021 requires POU's disclose to the Energy Commission sources of funding for investments in energy efficiency and demand reduction programs.
- *Disclosure of methods and assumptions behind energy savings estimates.* POU's should disclose E3 Calculator input settings. California utilities use the E3 Calculator to compute cost-effectiveness of energy efficiency programs and report energy saving program results. Staff would use E3 Calculator input settings to validate and more accurately analyze the POU's' progress in meeting their energy savings targets. The Energy Commission is willing to accommodate an aggregation or redaction adjustment of the E3 Calculator if necessary for confidentiality purposes. The Energy Commission supports the POU's' efforts to finish their technical reference manual by the end of 2014.
- *Improved evaluation measurement and verification process.* Energy Commission staff plans to work with POU's to improve the EM&V process and provide an EM&V handbook for the POU's to use in future EM&V cycles.

CHAPTER 1: Introduction and Background

Report Objectives

The main objective of this report is to recap the progress investor-owned utilities (IOUs) and publicly owned utilities (POUs) have achieved in improving energy efficiency in California. Energy Commission staff also provides an assessment of the progress made specifically by POU's and discusses efforts to assist POU's to increase the amount of energy efficiency in their service territories. This report also provides supporting information to the Energy Commission's *2013 Integrated Energy Policy Report*,¹ and contains a comparison of utilities' annual targets with actual energy efficiency savings and demand reductions.

California's demand for energy continues to increase though at a slower rate than projected. In 2012, utilities reported that Californians consumed roughly 280,561 gigawatt hours (GWh) of electricity, which is 2 percent higher than reported in 2011. California Energy Commission (Energy Commission) staff estimates that by 2024, with an average annual growth rate at 1.15 percent, California's annual electricity consumption will be around 321,734 GWh.² Energy savings are an essential component of both the state's plan to ensure adequate electricity supply and in reducing greenhouse gas (GHG) emissions as established in Executive Order S-03-05 and Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006) (AB 32). California has enacted several pieces of legislation aimed at increasing energy savings through energy efficiency programs sponsored by California utilities.

Energy Efficiency Legislative Requirements

Energy efficiency is the state's number one priority for procurement of new energy resources to meet California energy demand. The *Energy Action Plan of 2003* established that in meeting its energy needs the state would invest first in energy efficiency and demand-side resources, second in renewable resources, and third in clean conventional electricity supply.³

Climate change legislation further accentuated the role of energy efficiency in the state's policy. AB 32 requires GHG emissions to be reduced to 1990 levels by 2020. Customer-side energy efficiency is one of the primary approaches contributing to this goal in the electricity and natural gas sectors.

1 http://www.energy.ca.gov/2013_energypolicy/.

2 *California Energy Demand 2014–2024 Final Forecast*. California Energy Commission. CEC-200-2013-004- V1-CMF. <http://www.energy.ca.gov/2013publications/CEC-200-2013-004/CEC-200-2013-004-V1-CMF.pdf>.

3 See http://www.energy.ca.gov/energy_action_plan/2003-05-08_ACTION_PLAN.PDF.

Senate Bill 1037 (Kehoe, Chapter 366, Statutes of 2005) (SB 1037) requires electric utilities to meet their resource needs first with energy efficiency. For IOUs, SB 1037 requires the California Public Utilities Commission (CPUC) and the Energy Commission to identify all potentially achievable cost-effective electric and natural gas energy efficiency savings and set goals for achieving this potential.⁴ The agencies are required to review the procurement plans to ensure consideration of energy efficiency and other cost-effective supply options. In addition to these IOU requirements, SB 1037 requires all POUs, regardless of size, to report annually to their customers and to the Energy Commission investments in energy efficiency programs.

Assembly Bill 2021 (Levine, Chapter 723, Statutes of 2006) (AB 2021) encourages the state's utilities to expand energy efficiency programs to reduce customer energy consumption and costs, increase system reliability, and improve public health by reducing GHG emissions. AB 2021 directs the Energy Commission, in consultation with the CPUC, local utilities, and other stakeholders, to develop statewide energy efficiency potential estimates and energy savings targets. If determined that improvements can be made in either the level of energy savings and demand reduction targets for an individual utility or in meeting state energy efficiency goals, the Energy Commission is to provide recommendations to that utility, the Legislature, and the Governor. This legislation further requires that the Energy Commission provide a summary of the following POU information in the *IEPR*:

- Energy savings information
- Funding sources for investments in energy efficiency and demand reduction programs, and methods and input assumptions used to determine cost-effectiveness
- Evaluation, measurement, and verification (EM&V) results

AB 2021 further directs POUs to “first acquire all available energy efficiency and demand reduction resources that are cost-effective, reliable, and feasible.” POUs, as the IOUs, are to treat efficiency as a procurement investment. The energy agencies and the utilities met the first requirement of AB 2021 in December 2007 when they developed statewide targets and utility-specific targets.⁵

Senate Bill 488 (Pavley, Chapter 352, Statutes of 2009) requires the Energy Commission to evaluate the effectiveness of POU “comparative energy usage disclosure programs” and include POU savings potential in the triennial assessment of utility energy efficiency

⁴ The terms for energy efficiency “targets” and “goals” are used interchangeably. There is an established convention (at least since 2004) that the CPUC and IOUs use the term “goals.” POUs have adopted the term “targets” since that is the term used in AB 2021.

⁵ California Energy Commission, *Achieving All Cost-Effective Energy Efficiency for California*, Final Staff Report, CEC-200-2007-019-SF, December 2007.

potential and targets.⁶ The bill authorizes the Energy Commission to request information from POUs that the Energy Commission determines is needed to evaluate the potential cost-effective energy savings achievable through an expansion or statewide deployment of comparative electricity usage disclosure programs. The requirements would become inoperative on July 1, 2015, and would repeal on January 1, 2016. In 2010, POUs began providing annual reports on the effectiveness of their customer information programs.⁷

Assembly Bill 2227 (Bradford, Chapter 606, Statutes of 2012) (AB 2227) consolidates reporting requirements into a single section of the Public Utilities Code, making compliance easier and less costly for POUs by amending the AB 2021 reporting timeline to align more closely with the *IEPR* timeline. The intention of this legislation is to streamline the process, which will allow the POUs to allocate more resources for implementing efficiency programs. Rather than providing new 10-year targets every third year, POUs will provide updated targets every fourth year. The intent of AB 2227 does not appear to make any substantive changes to the previous version of the Public Utilities Code in regards to annual reporting of POU energy efficiency and demand reduction EM&V requirement.⁸

Since AB 2021's inception in 2006, Energy Commission staff's ability to analyze POUs' energy efficiency progress has been limited. Staff recommendations focused on improving the POUs' energy savings reporting. This report contains a discussion of legislative requirements versus the electricity savings data the Energy Commission receives, and limitations that preclude staff from assessing the POUs' progress toward meeting electricity savings targets and the state goal of reducing forecasted energy consumption by 10 percent over 10 years.

Report Organization

This report includes a staff assessment of self-reported energy efficiency savings for both the IOUs and the POUs. Verified savings were available only for the IOUs' 2006–2008 programs, as reported in the CPUC's second interim *2006–2008 Energy Efficiency Evaluation Report*

6 These existing information-based programs show customers how their energy use compares with a representative group of customers. The program logic predicts that this comparative knowledge will prompt customers to take energy efficiency actions. CPUC discusses savings estimation for comparative energy usage disclosure programs in D.10-04-029, *Decision Determining Evaluation, Measurement and Verification Processes for 2010–2012 Energy Efficiency Portfolios*, April 2010.

7 SMUD began performing evaluation of its customer disclosure program in 2009. In 2012 *Quantifying Savings from Comparative Usage Programs* was prepared by ADM Associates Inc. <http://admenergy.com/wp-content/uploads/2012/04/103.pdf>.

8 NCPA/NRDC, Letter to California Energy Commission and Commissioner McAllister, Re: NCPA and NRDC Joint Statement Regarding Evaluation of Energy Efficiency Programs and AB 2227, April 3, 2013.

(*Evaluation Report*).⁹ The POU's EM&V studies are still too few and too recent to provide enough information for a comprehensive estimate of verified electricity savings for all POU's. The following chapters comprise the remainder of this report:

Chapter 2 provides a summary of the IOU and POU energy efficiency savings and program expenditures.

Chapter 3 assesses POU energy efficiency progress.

Chapter 4 summarizes POU EM&V activities and efforts.

Chapter 5 summarizes staff conclusions and recommendations.

Appendix A provides detailed information on individual POU electricity savings, targets, and reported expenditures in tables.

Appendix B provides definitions of various terms applicable to energy efficiency.

⁹ CPUC, *2006–2008 Energy Efficiency Evaluation Report*, July 2010.

CHAPTER 2: Investor- and Publicly Owned Utilities' Energy Efficiency Savings and Expenditures

In the past seven years, California utilities reported making significant energy efficiency investments to attain energy savings and peak demand reduction. Collectively, since 2006 the IOUs and the POUs reported spending more than \$6 billion on energy efficiency and jointly claimed roughly 29,186 GWh in electricity savings and more than 5,231 MW in peak demand reduction. In this chapter, staff summarizes both IOU and POU progress in achieving individual and statewide energy savings.

IOU Energy Savings Goals, Reported Energy Savings, and Program Expenditures

In 2012, the IOUs were in the third and final year of their 2010–2012 efficiency program cycle. During this three year period, all four IOUs surpassed their energy and peak demand savings goals. Pacific Gas and Electric (PG&E) and Southern California Gas Company (SoCalGas) met their natural gas goals, while San Diego Gas and Electric Company (SDG&E) fell short in this area. Southern California Edison (SCE) does not have natural gas goals. Energy savings numbers are *ex ante* savings, that is, self-reported, not independently verified by third party evaluators. The majority of the savings achieved during this cycle occurred in the commercial and residential sectors mostly from lighting measures, process improvements, and heating, ventilation, and air conditioning (HVAC). Natural gas savings came from the industrial sector mostly from process improvements. The CPUC is working on the EM&V studies for 2010–2012 program cycle, and these results should be available in the second quarter of 2014. **Table 2** shows the IOUs' cumulative savings relative to the CPUC adopted goals for electricity savings, peak savings, and natural gas savings for these three years.

Table 2: CPUC Goals, Ex Ante Savings, and Performance in 2010–2012 Cycle

	PG&E	SCE	SDG&E	SoCalGas	Total
CPUC Goals					
Electricity Savings (GWh)	3,110	3,316	540	-	6,966
Peak Savings (MW)	703	727	107	-	1,537
Natural Gas Savings (MMth)	49	-	11	90	150
Ex Ante Savings					
Electricity Savings (GWh)	5,454	5,399	939	-	11,792
Peak Savings (MW)	948	1,007	153	-	2,108
Natural Gas Savings (MMth)	62	-	4	97	159
Performance					
Percent of GWh Goals	175%	163%	174%	-	169%
Percent of MW Goals	135%	139%	143%	-	137%
Percent of MMth Goals	127%	-	35%	108%	106%

Source: IOU Annual Reports for 2010–2012, see <http://eega.cpuc.ca.gov/Documents.aspx>.

Status of IOU Energy Efficiency Program Cycles and Potential Study

In May 2012, the CPUC issued Decision 12-05-015, providing guidance for the IOUs’ 2013 and 2014 program years. In the past, the CPUC approved three year cycles, often followed by a “bridge” year. This bridge year extended the previous cycle’s energy efficiency programs while plans for the next three year cycle were developed. In this decision, the CPUC established a two year “transition” period, which is neither a bridge year nor a portfolio cycle. This transition period will use the best elements from the 2010-2012 program cycle to determine what worked and build upon these programs.

Under CPUC direction, which leads to broader changes for the next cycle starting in 2015, IOUs were to design their portfolios to shift away from short lived individual energy savings measures to programs that encourage utility customers to adopt more comprehensive “suites” of measures that are characterized by deeper, longer lasting savings. Programs that did not work will be considered for elimination or modification if it is determined that they may not be realizing ratepayer benefits.

In 2011, the CPUC began a multiphased study on energy savings potential.¹⁰ The primary objective is a statewide assessment of energy efficiency technical, economic, and market potential for each utility’s service area. The study considers key policy mechanisms the state employs to drive the energy efficiency market. Phase 2 of this potential study began in 2012.

¹⁰ *Analysis to Update Energy Efficiency Potential, Goals, and Targets for 2013 and Beyond: Track 1 Statewide Investor-Owned Utility Energy Efficiency Potential Study*, Navigant, May 8, 2012.

<http://www.cpuc.ca.gov/NR/rdonlyres/5A1B455F-CC46-4B8D-A1AF-34FAAF93095A/0/2011IOUServiceTerritoryEEPotentialStudyFinalReport.pdf>.

A final report¹¹ was filed on March 3, 2014. This potential study's primary function is to provide guidance for the IOUs' post-2014 energy efficiency portfolios and goals.

Publicly Owned Utilities Energy Savings and Program Expenditures

California Municipal Utilities Association (CMUA), on behalf of POU's, annually files the *Energy Efficiency in California's Public Power Sector*¹² status report. Staff groups the POU's based on their annual electricity sales so that assessments within groups are more comparable. Below is the definition of three POU groups:

- Large POU's have annual electricity sales exceeding 10,000 GWh: LADWP and SMUD.
- Midsized POU's have annual electricity sales between 500 and 10,000 GWh: Anaheim, Burbank, Glendale, Imperial Irrigation District, Modesto Irrigation District, Palo Alto, Pasadena, Redding, Riverside, Roseville, San Francisco PUC, Silicon Valley Power, Turlock Irrigation District, and Vernon.
- Small POU's have annual electricity sales of less than 500 GWh: Alameda, Azusa, Banning, Biggs, Colton, Corona, Gridley, Healdsburg, Hercules, Lassen, Lodi, Lompoc, Merced Irrigation District, Moreno Valley, Needles, Pittsburg (Island), Plumas Sierra, Port of Oakland, Rancho Cucamonga, Shasta Lake, Trinity, Truckee Donner, and Ukiah.

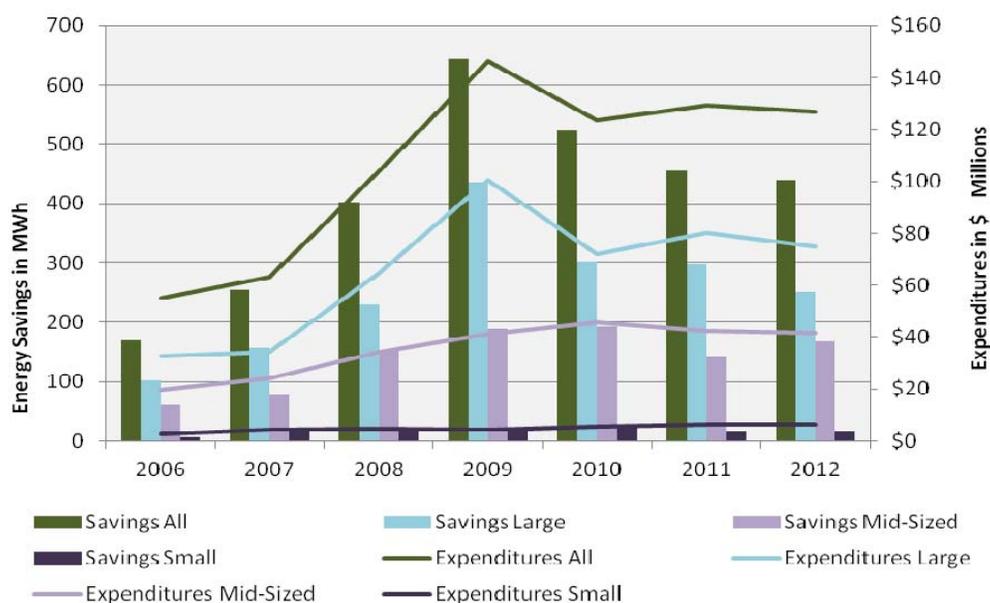
Figure 1 illustrates that overall energy efficiency program expenditures declined from 2009 to 2010 and then slightly recovered. The reasons for year-to-year changes in expenditures in energy savings can be different for each utility and dependent upon their unique characteristics, such as customer base, geographic location, and size. Although a few POU's increased their expenditures in 2011 and 2012, the overall decline and flat spending continued for the majority.

POU's attribute a downward trend in their annual electricity savings and peak demand reduction that began in 2009 to two factors. First, POU's cite a weak economy and consequent lower customer participation in efficiency programs, particularly for large and midsized utilities, which resulted in the lower reported savings. Second, there are diminished savings from programs/measures that saturated energy efficiency markets. Electricity savings from lighting programs, attributed to new statewide energy codes and standards, may cause future declines in reported savings, unless program strategies change.

11 See <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M088/K661/88661468.PDF>.

12 See <http://www.ncpa.com/current-issues/energy-efficiency-reports.html>.

Figure 1: POU Reported Electricity Savings and Program Expenditures



Source: *Energy Efficiency in California's Public Power Sector Status Reports, 2006–2013* at <http://www.ncpa.com/current-issues/energy-efficiency-reports.html>.

Through personal conversation with individual POUs, staff ascertained anecdotal information about fluctuations in program expenditures and electricity savings. For example, beyond the economic downturn, some POUs reported difficulty in promoting efficiency particularly to residential and large commercial customers, loss of commercial or industrial customers, and changing codes and standards. A few POUs indicated that they received positive responses to specific programs, such as lighting, but did not provide further details on increases in either spending or electricity savings. Many POUs did not provide any specific explanation for increases or decreases. Energy Commission staff will work with POUs to better understand reasons for year-to-year changes to program spending and electricity savings.

SMUD and LADWP are the two largest POUs, dominating electricity savings and peak demand reductions. In 2012, LADWP reported spending the bulk of its energy efficiency funds on nonresidential cooling, lighting, and comprehensive¹³ programs, a shift in program direction from the previous year.¹⁴ In May 2012, LADWP adopted a new energy efficiency budget, \$127 million in 2012–2013 and \$138 million in 2013–2014, and intends to promote energy efficiency aggressively across all customer segments and energy end uses as part of

¹³ Comprehensive programs can include multiple measures such as lighting, HVAC, shell (insulation), electronics, and appliances.

¹⁴ In October 2012, LADWP Commissioners approved a two-year electric rate increase for investments in renewable, efficiency, reducing ocean water cooling, and replacing or repairing aging power distribution infrastructure.

its long term supply side energy procurement strategy.¹⁵ In 2012, SMUD spent the majority of its funds on residential lighting programs.

Electricity savings in nonresidential lighting have consistently been one of the most successful means to reduce energy consumption in buildings. Utility program impact evaluations have demonstrated that, of all building efficiency options, lighting efficiency measures have overall the largest impact on both electricity savings and peak demand reductions. In particular, nonresidential programs account for more than half of the net peak demand reduction in the vast majority of POUs. **Table A-9, Table A-10, Table A-11, and Table A-12** in Appendix A show individual POU electricity savings and expenditures from 2007 to 2012 in both residential and nonresidential sectors.

¹⁵ *Next Century Power: Energy Efficiency for Los Angeles*, December 5, 2012, LADWP Presentation by David Jacot, P.E., Directory of Energy Efficiency.

CHAPTER 3: Assessing Publicly Owned Utility Energy Efficiency Progress

There are more than 40 POU's in the state providing roughly a quarter of California's electricity consumption and 2 percent of the state's natural gas supply.¹⁶ POU's range in size from the largest public utility in the nation, LADWP, to much smaller entities serving fewer than 500 customers such as Pittsburg Power (Island Energy). POU's are organized in various forms, including municipal districts, city departments, irrigation districts, and rural cooperatives. Municipal utilities may include territories outside city limits or may not serve the entire city. Rural cooperatives are owned by the customers they serve within their designated service area. Although POU's' individual budgets, efficiency targets, and projected and reported electricity savings significantly differ and, in many cases, are noticeably smaller than IOU's, their contribution toward achieving energy efficiency in the state is as important.

The section below contains staff's annual assessment of the POU progress toward achieving cost-effective energy efficiency using industry performance metrics¹⁷ including 1) electricity savings as a percentage of electricity consumption, 2) program expenditures as a percentage of utility revenue, 3) program expenditures versus reported electricity savings, 4) cost-effectiveness of energy efficiency programs, and 5) reported electricity savings and peak demand reduction versus targets.

Electricity Savings as a Percentage of Electricity Consumption

This indicator measures and compares the annually reported electricity savings at the portfolio level to total electricity sales in the utilities' service territories. Although electricity savings between 1 and 2.5 percent of total utility sales are considered to be exemplary,¹⁸ the Energy Commission recognizes that the goals and outcomes may vary from area to area and from a smaller to a larger utility. Differences in the composition of the consumer base can have a significant effect on electricity consumption in a specific POU territory. The Energy Commission's expectations for large and midsized POU's are higher because their resources and number of potential program participants should garner a larger share of the overall

¹⁶ The number of POU's reporting energy savings varies from year to year. In this report, staff assessed progress of 36 POU's.

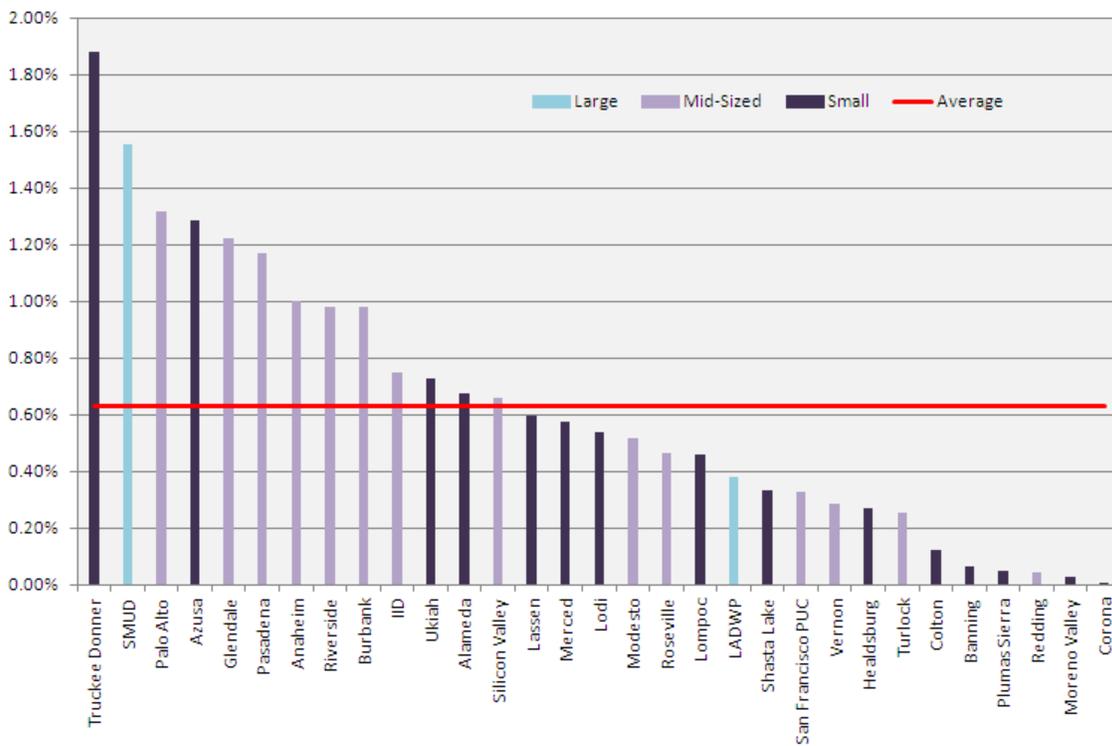
¹⁷ American Council for an Energy Efficient Economy, *The 2013 State Energy Efficient Scorecard*, November, 2013, Report Number E13k, Chapter 2, p. 16.

¹⁸ M. Kushler, York, D., and Witte, P., *Meeting Aggressive New State Goals for Utility-Sector Energy Efficiency: Examining Key Factors Associated with High Savings*, American Council for Energy Efficient Economy, Report Number U091, March 2009.

electricity savings. Small POU's have fewer efficiency options, but despite their smaller share they are more flexible in tailoring programs to their customer specific needs. When a particular efficiency measure reaches saturation with customers, smaller utilities may notice it sooner and make program adjustments quickly and earlier.

Figure 2 shows that POU's saved an average of about 0.6 percent of their total electricity consumption in 2012. Only seven POU's achieved and exceeded the 1 percent mark. Truckee Donner's percentage of electricity savings is the highest at 1.9 percent. **Table A-1** and **Table A-3** in Appendix A provide previous years' individual POU electricity consumption and electricity savings data used in this metric.

Figure 2: POU's Reported Electricity Savings as a Percentage of Electricity Consumption in 2012



Source: *Energy Efficiency in California's Public Power Sector Status Report*, March 2013 at <http://www.ncpa.com/current-issues/energy-efficiency-reports.html>, and EIA Electricity Retail Sales at <http://www.eia.gov/electricity/data.cfm>.

The E3 Reporting Tool¹⁹ has input data that individual POU's can adjust to suit their needs; however, the POU's do not report the setting changes to the Energy Commission. The lack of

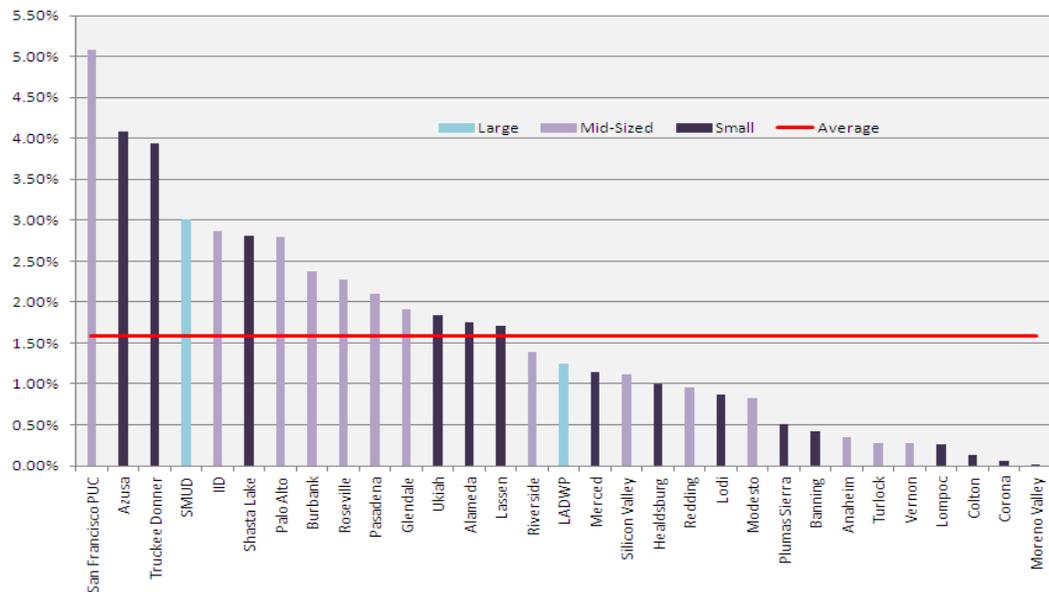
¹⁹ E3 stands for Energy + Environment Economics Inc. POU's use this tool, developed by E3, to calculate utility energy savings and total net benefits for energy efficiency programs and portfolios. The E3 calculators are publicly available through the Energy Efficiency Statistics website (eestats.cpuc.ca.gov), formerly known as Energy Efficiency Groupware Application (EEGA).

E3 input data hampers staff’s ability to adequately assess and evaluate POU progress related to this metric. In the past, staff requested that POUs include the E3 input data as part of their required annual reporting. Previously the POUs stated that the reason for withholding the E3 input settings was to protect customer identities. However, pursuant to the legislative requirements of AB 2021, the POUs must disclose to the Energy Commission methods and assumptions they use in calculating electricity savings. The E3 input data is necessary for staff to analyze the POU’s progress in meeting their electricity savings targets. The Energy Commission is willing to accommodate an aggregation or redaction adjustment of the E3 Reporting Tool, and continues to request the E3 calculator input data as part of the POUs’ annual reporting requirements.

Efficiency Program Expenditures as a Percentage of Revenue

As an indication of a utility’s commitment to energy efficiency, this metric assesses the amount of utility spending on energy efficiency programs as a percentage of its annual revenue. **Figure 3** shows POUs spent an average of 1.6 percent of their total revenue on energy efficiency programs in 2012. This is a slight increase from the 2011 average of 1.5 percent. Fourteen POUs are above average. San Francisco PUC and Azusa exceeded the 4 percent mark. **Table A-2** and **Table A-5** in Appendix A contain detailed POU revenue data and energy efficiency program expenditures reported for previous years.

Figure 3: POU Energy Efficiency Program Expenditures as Percentage of Revenue in 2012



Source: *Energy Efficiency in California’s Public Power Sector Status Report*, March 2013 at <http://www.ncpa.com/current-issues/energy-efficiency-reports.html>, and EIA Electricity Retail Sales at <http://www.eia.gov/electricity/data.cfm>.

By definition, energy efficiency reduces electricity demand and leads to a larger reduction in utility electricity sales and losses in revenue. Because some fixed costs associated with implementing energy efficiency cannot be fully recovered, the overall utility's financial model may be impacted. CPUC and IOUs addressed the issue of cost underrecovery by implementing automatic adjustment mechanisms that separate or "decouple" electricity sales from revenue to ensure that their revenue recovers regardless of the effect of energy efficiency programs on total electricity sales. Because POU's operate on a nonprofit basis and their goals and business models are different than IOUs, most POU's do not implement decoupling mechanisms. In 2012, LADWP approved an automatic rate adjustment mechanism, making it the first POU in the nation to decouple. In the case of LADWP, this increased certainty in the recovery of the utility's fixed costs is triggering a doubling of its energy efficiency incentive budget to \$265 million over the next two years.²⁰

Efficiency Program Expenditures and Reported Electricity Savings

This metric compares annual utility expenditures on energy efficiency programs to reported electricity savings. In 2012, as a group, POU's spent a total of \$127 million²¹ on energy efficiency programs and reported roughly 440 GWh in electricity savings. Large POU's reported combined expenditures close to \$75 million and jointly achieved 252 GWh in electricity savings. The midsized POU's reported \$45 million in combined program expenditures and jointly achieved 170 GWh in electricity savings. The small POU's jointly spent more than \$6.1 million and reported a combined 18 GWh in electricity savings.

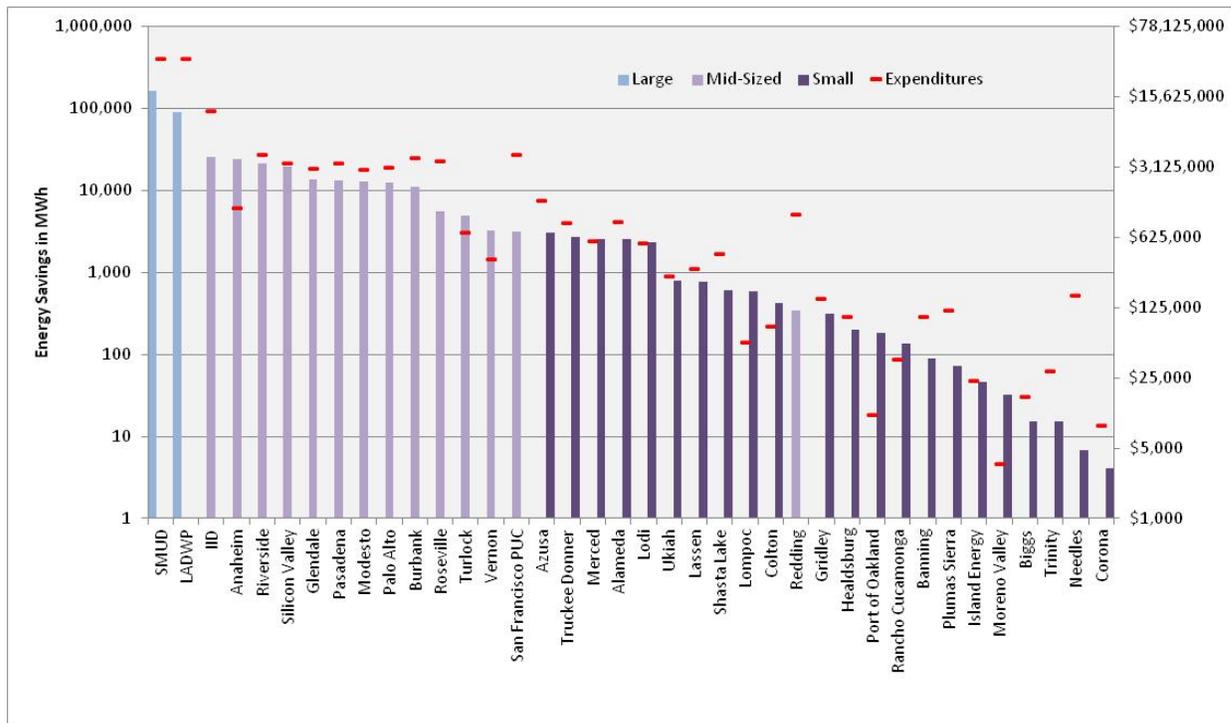
Figure 4 shows reported electricity savings²² and expenditures in POU service territories in 2012. POU's electricity savings, scaled on the left, range from the highest, 162 GWh to the lowest of 4 MWh. Program expenditures, scaled on the right, range from the highest \$37.5 million to \$3,000. **Table A-3** and **Table A-5** in Appendix A provide individual POU annual electricity savings and expenditures derived for this metric.

²⁰ See <http://www.neec.net/news/ladwp-adopts-decoupling>.

²¹ *Energy Efficiency in California's Public Power Sector Status Report*, March 2013 at <http://cmua.org/wpcmua/wp-content/uploads/2013/03/FINALv3-SB-1037-AB-2021-Report-Appendices.pdf>.

²² Sorted by POU with the highest reported electricity savings to the lowest.

Figure 4: POU Reported Electricity Savings and Program Expenditures in 2012



Source: *Energy Efficiency in California's Public Power Sector: A Status Report*. March 2013. See <http://www.ncpa.com/current-issues/energy-efficiency-reports.html>.

Although each POU provides a short summary of its programs and annual expenditures, budgets for individual programs are not included, and changes in reported electricity savings are not explained or linked to the program summary. Energy Commission staff is unable to ascertain why some programs were discontinued or added and, therefore, why reported electricity savings rise or fall when compared to previous years. Staff continues to work with the POUs to obtain more detailed information on program changes and improve analysis on how program changes affect reported electricity savings. With this information, staff would be better able to explain the increases or decreases in the POUs' annual expenditures and electricity savings.

Cost-Effectiveness of Energy Efficiency Programs

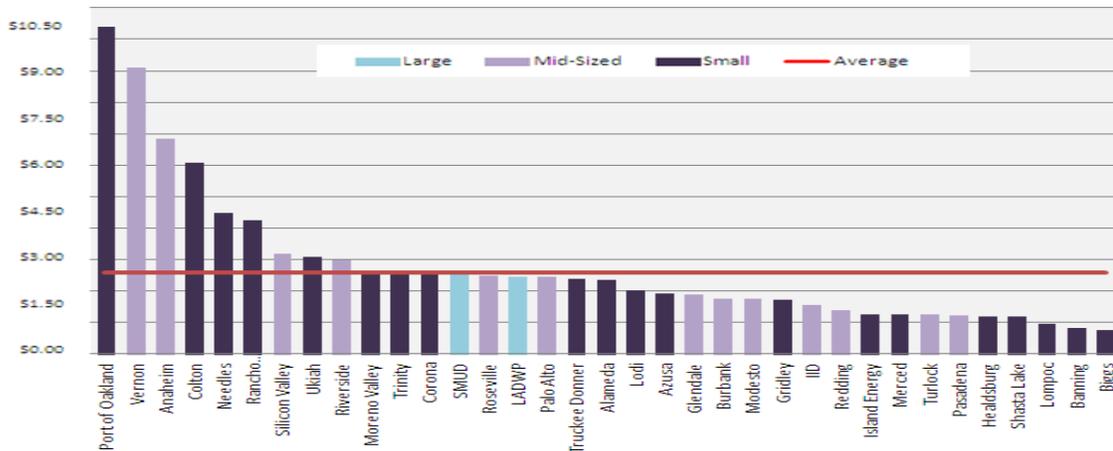
AB 2021 requires an assessment of the cost-effectiveness of POU programs. There are several frameworks to evaluate cost-effectiveness of energy efficiency, each differing from another in terms of results applicability, calculation inputs, and methods by which program

costs and benefits are computed.²³ POU provide the Total Resource Cost (TRC) test results, using a benefit cost ratio, derived from the E3 Reporting Tool. The TRC test calculates the present value of the benefits produced by the programs at the marginal cost compared to the total program and customer costs incurred to invest in the increased levels of efficiency. This metric reflects the cost-effectiveness of a utility’s energy efficiency at a portfolio level using deemed savings²⁴ estimates and costs.

Interpreting POU TRC results is challenging because a program that fails in one jurisdiction may pass in another as a result of differences in the specifics of test methodology. Skewed TRC test results are common because when the TRC test is applied to the entire portfolio of energy efficiency programs, POUs with a smaller number of more successful programs in the portfolio tend to have an artificially high TRC score. This may be the case for Port of Oakland and Vernon. Individual POU TRC results are listed in **Table A-6** of Appendix A. POU TRC test results are not independently verified, and their methodology and E3 input settings to calculate the TRC are not disclosed to the Energy Commission.

As **Figure 5** shows, the POUs’ combined program portfolio TRC averaged \$2.66 per \$1 spent in 2012, which is \$0.18 higher than the average TRC results reported in the previous year. When combined, the two largest POUs’ TRC results show a decrease of \$0.18 from the TRC reported in 2011. Midsized POUs reported an increase of \$0.67 per \$1 spent compared to the TRC reported from 2011, and small POUs reported an increase of \$0.68 per \$1 spent.

Figure 5: POU Reported Total Resource Cost Test Results in 2012



Source: *Energy Efficiency in California’s Public Power Sector Status Report*, March 2013. See <http://www.ncpa.com/current-issues/energy-efficiency-reports.html>.

23 In the 1980s, the CPUC and the Energy Commission jointly published and subsequently revised the *Standard Practice Manual* that describes various cost-effectiveness tests for publicly funded energy efficiency programs.

24 This method involves multiplying the number of installed measures by an agreed-upon (deemed) estimate of savings per measure, which is derived from Database for Energy Efficient Resources (DEER). See Appendix B.

In 2012, seven midsized and six small POU provided Program Administrator Cost test results. This test measures the net costs of demand side management programs as a resource option based on the costs incurred by the POU program administrator.²⁵ POU program cost-effectiveness is heavily weighted by low-cost lighting measures. The availability of certain lighting measure options are anticipated to change when federal and state lighting efficiency legislation takes effect in 2014. One way to offset the decrease in electricity savings from the legislative changes may be to expand programs that encourage deeper retrofits in existing homes.

Electricity Savings and Peak Demand Reduction vs. Adopted Targets

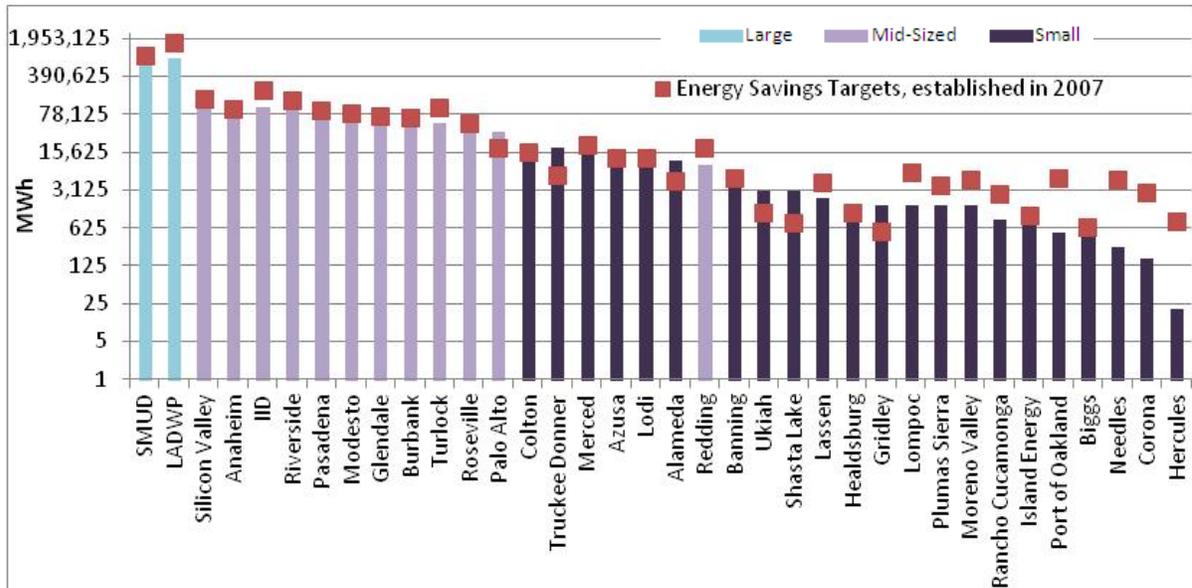
This metric shows progress toward achieving POU individual electricity savings and peak demand reduction targets. Following AB 2021, the Energy Commission established 10 year, 10 percent electricity savings and peak demand reduction targets for each POU in 2007. Every third year POU revised their electricity savings targets. With the passage of AB 2227, the Energy Commission and the POU will now adjust 10 year electricity savings and demand reduction targets every four years. In the 2013 CMUA report, LADWP targets were preliminary. LADWP expected to complete its potential study sometime in February 2014 and report to the Energy Commission in April. Availability of SMUD's completed potential study is unknown. Only when all potential studies and targets are received from all reporting POU and the IOUs can the Energy Commission work with the CPUC to establish a statewide efficiency goal.

Figure 6 compares reported cumulative six year (2007-2012) electricity savings to cumulative targets established in 2007. The cumulative (2007-2012) electricity savings target for 36 POU established in 2007 was 3,837 GWh. POU reported combined electricity savings of 2,705 GWh, achieving 70 percent of the projected electricity savings. From 2007 to 2012, SMUD and LADWP, the two largest POU, reported combined energy savings of 1,677 GWh, achieving 65 percent of their targeted 2,600 GWh in electricity savings. Twelve midsized utilities reported electricity savings of 910 GWh, achieving 81 percent of their targeted 1,118 GWh. Twenty two small POU targeted 119 GWh in electricity savings and reported 118 GWh, achieving 99 percent of their cumulative target. Better performance in midsized and small POU was primarily due to energy efficiency investments by Palo Alto, Anaheim, Glendale, Truckee Donner, and Alameda. Most utilities are on track to meet their energy efficiency targets. For individual POU electricity savings and target data, see **Table A-3** and **Table A-7** in

²⁵ The Program Administrative Cost test excludes any net costs incurred by the participant, but includes incentive costs. *California Standard Practice Manual, Economic Analysis of Demand-Side Programs and Projects*, CPUC, 2001.

Appendix A.

Figure 6: POU Reported Electricity Savings vs. AB 2021 2007 Targets (Cumulative From 2007 to 2012)



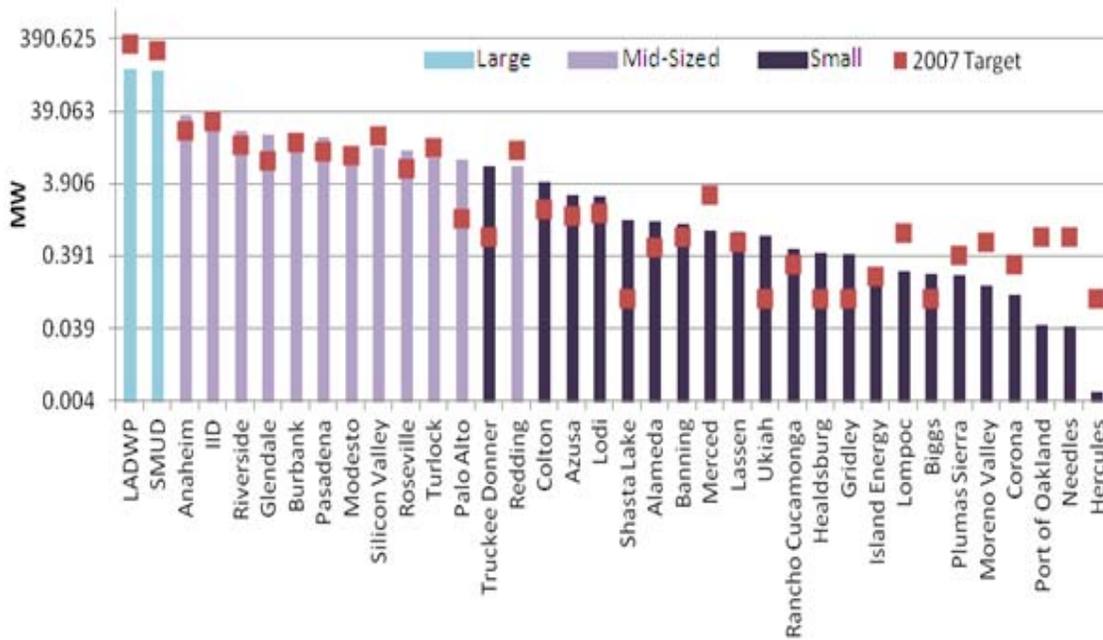
Source: *Energy Efficiency in California's Public Power Sector Status Report*, March 2013

See <http://www.ncpa.com/current-issues/energy-efficiency-reports.html> and *Achieving All Cost-Effective Efficiency for California*, December 2007. CEC-200-2007-019-SF, Appendix B.

Figure 7 compares reported cumulative six year (2007–2012) peak demand reduction in MW to cumulative targets established in 2007. Collectively, for the past six years, POUs provided peak demand reduction of about 511 MW. The cumulative peak demand reduction target was about 757 MW, thus POUs achieved 68 percent of their target.²⁶ From 2007 to 2012, SMUD and LADWP reported peak demand reduction of 293 MW, achieving only half of their targeted 589 MW in peak demand reduction. The midsized utilities reported a peak demand reduction of 194 MW, exceeding their cumulative target by 26 percent. Midsized POUs targeted a combined peak demand reduction of 153 MW. Small POUs reported a peak demand reduction of 25 MW, exceeding their target by 72 percent. Small POUs targeted 14 MW demand reduction. Better performance in midsized and small POUs was primarily due to investments in energy efficiency by Glendale, Palo Alto, Truckee Donner, and Ukiah. For individual POU reported peak demand reduction and target data, see **Table A-4** and **Table A-8** in Appendix A.

²⁶ SMUD's peak annual targets were preliminary.

Figure 7: POUs Reported Peak Demand Reduction vs. AB 2012 2007 Targets (Cumulative From 2007 to 2012)



Source: *Energy Efficiency in California's Public Power Sector: A Status Reports*. See <http://www.ncpa.com> and *Achieving All Cost-Effective Efficiency for California*, December 2007, CEC-200-2007-019-SF Appendix B.

Staff's assessment of the POUs' energy savings performance of the past six years revealed that several small and midsized POUs are likely to reach the 10 percent energy reduction goal; however, just as many are likely to fall slightly short.

CHAPTER 4: Evaluation, Measurement, and Verification of Publicly Owned Utilities' Efficiency Program Savings

Evaluation, measurement, and verification (EM&V) is important for many reasons. The internal management of each POU needs to determine if energy efficiency programs are cost-effective relative to other supply options and if they produce reliable resource savings. Taxpayers, ratepayers, legislators, regulators, and industry shareholders want to know if energy efficiency programs are delivering energy savings and other benefits, such as air pollution and GHG reductions and enhanced electric grid reliability. Furthermore, EM&V results are essential to the Energy Commission's ability to assess POU progress toward meeting their established targets and can help POU improve their efficiency programs to further reduce forecasted electricity consumption. AB 2021 Section 3(e), amended as Section 9505(d) of the Public Utilities Code, requires each POU to make available to its customers, and annually report to the Energy Commission, the results of any independent evaluation that measures and verifies the savings from energy efficiency and demand reduction programs.

Under AB 2227, the POU are required to provide both expected and actual energy savings estimates to the Energy Commission. The term "actual" implies that the reported energy savings estimates were independently verified. However, the POU do not consistently perform or report results of their EM&V studies. Their reported energy savings are derived from the E3 calculator, the input settings of which are not disclosed to the Energy Commission. As discussed in Chapter 3, without E3 calculator input settings, it is difficult for staff to assess the veracity of reported energy savings and the POU's progress toward meeting their targets.

CMUA reported in its March 2013 update that 27 POU completed 78 EM&V studies in 2007-2012.²⁷ Staff provides a tally of the completed POU's EM&V reports in the **Table A-13** in Appendix A of this report. A short review of these studies suggests that these are predominantly process evaluation reports for program areas that vary year to year. Furthermore, EM&V planning cycles for each POU vary, meaning that some POU perform studies every year, others complete studies every other year. There are a few POU who have not reported any EM&V results. Some POU expressed concerns that the limited pool of professional evaluators and high costs associated with hiring an evaluator, especially for small POU, prevent them from conducting EM&V studies annually. All of these unresolved issues make it difficult to accurately assess statewide POU progress toward meeting energy efficiency savings and demand reduction targets. Currently, the POU's

²⁷ For published POU EM&V reports and studies, see <http://www.ncpa.com/current-issues/energy-efficiency-em-v-reports.html>].

EM&V studies are too few to provide enough information for a comprehensive estimate of verified savings.

Several POU are collaborating to develop a technical reference manual (TRM). The POU will use it as an alternative to DEER. The TRM will have information on typical measures that are commonly installed in the POU service territories and will aid POU in measuring energy efficiency program effectiveness and improve reporting program savings in a consistent and comprehensive manner. Silicon Valley Power's technical reference manual²⁸ serves as a prototype. The TRM is a more short term solution, while there are efforts in establishing a technical forum in the long run.

Status of the Revision of the Evaluation, Measurement, and Verification Handbook

The Energy Commission and POU made great progress working together during 2012 and 2013; however, a consistent framework for reporting POU-verified energy savings and evaluation methods remains an issue. POU evaluation reports vary from year to year in their level of detail, comprehensiveness, and consistency, making the data problematic for use in Energy Commission reports and forecasts.

In 2009, with support of a consultant, the Energy Commission developed initial EM&V guidelines for POU to clarify the reporting requirements needed to improve EM&V impact studies. The Energy Commission hosted two workshops for POU to discuss application of the guidelines and their EM&V approaches. The workshops focused on key information needed for obtaining the greatest value from evaluation studies for POU and Energy Commission staff. Some POU representatives indicated that size, customer base diversity, and program types, made the "one size fits all" approach outlined in the guidelines impractical. POU representatives are concerned that expending limited personnel and financial resources on EM&V means less time for implementing the programs and reduced efficiency program budgets.

Based on this input, the Energy Commission staff initiated revision of the EM&V guidelines to address POU concerns. The intent of the revision remains the same — to assist and encourage the POU to provide verified energy savings estimates to the Energy Commission. The overall goal is improving the transparency of methods used to develop program savings estimates and the overall credibility of the reported energy savings. A 2012 survey, designed to document POU experiences with the initial guidelines, identified these lessons:

²⁸ TRM is designed to measure energy efficiency program effectiveness and report program savings in a consistent and comprehensive manner. Silicon Valley *Technical Reference Manual* is one of the prototypes. <http://siliconvalleypower.com/index.aspx?page=2472>.

- There was limited use of the EM&V guidelines by the majority of POU's energy efficiency program administrators. The guidelines did not acknowledge or address the diverse characteristics of POU's, such as customer base, climate, or local economic factors, which caused skepticism about its value. Rigorous EM&V criteria applicable to larger POU's like SMUD and LADWP do not work for small POU's like Lompoc and Biggs.
- Three-fourths of the respondents said revised guidelines should provide clear expectations from the Energy Commission about the contents and rigor of EM&V.
- Roughly half of the respondents recommended guidelines that accommodate individual needs relative to their size, which is based on their annual electricity sales.
- The majority of comments were on the shortcomings of the E3 Reporting Tool and DEER database. The POU's feel that the E3 calculator does not capture full benefits associated with energy efficiency programs. For example, societal benefits are not considered. Furthermore, the POU's feel the E3 calculator undervalues critical peak demand reduction programs and overvalues electricity savings. Programs that focus on either peak demand reduction or that have societal benefits do not receive full credit in the model. POU's believe that the use of net electricity savings, as derived in the E3 calculator, is an inappropriate basis for comparison with electricity savings results from EM&V studies.

In February 2013, draft-revised guidelines were provided to the POU's for comments and two EM&V workshops were held in Northern and Southern California. The overall feedback from the two workshops was positive, and participants supported the EM&V process, suggesting more communication with greater frequency, via industry and association meetings, to maintain an open communication process. Participants recognized that changes to the current process can be resource- and time-intensive, but finding solutions that meet both Energy Commission and POU needs is important for everyone. The following changes to the EM&V framework are based on the survey and workshops:

- Consistent reporting of verified savings by all POU's in formats defined in terms of annual retail electricity sales.
- Basic information related to program impacts and costs, along with a summary of how those impacts and costs were estimated and/or obtained.
- Cost-effectiveness results of individual programs and overall portfolio, along with sources of evaluation methods and documentation.

Because the reliability of POU energy savings data is an important component in the Energy Commission's load forecasts, and because EM&V leads to program improvements and verifies actual energy savings, the Energy Commission will continue to emphasize the importance and benefits of EM&V to POU's. The Energy Commission aims to complete the

revision of the EM&V guidelines in 2014 for POU's to use in their next EM&V cycle. The guidelines will be available on the Energy Commission's website and published as a staff report, titled *Evaluation, Measurement and Verification: Handbook for Publicly Owned Utilities*.

The Energy Commission staff will hold workshops to introduce the handbook. POU's will have opportunities to provide feedback on an ongoing basis. The handbook will request basic documentation regarding EM&V activities. For example, for the 2014-2015 reporting period, all POU's should provide information related to program-verified impacts and costs, along with a summary of how those impacts and costs were estimated. All POU's should include in a table format:

- Name of the evaluated program, for example, *Residential Lighting and HVAC*.
- Type of evaluation (process, impact, or both).
- Share of the program energy savings in portfolio, for example, *45 percent*
- Claimed electricity savings in KWh.
- Verified electricity savings in KWh.
- Realization rate (claimed/verified).
- The report title/author/ start and completion dates.
- POU contact information.

For a program evaluation activity, all POU's should select from nine defined evaluation activity types. For process and impact evaluation activities, all POU's should provide a short summary of key findings and conclusions of their EM&V activities.

In addition to the basic information listed above, midsized and large POU's should provide program and portfolio TRC test results and a cost-effectiveness breakdown, subtotaled by program and sector and totaled for the entire portfolio. For a specific program such as *Residential Lighting*, midsized and large POU's should provide, in a table format, sources and documentation of evaluation methods such as:

- Name/date of program evaluation completed.
- Evaluated savings parameters (hours of usage and change in wattage).
- Sampling approach type (stratified, population count, and so forth)
- Evaluation method type for gross impacts.
- Evaluation method type for net impacts.

CHAPTER 5: Staff Conclusions and Recommendations

Energy Commission staff examined inconsistency of the POU's responses to prior *IEPR* recommendations that focused on improving energy savings data reporting and EM&V activities. Staff analysis of statewide progress was challenging because of two main findings. First, POU EM&V reports are not exhaustive, and their different planning cycles (yearly vs. fiscal) do not provide verified savings, making staff analysis of statewide progress difficult. Second, POU's who actively participate in Energy Commission workshops and CMUA reporting activities tend to be more responsive to staff recommendations.

Transparency is critical for the annual data reported by POU's about their energy efficiency programs. Improving transparency will contribute to the analysis by Energy Commission staff and others whose mission is to improve California's energy efficiency. Better transparency can be accomplished with more complete disclosure of funding sources used for energy efficiency and demand reduction programs. Without this information, it is difficult to determine whether funding sources are sufficient for utilities to meet goals for improving energy efficiency and demand reduction. If Energy Commission staff can determine that funding is not adequate, specific recommendations could be made that could improve funding sources. POU's have used a variety of funding sources, including resource procurement budgets, federal²⁹ or state funding, grants, and local governing boards. A large part of POU energy efficiency funding comes from the Public Goods Charge (PGC)³⁰ collected from customer utility bills. Not all POU funding sources are described with sufficient detail in the annual CMUA report. In the next report to the Energy Commission, the POU's should disclose detailed information about their energy efficiency and demand reduction funding so that all investment sources can be tracked for analysis.

Disclosing the input settings of the E3 Reporting Tool and any other tools used to assess energy efficiency and demand reduction programs would improve data analysis and help address challenges in boosting the overall ability to accomplish AB 2021 goals. Disclosing E3 calculator inputs used to determine energy efficiency savings are important for improving the POU's reporting transparency.

As discussed in Chapter 4 of this report, staff recommends improvements in the overall evaluation planning approach for the POU's. This will include a consensus approach to

²⁹ Such as the American Recovery and Reinvestment Act of 2009 (ARRA).

³⁰ A public goods charge that is collected from each utility customer pursuant to Section 385 of the Public Utilities Code funds POU energy efficiency programs (NCPA & SCCPA, *Energy Efficiency in California's Public Power Sector, Status Report 2013*, page 20, <http://www.ncpa.com/current-issues/energy-efficiency-reports.html>).

determine what type and level of independent verification of measure installations may be needed, and determining a frequency to review *ex ante* savings in the E3 Reporting Tool. The Energy Commission aims to complete a new EM&V handbook in 2014 for the POUs to use in reporting their EM&V results in the next reporting cycle. The handbook would be electronically accessible from the Energy Commission website. Staff needs verified energy savings to more accurately analyze the POUs progress in meeting their targets.

Over the years, California POUs reported making energy efficiency investments and striving for both energy savings and peak demand reduction. Building upon this progress will require stimulating new program designs, tracking program accomplishments, verifying energy savings and peak demand reduction, improving future energy savings estimates, and using this information to achieve higher energy savings.

The Energy Commission staff makes the following recommendations:

- *Improve disclosure of energy efficiency and demand reduction funding sources.* AB 2021 requires POUs disclose to the Energy Commission sources of funding for investments in energy efficiency and demand reduction programs.
- *Disclose methods and assumptions behind energy savings estimates.* POUs should disclose E3 Reporting Tool input settings. Staff would use this information to more accurately analyze the POU progress in meeting their energy savings targets. The Energy Commission is willing to accommodate an aggregation or redaction adjustment of the E3 Reporting Tool if necessary for confidentiality purposes. The Energy Commission supports the POUs' efforts to finish their TRM by the end of 2014.
- *Improve evaluation, measurement, and verification process.* Energy Commission staff plans to work with POUs to improve the EM&V process and provide an EM&V handbook for the POUs to use in future EM&V cycles.

List of Acronyms

Acronym	Definition
AB 2021	Assembly Bill 2021
AB 2227	Assembly Bill 2227
AB 32	Assembly Bill 32
CMUA	California Municipal Utilities Association
CPUC	California Public Utilities Commission
EE	Energy efficiency
EIA	Energy Information Administration
EM&V	Evaluation, measurement, and verification
GHG	Greenhouse gas
GWh	Gigawatt hour
HVAC	Heating, ventilation, and air conditioning
<i>IEPR</i>	<i>Integrated Energy Policy Report</i>
IOU	Investor-owned utility
LADWP	Los Angeles Department of Water and Power
MW	Megawatt
MWh	Megawatt hour
NCPA	Northern California Power Agency
PG&E	Pacific Gas and Electric Company
PGC	Public Goods Charge
POU	Publicly owned utility
SB 1037	Senate Bill 1037
SB 488	Senate Bill 488
SDG&E	San Diego Gas & Electric Company
SMUD	Sacramento Municipal Utilities District
SoCalGas	Southern California Gas Company
TRC	Total Resource Cost

APPENDIX A:

Individual Publicly Owned Utilities Reported Data

Table A-1: POUs Reported Electricity Sales/Consumption (GWh)

	2006	2007	2008	2009	2010	2011	2012
Large POU							
LADWP	24,314	24,317	24,839	23,789	22,939	23,152	23,601
SMUD	10,799	10,819	10,917	10,692	10,284	10,385	10,455
Midsized POU							
Anaheim Public Utility	2,598	2,586	2,602	2,479	2,362	2,377	2,437
Burbank Water and Power	1,138	1,188	1,181	1,184	1,136	1,119	1,121
Glendale Water and Power	1,166	1,140	1,155	1,120	1,076	1,085	1,109
Imperial Irrigation District	3,332	3,358	3,378	3,316	3,218	3,285	3,387
Modesto Irrigation District	2,560	2,564	2,604	2,528	2,429	2,446	2,508
Palo Alto, City of	966	978	992	976	950	949	935
Pasadena Water and Power	1,230	1,220	1,269	1,213	1,152	1,140	1,140
Redding Electric Utility	799	803	798	786	765	760	770
Riverside Public Utilities	2,142	2,155	2,188	2,085	1,996	2,047	2,172
Roseville Electric	1,216	1,238	1,243	1,233	1,179	1,173	1,198
San Francisco PUC	1,268	860	982	973	1,011	967	966
Silicon Valley Power	2,719	2,827	2,858	2,800	2,772	2,862	2,922
Turlock Irrigation District	1,948	1,981	2,023	2,002	1,907	1,943	1,946
Vernon, City of	1,162	1,226	1,208	1,125	1,138	1,144	1,145
Small POU							
Alameda Municipal Power	378	389	393	388	383	383	374
Azusa Light and Water Department	245	256	252	253	246	239	237
Banning Electric Utility	151	153	150	136	133	133	139
Biggs, City of	16	17	18	16	16	17	17
Colton Public Utilities	350	362	356	339	330	340	349
Corona	60	70	81	80	75	73	74
Gridley Municipal Utility	33	34	36	34	34	33	35
Healdsburg, City of	73	71	77	33	78	75	74
Hercules	17	16	16	17	17	16	16
Lassen	130	131	133	147	134	129	131
Lodi Electric Utility	460	456	450	365	358	421	436
Lompoc	135	138	134	146	131	129	128
Merced Irrigation District	375	424	432	447	449	449	448
Moreno Valley Utility	42	55	73	88	96	106	122
Needles	63	62	58	54	38	43	76
Plumas Sierra	156	163	160	155	151	151	147
Port of Oakland	-	59	50	50	47	45	47
Rancho Cucamonga Utility	60	58	63	66	65	64	67
Shasta Lake City Utility	186	191	181	200	175	191	181
Trinity	87	89	90	90	90	95	95
Truckee Donner Public Utility	144	146	148	153	157	150	146
Ukiah Public Utility Department	116	115	185	118	113	113	111
All POUs Combined	61,340	61,840	62,760	60,794	58,686	59,279	60,498

Source: See <http://www.eia.gov/electricity/data.cfm#sales>.

Table A-2: POU's Revenue From Electricity Sales (Millions of Dollars)

	2006	2007	2008	2009	2010	2011	2012
Large POU							
LADWP	2,350	2,425	2,650	2,794	2,840	2,931	3,009
SMUD	1,084	1,071	1,151	1,134	1,184	1,237	1,245
Midsized POU							
Anaheim Public Utility	241	246	298	313	320	322	346
Burbank Water and Power	143	154	156	151	149	157	159
Glendale Water and Power	159	169	187	178	177	153	157
Imperial Irrigation District	411	429	450	441	425	382	394
Modesto Irrigation District	251	257	284	300	308	335	354
Palo Alto, City of	86	87	92	105	112	111	109
Pasadena Water and Power	141	152	171	165	157	160	162
Redding Electric Utility	75	78	84	89	94	100	110
Riverside Public Utilities	228	249	272	273	275	284	298
Roseville Electric	106	115	126	134	141	152	155
San Francisco PUC	62	66	76	81	78	82	81
Silicon Valley Power	221	235	247	252	268	299	303
Turlock Irrigation District	187	198	213	241	233	238	249
Vernon, City of	94	103	105	105	116	117	136
Small POU							
Alameda Municipal Power	47	49	49	48	48	50	50
Azusa Light and Water Department	28	29	31	31	30	33	35
Banning Electric Utility	19	21	24	23	24	25	24
Biggs, City of	1	2	2	2	2	3	2
Colton Public Utilities	43	50	54	55	56	57	60
Corona	18	19	20	18	16	16	10
Gridley Municipal Utility	4	5	5	5	5	6	6
Healdsburg, City of	9	9	9	10	10	10	10
Hercules	-	-	-	2	3	3	3
Lassen	17	19	21	21	20	18	18
Lodi Electric Utility	59	66	69	74	70	62	62
Lompoc	13	16	17	18	20	21	22
Merced Irrigation District	39	45	49	51	49	50	51
Moreno Valley Utility	7	8	11	12	14	14	18
Needles	8	9	8	7	6	7	8
Pittsburg (Island Energy)	-	-	-	-	-	-	3
Plumas Sierra	15	18	22	23	24	23	23
Port of Oakland	-	-	8	7	7	8	8
Rancho Cucamonga Utility	-	-	8	9	9	9	9
Shasta Lake City Utility	15	18	20	16	15	15	15
Trinity	7	7	7	7	7	7	7
Truckee Donner Public Utility	19	20	22	22	22	23	22
Ukiah Public Utility Department	14	14	14	14	13	14	14
All POU's Combined	6,221	6,458	7,032	7,231	7,347	7,534	7,633

Source: See <http://www.eia.gov/electricity/data.cfm#sales>.

Table A-3: POU Reported Electricity Savings (MWh)

	2006	2007	2008	2009	2010	2011	2012	Cumulative
Large POU								
LADWP	16,561	61,641	115,519	287,574	147,963	127,246	89,487	845,991
SMUD	84,963	95,950	114,662	148,028	155,651	170,641	162,381	932,276
Midsized POU								
Anaheim Public Utility	12,766	8,724	16,808	25,805	36,356	13,103	24,337	137,899
Burbank Water and Power	5,574	5,607	8,719	8,574	10,143	12,244	10,952	61,813
Glendale Water and Power	8,480	8,510	13,548	11,803	16,136	11,764	13,519	83,760
Imperial Irrigation District	2,093	8,118	30,644	11,285	16,917	10,034	25,305	104,396
Modesto Irrigation District	3,222	5,561	16,129	14,681	16,800	11,942	12,931	81,266
Palo Alto, City of	1,877	4,711	4,399	4,668	5,270	6,457	12,302	39,684
Pasadena	4,501	4,238	8,164	30,064	14,559	12,244	13,337	87,107
Redding Electric Utility	3,965	1,677	1,640	2,297	2,216	723	345	12,863
Riverside Public Utilities	3,117	5,843	7,260	16,052	19,185	22,396	21,244	95,097
Roseville Electric	4,569	4,326	9,314	8,584	10,998	8,634	5,570	51,995
San Francisco PUC	-	-	-	-	-	3,634	3,142	6,776
Silicon Valley Power	4,687	10,889	24,509	39,628	30,593	24,576	19,225	154,107
Turlock Irrigation District	6,883	9,206	10,937	13,054	12,253	4,330	4,877	61,540
Vernon, City of	44	230	935	2,436	1,737	2,128	3,263	10,773
Small POU								
Alameda Municipal Power	279	921	2,135	2,211	1,326	1,433	2,527	10,832
Azusa Light and Water	1,897	1,041	2,352	2,145	2,099	2,575	3,036	15,145
Banning Electric Utility	96	253	634	3,030	1,890	141	88	6,132
Biggs, City of	35	48	133	111	37	81	15	460
Colton Public Utilities	943	10,247	1,583	2,109	7,579	84	420	22,965
Corona	13	98	23	7	3	29	4	177
Gridley Municipal Utility	10	85	24	70	381	237	312	1,119
Healdsburg, City of	5	152	236	361	504	237	198	1,693
Hercules	-	-	8	10	2	-	-	20
Lassen	77	90	123	478	528	161	778	2,235
Lodi Electric Utility	889	383	3,091	1,674	1,929	2,905	2,333	13,204
Lompoc	138	102	304	392	166	83	586	1,771
Merced Irrigation District	142	3,773	1,871	1,536	3,094	3,321	2,568	16,305
Moreno Valley Utility	245	44	298	285	502	439	32	1,845
Needles	18	1	72	186	3	6	7	293
Pittsburg (Island Energy)	-	-	10	449	101	138	46	744
Plumas Sierra	90	487	422	231	362	51	73	1,716
Port of Oakland	879	53	280	-	-	-	183	1,395
Rancho Cucamonga	134	57	359	13	86	212	135	996
Shasta Lake	37	47	30	286	1,266	725	602	2,993
Trinity	22	19	12	15	7	9	15	99
Truckee Donner	47	604	4,456	3,576	4,007	3,400	2,735	18,825
Ukiah Public Utility	22	30	279	553	281	1,096	802	3,063
All POU's Combined	169,320	253,766	401,922	644,261	522,930	459,459	439,712	2,891,370
% of Target Achieved	50%	66%	100%	74%	66%	63%	71%	

Source: *Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013*. See <http://www.ncpa.com>.

Table A-4: POU Reported Peak Demand Reduction (MW)

	2006	2007	2008	2009	2010	2011	2012	Cumulative
Large POU								
LADWP	11.7	13.6	21.8	50.9	28.1	19.4	15.3	160.8
SMUD	21.5	22.0	23.1	25.7	27.8	23.4	21.6	165.2
Midsized POU								
Anaheim Public Utility	3.0	3.1	8.0	8.4	2.2	4.3	8.2	37.4
Burbank Water and Power	1.0	1.1	2.0	3.1	2.4	4.3	4.4	18.2
Glendale Water and Power	1.5	1.4	2.4	2.6	4.6	6.1	1.5	20.2
Imperial Irrigation District	1.0	3.0	8.8	3.0	2.4	2.9	6.4	27.5
Modesto Irrigation District	1.3	1.1	2.8	2.4	2.1	1.8	2.0	13.6
Palo Alto, City of	0.2	1.1	0.7	1.5	3.4	0.6	1.1	8.5
Pasadena	1.4	1.2	1.6	5.4	3.9	2.1	2.5	18.1
Redding Electric Utility	1.7	1.3	1.2	1.5	1.1	1.2	0.5	8.5
Riverside Public Utilities	0.7	1.4	1.8	3.6	3.7	5.1	5.5	21.7
Roseville Electric	2.0	1.0	2.0	2.2	2.2	2.0	1.8	13.2
Silicon Valley Power	0.8	0.8	1.1	2.2	2.6	2.2	3.0	12.7
Turlock Irrigation District	3.1	1.9	1.7	1.3	1.9	0.6	1.1	11.7
Small POU								
Alameda Municipal Power	-	0.1	0.2	0.1	0.2	0.2	0.3	1.2
Azusa Light and Water	0.4	0.2	0.4	0.3	0.7	0.5	0.7	3.2
Banning Electric Utility	-	0.1	0.1	0.4	0.2	0.1	0.1	1.1
Biggs, City of	-	-	-	-	-	0.2	-	0.2
Colton Public Utilities	0.2	1.8	0.6	0.7	0.8	-	0.1	4.2
Corona	-	-	-	-	-	0.1	-	0.1
Gridley Municipal Utility	-	-	-	-	0.1	0.1	0.2	0.4
Healdsburg, City of	-	-	0.1	0.1	0.1	0.1	0.1	0.4
Hercules	-	-	-	-	-	-	-	-
Lassen	-	0.1	0.2	0.1	0.1	0.1	0.3	0.9
Lodi Electric Utility	0.4	0.1	0.1	0.1	0.6	0.8	0.9	2.9
Lompoc	0.1	-	0.1	-	-	-	0.1	0.3
Merced Irrigation District	-	-	0.3	0.1	0.3	-	0.1	0.9
Moreno Valley Utility	0.1	-	-	-	0.1	-	-	0.2
Needles	-	-	-	-	-	-	-	0.1
Pittsburg (Island Energy)	-	-	-	0.1	0.1	-	-	0.3
Plumas Sierra	-	-	-	-	0.1	-	-	0.2
Port of Oakland	0.1	-	-	-	-	-	-	0.1
Rancho Cucamonga	0.1	-	0.4	-	-	-	-	0.5
Shasta Lake	-	-	-	0.1	0.2	0.3	0.7	1.3
Trinity	-	-	-	-	-	-	-	-
Truckee Donner	-	0.1	0.9	0.9	1.2	1.1	2.6	6.9
Ukiah Public Utility	-	-	0.1	0.1	0.1	0.3	0.2	0.8
All POU's Combined	52.6	56.7	82.6	117.0	93.4	8-	81.3	563.6
All POU's % of Target Achieved	65%	75%	94%	65%	56%	56%	68%	

Source: *Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013*. See <http://www.ncpa.com>.

Table A-5: POU's Reported Program Expenditures (Thousands of Dollars)

	2006	2007	2008	2009	2010	2011	2012	Cumulative
Large POU								
LADWP	10,908	12,550	35,94	67,564	44,451	49,529	37,276	258,220
SMUD	21,632	21,939	28,96	33,052	27,682	30,782	37,521	201,573
Midsized POU								
Anaheim Public Utility	1,148	2,046	3,655	4,274	4,596	3,329	1,223	20,271
Burbank Water and Power	1,867	1,723	2,720	3,356	4,132	3,672	3,790	21,260
Glendale Water and Power	2,903	2,886	2,947	3,475	3,692	4,467	2,997	23,367
Imperial Irrigation District	861	3,249	4,957	1,919	4,282	6,306	11,281	32,855
Modesto Irrigation District	1,938	2,154	3,139	3,406	3,647	2,673	2,897	19,854
Palo Alto, City of	835	1,061	1,485	1,786	2,089	2,206	3,042	12,504
Pasadena Water and Power	1,258	1,628	1,357	5,799	4,302	3,112	3,412	20,868
Redding Electric Utility	1,618	1,624	2,305	1,735	1,869	1,199	1,050	11,400
Riverside Public Utilities	812	1,945	2,739	4,239	5,962	6,549	4,139	26,385
Roseville Electric	1,824	1,214	2,058	2,641	2,274	2,633	3,528	16,172
San Francisco PUC	-	-	-	-	-	3,550	4,135	7,685
Silicon Valley Power	2,471	3,602	5,803	6,601	7,146	4,956	3,387	33,966
Turlock Irrigation District	1,544	1,021	1,144	1,411	1,382	747	704	7,953
Vernon, City of	9	92	121	543	215	289	375	1,644
Small POU								
Alameda Municipal Power	97	414	415	510	579	654	882	3,551
Azusa Light and Water	503	413	758	551	631	1,113	1,440	5,409
Banning Electric Utility	115	53	179	398	336	256	100	1,437
Biggs, City of	19	22	40	34	28	1	16	160
Colton Public Utilities	296	849	301	341	664	77	82	2,610
Corona	50	37	43	40	19	43	8	240
Gridley Municipal Utility	44	88	54	97	154	152	151	740
Healdsburg, City of	8	109	120	129	150	94	101	711
Hercules	-	-	2	1	1	1	-	5
Lassen	69	181	148	201	321	230	305	1,455
Lodi Electric Utility	475	218	415	247	727	640	542	3,264
Lompoc	44	64	123	137	76	46	56	546
Merced Irrigation District	301	544	438	329	547	699	577	3,435
Moreno Valley Utility	65	15	8	8	31	41	3	171
Needles	22	3	165	165	150	150	164	819
Pittsburg (Island Energy)	-	-	1	40	3	20	23	87
Plumas Sierra	292	666	386	201	180	108	118	1,951
Port of Oakland	44	80	126	-	-	-	11	261
Rancho Cucamonga	20	100	160	27	85	62	38	492
Shasta Lake City Utility	66	68	65	78	154	344	421	1,196
Trinity	58	38	27	32	27	33	29	244
Truckee Donner	90	370	493	577	734	968	871	4,103
Ukiah Public Utility	104	83	105	149	113	593	253	1,400
All POU's Combined	54,410	63,149	103,909	146,093	123,431	132,324	126,948	750,264

Source: *Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013*. See <http://www.ncpa.com>.

Table A-6: POU's Reported Total Resource Cost (TRC)

	2007	2008	2009	2010	2011	2012	Cumulative/ Average
Large POU							
LADWP	3.72	3.5	3.77	3.12	2.50	2.45	3.18
SMUD	1.33	1.93	2.51	2.82	2.85	2.54	2.33
Midsized POU							
Anaheim Public Utility	5.01	5.59	7.63	7.36	4.35	6.84	6.13
Burbank Water and Power	1.80	3.95	3.95	1.41	1.26	1.76	2.36
Glendale Water and Power	1.57	2.39	2.41	2.74	1.02	1.90	2.01
Imperial Irrigation District	3.60	3.24	5.60	1.47	1.54	1.55	2.83
Modesto Irrigation District	1.91	2.71	2.01	2.88	2.13	1.76	2.23
Palo Alto, City of	2.83	2.43	2.45	1.92	1.32	2.45	2.23
Pasadena Water and Power	2.66	2.67	2.68	1.53	1.10	4.65	2.55
Redding Electric Utility	1.30	1.84	2.12	2.82	1.07	1.38	1.76
Riverside Public Utilities	5.24	4.05	4.20	3.74	1.77	2.99	3.67
Roseville Electric	2.00	3.49	3.89	2.88	4.30	2.49	3.18
San Francisco PUC	-	-	-	-	1.18	1.82	1.50
Silicon Valley Power	2.07	4.38	5.60	2.67	2.22	3.19	3.36
Turlock Irrigation District	4.30	4.53	3.61	2.18	1.45	1.26	2.89
Vernon, City of	4.29	6.33	6.53	6.88	4.72	9.10	6.31
Small POU							
Alameda Municipal Power	1.66	6.21	1.93	1.77	1.46	2.34	2.56
Azusa Light and Water Department	1.74	2.79	2.59	1.59	1.62	1.92	2.04
Banning Electric Utility	1.25	1.35	2.02	1.69	0.67	0.82	1.30
Biggs, City of	1.46	1.04	3.35	1.68	3.72	0.75	2.00
Colton Public Utilities	12.47	4.20	-	6.64	0.67	6.08	6.01
Corona	1.55	0.33	0.13	0.11	0.13	2.57	0.80
Gridley Municipal Utility	5.30	0.52	0.61	2.12	1.24	1.72	1.92
Healdsburg, City of	1.46	1.43	1.76	1.80	1.29	1.19	1.49
Hercules	-	1.82	2.42	1.32	0.19	0.24	1.20
Lassen	0.47	1.03	1.83	1.35	0.46	0.59	0.96
Lodi Electric Utility	0.95	5.92	2.50	1.52	1.74	2.04	2.45
Lompoc	0.98	4.41	1.81	2.15	0.91	0.95	1.87
Merced Irrigation District	3.54	2.67	2.16	4.55	2.23	1.26	2.74
Moreno Valley Utility	4.44	6.11	5.83	9.82	4.82	2.67	5.62
Needles	0.81	6.69	2.73	0.30	4.29	4.49	3.22
Pittsburgh (Island Energy)	-	3.16	7.42	9.05	2.37	1.26	4.65
Plumas Sierra	1.44	1.30	0.89	1.19	0.60	0.49	0.99
Port of Oakland	0.93	2.66	-	-	-	10.40	4.66
Rancho Cucamonga Municipal	0.38	2.56	1.14	0.91	3.09	4.24	2.05
Shasta Lake City Utility	0.77	0.66	1.83	9.19	2.05	1.18	2.61
Trinity	0.03	0.02	0.02	0.02	0.70	2.65	0.57
Truckee Donner Public Utility District	2.37	7.12	5.06	5.14	2.81	2.38	4.15
Ukiah Public Utility Department	0.45	1.40	1.96	1.55	1.22	3.08	1.63
All POU's Average	3.15	3.31	3.80	3.15	2.46	2.66	3.09

Source: *Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013*. See <http://www.ncpa.com>.

Table A-7: POUs Electricity Savings Targets (MWh)

	2007	2008	2009	2010	2011	2012	Cumulative	% Target
Large Size POU								
LADWP	275,000	315,000	300,000	280,000	255,000	252,000	1,677,000	49%
SMUD	70,000	107,000	145,000	196,000	200,000	205,000	923,000	92%
Midsized POU								
Anaheim Public Utility	15,897	16,117	16,233	16,593	16,675	16,956	98,471	127%
Burbank Water and Power	11,307	11,307	11,307	11,307	11,307	11,307	67,842	83%
Glendale Water and Power	11,362	11,586	11,702	11,819	11,937	12,056	70,462	107%
Imperial Irrigation District	13,223	29,000	37,500	45,067	48,000	48,000	220,790	46%
Modesto Irrigation District	13,856	13,856	13,856	13,856	13,856	13,856	83,136	94%
Palo Alto, City of	2,500	2,800	3,100	3,400	3,500	3,500	18,800	201%
Pasadena Water and Power	5,000	10,000	13,500	17,000	22,627	22,627	90,754	91%
Redding Electric Utility	2,641	2,803	3,017	3,285	3,601	3,953	19,300	46%
Riverside Public Utilities	22,210	22,640	23,060	23,410	23,850	24,250	139,420	66%
Roseville Electric	8,716	8,716	8,716	8,716	8,716	8,716	52,296	91%
Silicon Valley Power	25,762	25,762	25,762	25,762	25,762	25,762	154,572	97%
Turlock Irrigation District	7,824	7,271	11,192	26,890	27,509	21,342	102,028	54%
Small POU								
Alameda Municipal Power	760	760	760	760	760	760	4,560	231%
Azusa Light and Water Department	2,084	2,084	2,084	2,084	2,084	2,084	12,504	106%
Banning Electric Utility	873	873	873	873	873	873	5,238	115%
Biggs, City of	106	106	106	106	106	106	636	67%
Colton Public Utilities	2,625	2,625	2,625	2,625	2,625	2,625	15,750	140%
Corona	467	467	467	467	467	467	2,802	6%
Gridley Municipal Utility	92	92	92	92	92	92	552	304%
Healdsburg, City of	198	198	198	198	198	198	1,188	142%
Hercules	136	136	136	136	136	136	816	2%
Lassen	733	733	733	733	733	733	4,398	49%
Lodi Electric Utility	2,000	2,000	2,000	2,000	2,000	2,000	12,000	103%
Lompoc	1,121	1,121	1,121	1,121	1,121	1,121	6,726	24%
Merced Irrigation District	3,619	3,619	3,619	3,619	3,619	3,619	21,714	74%
Moreno Valley Utility	822	822	822	822	822	822	4,932	32%
Needles	817	817	817	817	817	817	4,902	6%
Pittsburg (Island Energy)	178	178	178	178	178	178	1,068	70%
Plumas Sierra	621	621	621	621	621	621	3,726	44%
Port of Oakland	884	884	884	884	884	884	5,304	10%
Rancho Cucamonga Utility	448	448	448	448	448	448	2,688	32%
Shasta Lake City Utility	129	129	129	129	129	129	774	382%
Truckee Donner Public Utility	1,001	1,001	1,001	1,001	1,001	1,001	6,006	313%
Ukiah Public Utility	198	198	198	198	198	198	1,188	256%
All POUs Combined Target	505,210	603,770	643,857	703,017	692,252	689,237	3,837,343	71%
All POUs % of Target Achieved	50%	66%	100%	74%	66%	63%	71%	

Source: *Achieving All Cost-Effective Efficiency for California*. December 2007. CEC-200-2007-019-SF Appendix B, and *Energy Efficiency in California's Public Power Sector Status Reports*, 2006-2013. See <http://www.ncpa.com>.

Note: Percentages in %Target column and All POUs % Target Achieved row are derived from Table A-3.

Table A-8: POU Peak Demand Reduction Targets (MW)

	2007	2008	2009	2010	2011	2012	Cumulative	% Target
Large POU								
LADWP	50.0	58.0	57.0	55.0	53.0	53.0	326.0	46%
SMUD	18.0	28.0	40.0	58.0	59.0	60.0	263.0	55%
Midsized POU								
Anaheim Public Utility	3.3	3.4	3.4	3.5	3.5	3.5	20.6	167%
Burbank Water and Power	2.4	2.3	2.4	2.4	2.4	2.5	14.4	120%
Glendale Water and Power	1.3	1.3	1.4	1.3	1.4	1.4	8.1	230%
Imperial Irrigation District	-	3.9	5.1	6.1	6.5	6.4	28.0	95%
Modesto Irrigation District	1.6	1.6	1.6	1.5	1.6	1.6	9.5	129%
Palo Alto, City of	0.2	0.2	0.2	0.2	0.3	0.2	1.3	645%
Pasadena Water and Power	0.6	1.2	1.6	2.1	2.7	2.7	10.9	154%
Redding Electric Utility	1.0	1.0	2.0	2.0	2.0	3.0	11.0	61%
Riverside Public Utilities	2.2	2.3	2.2	2.2	2.2	2.3	13.4	157%
Roseville Electric	1.1	1.0	1.1	1.0	1.1	1.0	6.3	178%
Silicon Valley Power	3.0	3.0	2.9	3.0	3.0	3.0	17.9	67%
Turlock Irrigation District	1.0	1.0	1.0	3.0	3.0	3.0	12.0	71%
Small POU								
Alameda Municipal Power	0.1	0.1	0.1	0.1	0.1	-	0.5	232%
Azusa Light and Water	0.2	0.3	0.2	0.3	0.2	0.2	1.4	196%
Banning Electric Utility	0.1	0.1	0.2	0.1	0.1	0.1	0.7	151%
Biggs, City of	-	-	-	0.1	-	-	0.1	217%
Colton Public Utilities	0.3	0.3	0.2	0.3	0.3	0.3	1.7	238%
Corona	0.1	-	0.1	-	0.1	-	0.3	38%
Gridley Municipal Utility	-	-	-	-	0.1	-	0.1	409%
Healdsburg, City of	-	-	0.1	-	-	-	0.1	437%
Hercules	-	-	0.1	-	-	-	0.1	5%
Lassen	0.1	0.1	0.1	0.1	0.1	0.1	0.6	142%
Lodi Electric Utility	0.2	0.3	0.2	0.3	0.2	0.3	1.5	171%
Lompoc	0.1	0.2	0.1	0.1	0.1	0.2	0.8	30%
Merced Irrigation District	0.4	0.5	0.4	0.5	0.4	0.5	2.7	32%
Moreno Valley Utility	0.1	0.1	0.1	0.1	0.1	0.1	0.6	25%
Needles	0.1	0.1	0.2	0.1	0.1	0.1	0.7	6%
Pittsburg (Island Energy)	-	0.1	-	-	-	0.1	0.2	131%
Plumas Sierra	0.1	-	0.1	0.1	0.1	-	0.4	54%
Port of Oakland	0.1	0.1	0.1	0.1	0.1	0.2	0.7	6%
Rancho Cucamonga Utility	0.1	-	0.1	-	0.1	-	0.3	162%
Shasta Lake City Utility	-	-	-	0.1	-	-	0.1	1246%
Truckee Donner Public Utility	0.1	0.1	0.1	0.2	0.1	0.1	0.7	979%
Ukiah Public Utility	-	-	0.1	-	-	-	0.1	757%
All POU's Combined Target	87.9	110.6	124.5	143.9	144	145.9	756.8	68%
All POU's % of Target Achieved	65%	75%	94%	65%	56%	56%	68%	

Source: *Achieving All Cost-Effective Efficiency for California*. December 2007. CEC-200-2007-019-SF Appendix B, and *Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013*. See <http://www.ncpa.com>.

Note: Percentages in %Target column and All POU's % Target Achieved row are derived from Table A-4.

Table A-9: POU Reported Electricity Savings in Nonresidential Sector (MWh)

	2006	2007	2008	2009	2010	2011	2012	Cumulative
Large POU								
LADWP	5,672	46,587	83,298	151,700	133,151	114,132	75,652	610,192
SMUD	34,398	39,837	53,552	69,020	73,184	89,507	75,323	434,821
Midsized POU								
Anaheim Public Utility	4,330	7,043	5,535	12,458	21,555	9,036	13,155	73,112
Burbank Water and Power	4,304	3,532	3,954	4,084	6,891	10,399	7,497	40,661
Glendale Water and Power	4,681	6,023	8,870	6,751	14,095	4,218	3,359	47,997
Imperial Irrigation District	47	3,877	10,717	5,622	9,151	7,913	20,058	57,385
Modesto Irrigation District	2,549	4,934	15,212	12,900	15,351	11,168	10,801	72,915
Palo Alto, City of	1,752	3,752	3,104	3,321	4,671	4,962	10,916	32,478
Pasadena Water and Power	3,202	3,249	1,404	18,437	13,284	11,278	9,789	60,643
Redding Electric Utility	700	50	143	1,114	1,386	332	152	3,877
Riverside Public Utilities	86	2,529	5,425	8,083	15,780	16,485	15,138	63,526
Roseville Electric	2,277	2,530	7,456	7,423	9,298	7,510	3,746	40,240
San Francisco PUC	-	-	-	-	-	3,634	3,142	6,776
Silicon Valley Power	3,874	9,895	23,272	38,597	29,795	24,284	19,113	148,830
Turlock Irrigation District	5,364	8,680	10,275	12,283	11,421	3,789	4,655	56,467
Vernon, City of	44	230	935	2,436	1,737	2,128	3,263	10,773
Small POU								
Alameda Municipal Power	143	874	1,553	1,780	537	1,208	2,389	8,484
Azusa Light and Water	1,239	922	2,085	1,603	1,911	2,114	1,986	11,860
Banning Electric Utility	-	-	-	-	1,094	-	-	1,094
Biggs, City of	3	6	95	110	34	80	13	341
Colton Public Utilities	519	9,252	260	728	6,238	40	359	17,396
Corona	-	-	-	-	-	-	-	-
Gridley Municipal Utility	-	81	17	65	374	234	202	973
Healdsburg, City of	-	147	221	326	490	204	177	1,565
Hercules	-	-	-	-	-	-	-	-
Lassen	12	-	-	386	447	90	736	1,671
Lodi Electric Utility	25	309	3,046	1,625	1,818	2,156	1,578	10,557
Lompoc	28	22	58	246	73	45	548	1,020
Merced Irrigation District	137	3,760	569	1,488	3,044	3,303	2,558	14,859
Moreno Valley Utility	245	44	298	285	502	439	22	1,835
Needles	-	-	-	-	-	-	-	-
Pittsburg (Island Energy)	-	-	-	447	100	137	45	729
Plumas Sierra	-	79	17	73	248	-	4	421
Port of Oakland	879	53	280	-	-	-	183	1,395
Rancho Cucamonga Utility	134	57	359	13	86	212	135	996
Shasta Lake City Utility	2	20	-	253	1,223	469	64	2,031
Trinity	-	-	-	-	-	-	-	-
Truckee Donner Public Utility	2	445	1,014	1,625	777	1,218	792	5,873
Ukiah Public Utility	-	-	250	541	259	1,084	793	2,927
All POU's Combined	76,648	158,819	243,274	365,823	380,005	333,808	288,343	1,846,720

Source: *Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013*. See <http://www.ncpa.com>.

**Table A-10: POU Reported Program Expenditures in Nonresidential Program Sector
(Thousands of Dollars)**

	2006	2007	2008	2009	2010	2011	2012	Cumulative
Large POU								
LADWP	8,239	7,538	16,66	50,01	34,497	41,701	25,852	184,502
SMUD	8,720	9,577	14,21	14,38	14,408	16,413	14,186	91,900
Midsized POU								
Anaheim Public Utility	610	1,223	875	1,977	1,901	1,858	883	9,327
Burbank Water and Power	1,317	916	1,530	1,331	2,611	1,957	1,742	11,404
Glendale Water and Power	1,454	1,722	1,573	1,636	2,442	2,781	951	12,559
Imperial Irrigation District	7	747	1,284	712	1,583	3,667	6,874	14,874
Modesto Irrigation District	1,036	1,552	2,464	2,138	2,219	1,757	1,686	12,852
Palo Alto, City of	569	553	894	1,154	1,730	1,879	2,547	9,326
Pasadena Water and Power	751	1,341	483	4,225	3,862	2,635	2,391	15,688
Redding Electric Utility	73	9	1,063	254	842	427	654	3,322
Riverside Public Utilities	23	470	1,182	1,495	3,530	1,344	1,658	9,702
Roseville Electric	756	426	1,173	1,585	1,021	1,465	1,374	7,800
San Francisco PUC	-	-	-	-	-	3,550	4,135	7,685
Silicon Valley Power	2,136	3,252	5,389	6,256	6,847	4,845	2,911	31,636
Turlock Irrigation District	600	936	975	1,178	1,029	477	599	5,794
Vernon, City of	9	92	121	543	215	289	375	1,644
Small POU								
Alameda Municipal Power	43	382	291	374	258	558	838	2,744
Azusa Light and Water	428	309	639	372	508	921	941	4,118
Banning Electric Utility	-	-	6	50	39	-	-	95
Biggs, City of	2	3	32	33	23	1	13	107
Colton Public Utilities	205	658	104	77	464	31	29	1,568
Corona	6	-	-	-	-	-	8	14
Gridley Municipal Utility	-	80	26	69	133	115	101	524
Healdsburg, City of	-	105	109	95	114	61	72	556
Hercules	-	-	-	-	-	-	-	-
Lassen	23	-	-	74	221	72	230	620
Lodi Electric Utility	148	139	365	205	511	486	308	2,162
Lompoc	4	8	66	64	39	31	36	248
Merced Irrigation District	290	536	133	293	524	682	569	3,027
Moreno Valley Utility	65	15	8	8	31	41	2	170
Needles	-	-	-	-	-	-	-	-
Pittsburg (Island Energy)	-	-	-	37	-	19	22	78
Plumas Sierra	3	53	27	64	75	-	5	227
Port of Oakland	44	80	126	-	-	-	11	261
Rancho Cucamonga Municipal	20	100	160	27	85	62	38	492
Shasta Lake City Utility	1	19	-	37	86	100	34	277
Trinity	-	-	-	-	-	-	-	-
Truckee Donner Public Utility	18	317	82	275	257	497	444	1,890
Ukiah Public Utility	8	382	77	119	55	560	220	1,421
All POU's Combined	27,60	33,54	52,13	91,14	82,16	91,28	72,77	450,614

Source: Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013. See <http://www.ncpa.com>.

Table A-11: POU Reported Electricity Savings in Residential Sector (MWh)

	2006	2007	2008	2009	2010	2011	2012	Cumulative
Large POU								
LADWP	10,889	15,054	32,221	135,874	14,812	13,114	13,834	235,798
SMUD	50,565	56,113	61,110	79,008	82,467	81,134	87,058	497,455
Midsized POU								
Anaheim Public Utility	8,436	1,681	11,273	13,347	14,801	4,067	10,182	63,787
Burbank Water and Power	1,270	2,075	4,765	4,490	3,252	1,846	3,455	21,153
Glendale Water and Power	3,799	2,487	4,678	5,052	2,041	7,545	10,160	35,762
Imperial Irrigation District	2,046	4,241	19,927	5,663	7,766	2,121	5,247	47,011
Modesto Irrigation District	673	627	917	1,781	1,449	774	2,130	8,351
Palo Alto, City of	125	959	1,295	1,347	599	1,495	1,386	7,206
Pasadena Water and Power	1,299	989	6,760	11,627	1,275	966	3,548	26,464
Redding Electric Utility	3,265	1,627	1,497	1,183	830	391	193	8,986
Riverside Public Utilities	3,031	3,314	1,835	7,969	3,405	5,910	6,106	31,570
Roseville Electric	2,292	1,796	1,858	1,161	1,700	1,124	1,824	11,755
San Francisco PUC	-	-	-	-	-	-	-	-
Silicon Valley Power	813	994	1,237	1,031	798	292	112	5,277
Turlock Irrigation District	1,519	526	662	771	832	540	222	5,072
Vernon, City of	-	-	-	-	-	-	-	-
Small POU								
Alameda Municipal Power	136	47	582	431	789	225	138	2,348
Azusa Light and Water	658	119	267	542	188	461	1,050	3,285
Banning Electric Utility	96	253	634	3,030	796	141	88	5,038
Biggs, City of	32	42	38	1	3	1	2	119
Colton Public Utilities	424	995	1,322	1,381	1,341	44	61	5,568
Corona	13	98	23	7	3	29	4	177
Gridley Municipal Utility	10	4	7	5	7	4	110	147
Healdsburg, City of	5	5	15	35	14	33	21	128
Hercules	-	-	8	10	2	-	-	20
Lassen	65	90	123	92	81	70	42	563
Lodi Electric Utility	864	74	45	49	111	749	755	2,647
Lompoc	110	80	246	146	93	38	38	751
Merced Irrigation District	5	13	1,302	48	50	18	10	1,446
Moreno Valley Utility	-	-	-	-	-	-	10	10
Needles	18	1	72	186	3	6	7	293
Pittsburgh (Island Energy)	-	-	10	2	1	1	1	15
Plumas Sierra	90	408	405	158	114	51	69	1,295
Port of Oakland	-	-	-	-	-	-	-	-
Rancho Cucamonga Utility	-	-	-	-	-	-	-	-
Shasta Lake City Utility	35	27	30	33	43	256	538	962
Trinity	22	19	12	15	7	9	15	99
Truckee Donner Public Utility	45	159	3,442	1,951	3,230	2,182	1,943	12,952
Ukiah Public Utility	22	30	29	12	22	12	9	136
All POU's Combined	92,672	94,647	158,647	278,438	142,925	125,649	150,368	1,043,648

Source: Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013. See <http://www.npc.com>.

Table A-12: POU Reported Program Expenditures in Residential Sector
(Thousands of Dollars)

	2006	2007	2008	2009	2010	2011	2012	Cumulative
Large POU								
LADWP	2,669	5,011	19,278	17,553	9,953	7,828	11,424	73,716
SMUD	12,912	12,362	14,749	18,672	13,273	14,369	23,335	109,672
Midsized POU								
Anaheim Public Utility	538	824	2,780	2,297	2,695	1,471	340	10,945
Burbank Water and Power	550	807	1,190	2,025	1,521	1,715	2,048	9,856
Glendale Water and Power	1,557	1,165	1,374	1,839	1,250	1,686	2,046	10,917
Imperial Irrigation District	940	2,502	3,673	1,207	2,670	2,639	4,407	18,038
Modesto Irrigation District	902	602	675	1,268	1,428	916	1,211	7,002
Palo Alto, City of	266	508	590	632	359	327	495	3,177
Pasadena Water and Power	507	287	874	1,574	440	477	1,021	5,180
Redding Electric Utility	1,545	1,615	1,242	1,481	1,027	772	396	8,078
Riverside Public Utilities	789	1,475	1,557	2,744	2,432	5,205	2,481	16,683
Roseville Electric	1,068	788	885	1,056	1,254	1,168	2,154	8,373
San Francisco PUC	-	-	-	-	-	-	-	-
Silicon Valley Power	336	350	414	345	299	111	476	2,331
Turlock Irrigation District	945	85	169	233	353	270	105	2,160
Vernon, City of	-	-	-	-	-	-	-	-
Small POU								
Alameda Municipal Power	54	32	124	136	321	96	44	807
Azusa Light and Water	75	104	119	179	123	192	499	1,291
Banning Electric Utility	115	53	173	348	297	256	100	1,342
Biggs, City of	17	18	8	1	4	-	3	51
Colton Public Utilities	91	191	197	264	200	46	53	1,042
Corona	44	37	43	40	19	43	-	226
Gridley Municipal Utility	44	8	27	28	21	37	50	215
Healdsburg, City of	8	3	11	34	37	33	29	155
Hercules	-	-	2	1	1	1	-	5
Lassen	46	181	148	127	100	158	75	835
Lodi Electric Utility	327	79	49	42	215	154	204	1,070
Lompoc	40	56	57	73	36	15	20	297
Merced Irrigation District	11	9	304	36	23	17	8	408
Moreno Valley Utility	-	-	-	-	-	-	1	1
Needles	22	3	165	165	150	150	164	819
Pittsburg (Island Energy)	-	-	1	3	3	1	1	9
Plumas Sierra	289	614	360	137	105	108	113	1,726
Port of Oakland	-	-	-	-	-	-	-	-
Rancho Cucamonga Utility	-	-	-	-	-	-	-	-
Shasta Lake City Utility	65	49	65	41	68	244	387	919
Trinity	58	38	27	32	27	33	29	244
Truckee Donner Public Utility	73	53	411	302	478	471	427	2,215
Ukiah Public Utility	96	83	28	30	56	33	33	359
All POU's Combined	26,999	29,992	51,769	54,945	41,238	41,042	54,179	300,164

Source: Energy Efficiency in California's Public Power Sector Status Reports, 2006-2013. See <http://www.ncpa.com>.

Table A-13: POU Evaluation Measurement and Verification Reports and Studies

Northern California	# EM&V Reports to Date	Month and Year of Recent EM&V	Southern California	# EM&V Reports to Date	Month and Year of Recent EM&V
Large POU			Large POU		
SMUD	3	Nov-11	LADWP	3	Jan-11
Midsized POU			Midsized POU		
Modesto ID	3	Aug-12	Anaheim	-	
Palo Alto	6	Mar-12	Burbank	1	Jul-10
Redding	3	Jul-09	Glendale	-	
Roseville	6	May-12	Imperial ID	1	Apr-11
Silicon Valley	6	Mar-13	Pasadena	2	Oct-11
Turlock ID	3	Jul-10	Riverside	2	Nov-10
			Vernon	-	
Small POU			Small POU		
Alameda	3	Jan-12	Azusa	1	Jun-11
Biggs	4	Nov-10	Banning	1	Jun-10
Gridley	2	Feb-10	Corona	-	
Healdsburg	2	May-10	Colton	-	
Hercules	-		Industry	-	
Lassen	2	Mar-11	Lompoc	4	Dec-11
Lodi	6	Dec-12	Moreno Valley	-	
Merced ID	1	Dec-09	Needles	-	
Pittsburg (Island)	-		Rancho Cucamonga	-	
Port of Oakland	1	Feb-09			
Plumas Sierra	4	Feb-10			
Shasta Lake	2	Dec-12			
Trinity	-				
Truckee Donner	5	Apr-12			
Ukiah	1	Aug-08			
Total to Date	63		Total to Date	15	

Source: Northern California Power Agency (NCPA) website:
<http://www.ncpa.com/current-issues/energy-efficiency-em-v-reports.html>].

APPENDIX B: Energy Efficiency Terminology

Clear and consistent use of energy efficiency terminology is the best practice strategy that helps avoid difficulties in interpreting data and improves communication. Open dialogue and interaction among POUs and Energy Commission staff is vital in achieving uniformity of vocabulary. Below is a compilation of definitions from various sources of common terms that are central to reporting program energy savings.

Term	Definition
Baseline	Energy use in the absence of the program measure. It is a starting point that needs to be clearly identified.
Behavioral Change	A change in energy-consuming activity originated by, and under control of, a person or business. An example of behavioral change is adjusting a thermostat setting.
Coincident Peak Demand Savings	Kilowatts/megawatts savings occur, in most cases, concurrently with California's statewide peak. For appliances with an even level of use throughout the day (refrigerators, clothes washers), the coincident peak savings are equal to the demand savings. Appliances that are either used less often during peak hours (lighting) have coincident peak savings that are less than the demand savings.
Commercial Building	A building with more than 50 percent of its floor space used for commercial activities. Commercial buildings include, but are not limited to, stores, offices, schools, churches, gymnasiums, libraries, museums, hospitals, clinics, warehouses, and jails. Government buildings are included except for buildings on sites with restricted access, such as some military bases or reservations. A building is an enclosed structure containing more than 1,000 square feet of floor space and intended for human occupancy. Agricultural, industrial, and residential buildings are excluded from commercial sector surveys.
Committed Energy Savings	In energy demand forecasts, estimated energy savings associated with finalized, approved, and funded energy efficiency programs and initiatives, codes and standards, legislation and ordinances that have final authorization, allocated funding and a

design that can produce estimated future impacts. For example, a package of investor-owned utility incentive programs that has been funded by a CPUC order.

Deemed Savings	Industry assumptions for average savings associated with a specific measure; The Database for Energy Efficient Resources (DEER) is the primary data source for deemed savings. Deemed savings approach may be complemented by on-site inspections.
Demand Indicator	A measure of the number of energy-consuming units, or the amount of service or output, for which energy inputs are required.
Demand Savings	A difference in the instantaneous energy use of the efficient and standard fixture, measured in kilowatts or megawatts (MW).
Economic Potential Analysis	Using the results of the technical potential analysis, the economic potential is calculated as the total energy efficiency potential available when limited to only cost-effective measures.
E3 Reporting Tool	Official CPUC energy efficiency program cost-effectiveness tool employed to calculate utility energy savings and total net benefits for energy efficiency programs and portfolios. CPUC Energy Division requires that E3 calculators be submitted quarterly by the IOUs, along with the corresponding IOU program tracking data. The E3 calculators are publicly available through the Energy Efficiency Statistics website (eestats.cpuc.ca.gov), formerly known as Energy Efficiency Groupware Application (EEGA). The E3 calculator determines cost-effectiveness (using the Total Resource Cost test), avoided costs and benefits, and additional data that is not present in IOU program tracking data such as ex-ante load shapes, ex-ante effective useful life (EUL), and ex-ante net-to-gross (NTGR).
End Use	Any specific activity performed by a sector (residential, commercial, industrial, and so forth)

that requires energy, for example, refrigeration, space heating, and water heating.

Energy Efficiency (EE)

A concept to describe value-based improvements that take place when either energy inputs measured in watts are reduced for a given level of service or there are increased or enhanced services for a given amount of energy inputs.

Evaluation, Measurement, and Verification (EM&V)

An undertaking of studies and activities aimed at assessing the impacts (for example, energy and demand savings) and effectiveness of an energy efficiency program on its participants, utility, and market.

Investor-Owned Utilities (IOUs)

Private utilities owned by investors and regulated by California Public Utilities Commission (CPUC) under the Public Utilities Code. IOUs account for 75 percent of electricity and 98 percent of natural gas supply in California. Pacific Gas and Electric Company (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric Company (SDG&E) are the major IOUs providing electricity in the state.

Large POU

Electricity service providers to have peak demand loads of 1,000 MW or more. Their annual retail sales are more than 10,000 GWh. This group comprises Los Angeles Department of Water and Power (LADWP) and Sacramento Municipal Utility District (SMUD).

Market Potential Analysis

Analysis of the energy savings that would occur in response to specific levels of program funding and customer participation based on assumptions about market power and barriers. Some studies also refer to market potential as "Maximum Achievable Potential."

Midsized POU

Electricity service provider to have peak demand loads between 100 and 1,000 MW. Midsized POU's annual retail sales are between 500 and 10,000 GWh. This group includes Anaheim, Burbank, Glendale, Imperial Irrigation District, Modesto

Irrigation District, Palo Alto, Pasadena, Redding, Riverside, Roseville, Silicon Valley Power, Turlock Irrigation District, and Vernon.

Net Annual Savings (NAS)	Measured in units of energy, such as megawatt hours, NAS quantifies the reduction of energy consumption due to implemented energy efficiency programs in a specific period. It assesses the effectiveness of various EE program designs. It focuses on narrowly defined metrics of EE program success or failure, while deemphasizing non-energy-related benefits, behavior effects, state of economy, and policy-level impacts.
Net Peak Reduction (NPR)	Measured in units of power, the time rate of energy use, such as megawatts, NPR is the actual reduction in annual peak load achieved by utility as a result of implementing EE and demand-side management (DSM) programs.
Nonresidential Sector	Utility customers who are not residential; these include commercial, industrial, agricultural, and other groups.
Public Goods Charge (PGC)	Public Goods Charge is a public benefits fund established in Assembly Bill 1890 in 1996. Public Utilities Code Section 385 requires POU's to continue maintaining a non by passable charge for public benefit activities.
Publicly Owned Utilities (POUs)	Utility (electricity, natural gas, water, and sewage) service providers that maintain the infrastructure for local communities. POU's are subject to forms of public control and regulation at the local level. Various forms of POU organization include municipal districts, city departments, irrigation districts, and rural cooperatives. Municipal utilities may include territories outside city limits or may not even serve the entire city. Cooperative utilities are owned by the customers they serve usually in rural areas. More than 40 POU's in California account for about 25 percent of electricity and 2 percent of natural gas supply in the state.
Residential Building	A structure used primarily as a dwelling for one or more households: a building typically containing less than 1,000 square feet of floor space and intended for human occupancy. More than 50 percent of its floor space must be used for

	residential activities.
Small POUs	Electricity service provider to have peak demand loads of less than 100 MW. Small POUs annual retail sales are less than 500 GWh. This group includes Alameda, Azusa, Banning, Biggs, Colton, Corona, Gridley, Healdsburg, Hercules, Lassen, Lodi, Lompoc, Merced Irrigation District, Moreno Valley, Needles, Pittsburg/Island, Plumas Sierra, Rancho Cucamonga, Shasta Lake, Trinity, Truckee Donner, and Ukiah.
Spillover	Energy efficiency externalities that affect those who are not directly involved. Energy savings produced by a program without incentives.
Structural Change	A change in the relative levels of energy-consuming subsectors within a sector. An example of structural change is change in product or industry mix in the industrial sector.
Technical Potential Analysis	Analysis of the amount of energy savings that would be possible if all technically applicable and feasible opportunities to improve energy efficiency were taken, including retrofit measures, replace-on-burnout measures, and new construction measures.
Total Resource Cost (TRC)	Includes the identified benefits of the program such as avoided generation costs divided by the net costs, which include both the utility and participant costs. When the TRC test ratio is greater than 1.0 for a utility program or portfolio of programs, it is deemed to be cost-effective. Avoided costs are the incremental savings associated with not having to produce additional units of power (operating and/or building a power plant) while meeting energy demand requirements.
Tracking data	Documentation by the program manager to monitor key program metrics, such as quantity of units installed, type of equipment and efficiency, customer contact information, ex ante savings, and so forth.
Uncommitted Energy Savings	Energy savings that are likely to occur but not yet finalized, approved or funded therefore are not included in the demand forecast.
Unadjusted Energy Consumption	Site energy consumption as provided in the Residential Energy Consumption Survey (RECS) Public-Use Files, without adjustments to account for weather variations, behavioral, or structural effects.

Units Installed	Total number of fixtures or appliances installed.
Utility Incentive Costs	Total incentive costs paid by the utility to participating customers. (Units Installed * Utility Incentive Costs).
Utility Direct Install Costs	Total direct install costs paid by the utility to participating customers. (Units Installed * Utility Direct Install Costs).
Utility Overhead Costs	Total marketing, administrative and EM&V costs allocated to each program type (either by the user or by the EE Reporting Tool, based on net life-cycle savings).
Verification	Review and inspection of the quantity of efficiency measures of high-efficiency equipment installed.