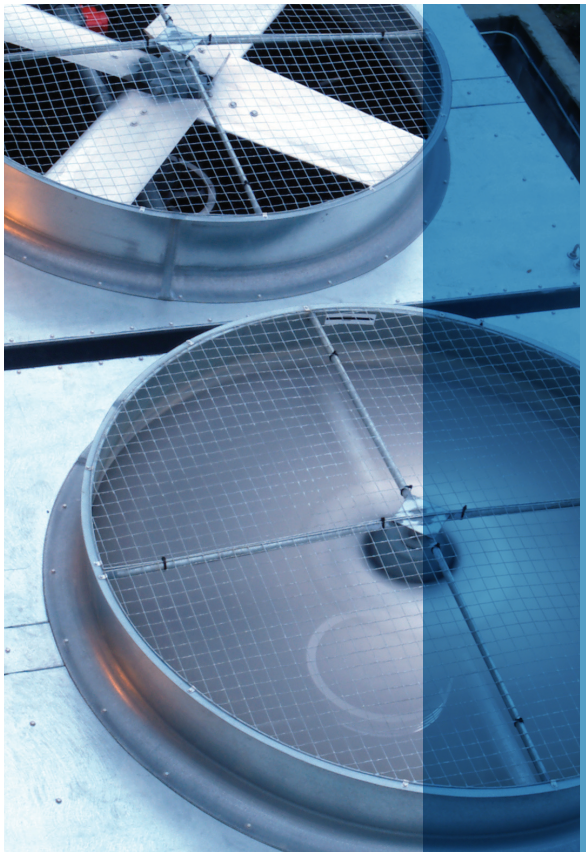

Energy Efficiency in California's Public Power Sector

A Status Report

MARCH 2010

CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION

A PUBLIC AGENCY NCPA NORTHERN CALIFORNIA POWER AGENCY

SCPPA

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Acknowledgements

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Executive Summary

California Senate Bill 1037 (Kehoe), signed into law in September 2005, established several important policies regarding energy efficiency. Among the many provisions of the law is a statewide commitment to cost-effective and feasible energy efficiency, with the expectation that all utilities consider energy efficiency before investing in any other resources to meet growing demand. Assembly Bill 2021 (Levine) added to these policies by requiring the establishment of 10-year energy efficiency targets on a triennial basis.

Public power supports these policies and partners with state agencies and the environmental community to aggressively pursue all cost-effective energy efficiency. Doing so is even more critical at this juncture, as the California Air Resources Board (CARB) aggressively looks to implement the state's greenhouse gas reduction program, assuming that energy efficiency programs will provide more than 10 percent of the total reductions needed for California to return to 1990 emission levels by the year 2020.

This report, *Energy Efficiency in California's Public Power Sector: A 2010 Status Report* complies with Section 6 of the statute, requiring each publicly-owned utility (POU) to "report annually to its customers and to the State Energy Resources Conservation and Development Commission, its investment in energy efficiency and demand reduction programs." Forty POUs are submitting energy efficiency data in compliance with the provisions of the legislation. In addition to the traditional data contained in past reports, this edition provides updated energy efficiency targets, providing estimates that have either been adopted by local governing boards or are at this point preliminary and based on internal utility analyses.

The California Municipal Utilities Association (CMUA), in partnership with the Northern California Power Agency (NCPA) and the Southern California Public Power Authority (SCPPA), began a collaborative effort in October 2005 to develop an evaluation tool to measure energy efficiency program effectiveness and report program savings in a consistent and comprehensive manner. In December 2006, the first joint POU report on energy efficiency was submitted to the California Energy Commission (CEC). This collaboration continues today, and this fourth report takes into consideration several reporting modifications made in response to the enactment of California Assembly Bill 2021.

POU's long-standing commitment to energy efficiency is an extension of fundamental principles dedicated to social and environmental responsibility, ensuring reliability, and keeping rates low for the communities that we serve. Even with this commitment, the cost for each utility to deliver energy savings can vary dramatically from year-to-year, depending upon the customer base of the individual utility, the climate zone in which the utility is located, physical size of the service territory, and customer desires to invest in energy efficiency.

The principal findings and conclusions of this analysis are as follows:

- POUs continue to make major investments in energy efficiency, despite being impacted by the worst economic recession to affect California in decades. During FY08/09, POUs spent $146 million on energy efficiency programs, a 41 percent increase in spending compared with the previous year, and nearly three times the amount spent on programs just three years earlier.

- Reductions in electricity consumption are equally impressive. In the most recent reporting year, peak demand dropped 117 megawatts and more than 644 million kilowatt-hours were saved, continuing a dramatic upward trend in terms of annual increases in savings.
- California's POUs have invested over $367 million on energy efficiency programs since 2006, representing direct investment in local community infrastructure, supporting economic development, and the creation of a robust green job workforce.
- Public power energy efficiency programs provide nearly four dollars of societal benefits for every dollar spent. Applying the Total Resource Cost (TRC) societal test, the weighted average cost effectiveness for all publicly owned energy efficiency programs in FY08/09 was 3.80, higher than the 3.15 estimate reported in the previous year. To put the number in the appropriate context, previous programs authorized by the California Public Utilities Commission (CPUC) for the investor-owned utilities have ranged between 1.6 and 2.4.[1]
- The 15 largest POUs account for nearly 97 percent of public power's total energy efficiency savings.
- Lighting continues to dominate public power energy efficiency programs, accounting for more than half of total energy savings achieved.
- California's POUs exceeded their collective energy efficiency targets in FY08/09. Among the entire group, the utilities realized 101 percent of their savings. During the first three years in which efficiency targets were being monitored, public power reached 84 percent of their cumulative targets.
- Smart-grid related programs will experience significant acceleration in the public power arena with the awarding of $175 million in funding from the U.S. Department of Energy under the American Recovery and Reinvestment Act of 2009.

[1] A value greater than or equal to 1.0 indicates that the program is cost effective.

I. Introduction

The California Municipal Utilities Association (CMUA) submits this fourth report providing an update on the status of publicly-owned utility (POU) energy efficiency programs in California, including the development of 10-year energy efficiency targets. As a practical matter, the report complies with Section 6 of Senate Bill 1037 (SB1037) and Section 3 of Assembly Bill 2021 (AB2021), which require each POU to:

> "Report annually to its customers and to the State Energy Resources Conservation and Development Commission, its investment in energy efficiency and demand reduction programs. A report shall contain a description of programs, expenditures, and expected and actual energy savings results."

Beyond the statutory requirements, the report has one other critical objective in the energy policy arena. It is intended to provide legislators and policymakers with a comprehensive look into how public power is aggressively pursuing energy efficiency in a manner that is not only consistent with the state's energy loading order but also balances the important roles and responsibilities required of the local governing boards that oversee each utility. Forty utilities are documenting their activities in the energy efficiency arena, including the 39 utilities who have participated in the previous three reports as well as the City of Victorville, which joins the collaboration for the first time in 2010.

The following report contains several sections designed to provide detailed analysis beyond this introduction. Section II provides a technical description of the methodologies used by the public power community to report energy savings and calculate 10-year energy efficiency targets. Since previous reports have documented the energy reporting tool in detail, much of the discussion in this report will focus on the development and use of the California POU Energy Efficiency Resource Assessment Model (Cal EERAM). Section III moves away from the technical discussion of the previous section, highlighting the range of public power energy efficiency programs currently available to customers. Included in this discussion will be a snapshot of utility best practices, multi-utility collaboration efforts, and a brief synopsis of programs being developed that rely on funding from the American Recovery and Reinvestment Act (ARRA), including the deployment of advanced metering infrastructure (AMI) and the development of the smart grid.

Section IV offers a numerical summary of energy efficiency savings stemming from current POU energy efficiency programs as well as a summary of each utility's 10-year energy efficiency targets either already adopted by each utility's local governing board or provided on a preliminary basis, subject to board approval at a later date. The section will share perspectives about key variables impacting these results, including economic uncertainty and customer behavior. It should be noted that specific individual program data and summaries are included in Appendix A. Detailed information regarding utility 10-year energy efficiency targets can be found in Appendix B.

Demand reduction programs are highlighted in Section V, with the last section offering principal conclusions and insights about the direction of future reports.

II. Reported Energy Savings Methodology

This section provides a technical discussion of the analytical tools developed by the public power community to report its energy efficiency savings and develop energy efficiency targets. Over the last several years, public power has significantly invested in the development of tools and resources for POUs to use when reporting the results of their energy efficiency programs. KEMA, Incorporated (KEMA) and Energy and Environmental Economics (E3) have provided public power with their considerable expertise in this effort. These resources allow all California POUs to measure energy efficiency program effectiveness and report program savings in a consistent and comprehensive manner.

In early 2009, NCPA and the SCPPA obtained the services of KEMA to evaluate the latest changes to the Database for Energy Efficiency Resources (DEER), simplify and streamline the measures as appropriate, and then provide the results for input into the E3 Reporting Tool. The 2009 KEMA Report[2] is an update to the existing report initially published in 2006, and subsequently updated in 2008. KEMA was originally scheduled to complete the report update by May of 2009; however, they were unable to do so due to numerous issues surrounding the 2008 DEER update. In order to capture as many changes as possible, the final KEMA report was delayed until December. Ultimately, 27 measures[3] originally planned to be updated in the 2009 KEMA Report were not available from DEER.

The E3 Reporting Tool is a sophisticated Excel spreadsheet model used to report the results of utility energy efficiency programs. The model contains a database of over 5,000 energy savings measures. In late 2009, the measure database was updated based on the final 2009 KEMA Report. The most significant change to the model (referred to as the 2010 E3 Reporting Tool) were updates to measure attributes (e.g., energy savings, useful life) for the majority of measures. The changes align the measure attributes with the latest information available from DEER. Other changes to the model include a natural replacement/early retirement option for applicable measures, updated net to gross reference table (based on DEER), and various minor improvements to simplify data input. The 2010 E3 Reporting Tool will be used to report program results beginning with FY 2009-2010 programs.

So that reporting data remains consistent and comparable to program goals, future updates to both the KEMA Report and E3 Reporting Tool are currently planned to coincide with the triennial update schedule for efficiency program target-setting in 2013. However, interim updates to the KEMA Report may be provided earlier, depending on available data and need.

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2 KEMA Incorporated. *Measure Quantification Statewide Savings and Cost Report*, December 2009.

3 For the list of measures not updated, see Appendix A1 of the 2009 KEMA Report.

Energy Efficiency Program Targets

In 2006, AB2021 expanded upon several of the energy efficiency policies adopted through SB1037. Among them, Section 3 of the statutes requires publicly owned utilities to:

> "On or before June 1, 2007, and by June 1 of every third year thereafter, each local publicly owned electric utility shall identify all potentially achievable cost-effective electricity efficiency savings and shall establish annual targets for energy efficiency savings and demand reduction for the next 10-year period."

In compliance with AB 2021, each POU established and submitted efficiency savings targets in 2007. In order to meet the triennial requirement for updating targets, CMUA, in partnership with NCPA and SCPPA, initiated a collaborative framework for 36 POUs to further analyze market potential and update individual utility program targets. To that end, a consultant was hired to develop an energy efficiency resource model for estimating efficiency savings potential.

The California POU Energy Efficiency Resource Assessment Model (CalEERAM) is an energy efficiency potential model designed to estimate technical, economic, and market energy efficiency potential for a utility's service area. Developed by Navigant Consulting (formerly Summit Blue Consulting), the model forecasts energy savings and demand reduction potential within the residential, commercial, and industrial sectors for years 2011-2020. Customized versions of the model were created for 36 POUs, but not SMUD and LADWP.[4] Table 1 identifies each custom model created by utility name and California climate zone designation.

[4] LADWP and SMUD are evaluating their targets on a separate track. See each utility's respective narratives in Appendix B for more details.

Table 1: CalEERAM Efficiency Potential Models

Utility	Climate Zone		Utility	Climate Zone
Alameda	3		Moreno Valley	10
Anaheim	8		Needles	15
Azusa	9		Palo Alto	4
Banning	15		Pasadena	9
Biggs	11		Pittsburg	12
Burbank	9		Plumas Sierra	16
Colton	10		Port of Oakland	3
Corona	10		Rancho Cucamonga	10
Glendale	9		Redding	11
Gridley	11		Riverside	10
Healdsburg	2		Roseville	11
Hercules	3		Santa Clara	4
Imperial	15		Shasta Lake	11
Lassen	16		Trinity	16
Lodi	12		Truckee	16
Lompoc	5		Turlock	12
Merced	12		Ukiah	2
Modesto	12		Vernon	8

CalEERAM is an Excel spreadsheet model based on the integration of energy efficiency measure impacts and costs, utility customer characteristics, utility load forecasts, and utility avoided costs and rate schedules. Excel is used as the modeling platform to provide transparency to the estimation process. Using Excel also allows the model to be customized to each client's unique characteristics, and can accommodate their ability to provide specific model input data. The model utilizes a "bottoms-up" approach in that the starting points are the study area building stocks and equipment saturation estimates, forecasts of building stock decay and new construction, energy efficiency technology data, past energy efficiency program accomplishments, and decision maker variables that help drive the market scenarios. CalEERAM does not estimate annual market energy efficiency potential based on a diffusion curve. Instead, the model calculates market potential based on a decision maker adoption rate algorithm.

CalEERAM estimates energy efficiency resource potential for three perspectives. Each perspective provides "net" estimates of resource potential:

- **Technical Energy Efficiency Potential** represents the amount of energy efficiency savings that could be achieved when not considering economic and market barriers to customers installing energy efficiency measures. Technical potential is calculated as the product of the energy efficiency measures' savings per unit, the quantity of applicable equipment in each facility, the number of facilities in a utility's service area, and the measure's current market saturation.

Technical potential estimates include energy efficiency measures that may not be cost-effective, and technical potential does not consider market barriers such as customers' lack of awareness of or willingness to implement energy efficiency measures. Technical energy efficiency potential estimates, while not realistically obtainable, are used to establish the outer boundary of what can be achieved through energy efficiency programs.

- **Economic Energy Efficiency Potential** represents the portion of the technical energy efficiency potential that is "cost-effective," from a societal perspective, as defined by the Total Resource Cost (TRC) test. Economic potential does not consider market barriers that limit a voluntary utility efficiency program's success in encouraging customers to install energy efficiency measures.

- **Achievable Energy Efficiency (Market) Potential** is an estimate of the portion of the economic energy efficiency potential that could be attributed to a utility energy efficiency program, recognizing the effect of a limited set of market barriers. Market energy efficiency potential is modeled to vary with specific parameters, such as the magnitude of measure incentives and customer awareness and willingness to adopt energy efficient measures.

Within the Achievable Energy Efficiency Potential assessment, the individual measures are modeled by expected type of energy efficiency program design. Three program design options are included in CalEERAM: Replace on Burnout, Retrofit, and New Construction. Replace on Burnout (ROB) means that an energy efficiency measure is implemented only after the existing equipment fails. An example would be purchasing an energy efficient clothes washer after the existing clothes washer fails. Retrofit means that an energy efficiency measure could be implemented immediately. For instance, installing a low flow showerhead is usually implemented before the existing showerhead fails. Replacing incandescent lamps may be a retrofit but can be treated as a ROB because of the relatively short lifetime for incandescent bulbs. New Construction means that a measure is installed when the building is first constructed. Baseline technologies for new construction measures may be different than those for retrofits, with different energy impacts and incremental technology costs. Additionally, the incremental implementation costs for new construction measures are often lower than retrofits because, in new construction, a technology is being installed, regardless of efficiency, and the incremental cost to install the efficient version is typically small.

Within CalEERAM, several financial tests and calculations are performed. The primary test is the TRC test. The present value of avoided costs (the benefits) is divided by the technology cost and the program administrative costs. A TRC value greater than or equal to 1.0 indicates that the resource is cost effective. CalEERAM utilizes the TRC test to identify which of the technically achievable measures are economically achievable. Measures with a TRC of 1.0 or higher are included in economic potential. The model allows for, under limited conditions, certain measures to be included (or excluded) in the economic potential regardless of its cost effectiveness. The model also calculates several additional cost effectiveness parameters: the Utility Cost Test, the Participant Cost Test, simple customer payback, and levelized measure costs. Simple customer payback is used in the model's decision maker adoption rate algorithm. The payback calculation takes measure cost less the incentive received, and divides it by first

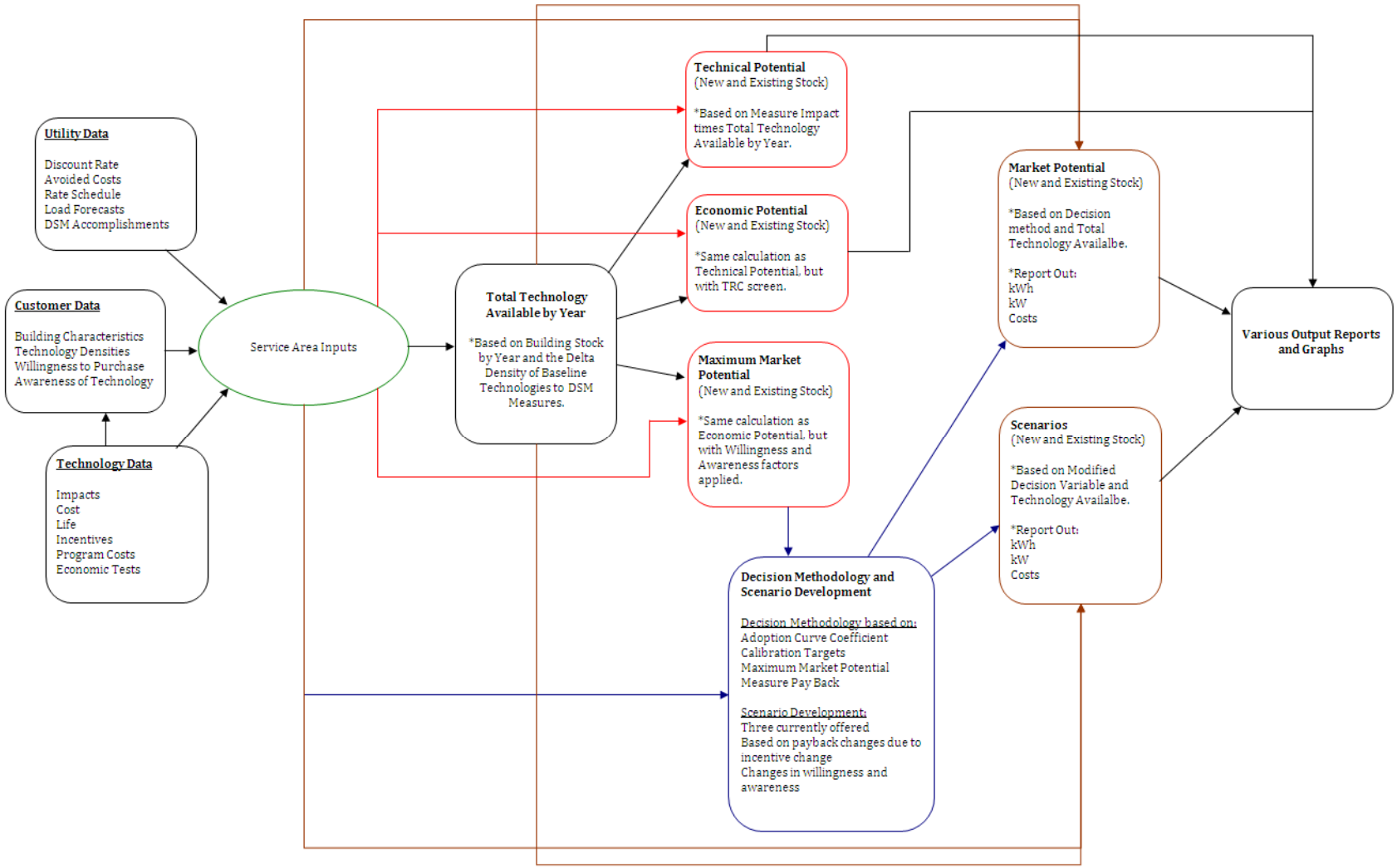
year energy bill savings. The energy efficiency supply curves are based on the energy efficiency measure cost per kilowatt hour levelized over the lifetime of the measure. It is calculated by multiplying energy efficiency measure costs by the Capital Recovery Factor (CRF) then dividing by the first year kWh savings.

CalEERAM Model Inputs and Outputs

Figure 1 illustrates the flow of information in and out of CalEERAM. The model can be segregated into three sections.

- **Utility Service Area Inputs:**
  - Utility specific information on rates, avoided costs, load and building stock forecasts, and historical levels of DSM achievement.
  - Customer data including building/equipment characteristics, decision maker awareness of conservation measures and if aware, willingness to install.
  - Technology data including measure level impacts and costs, measure life, incentive levels, administrative costs, and net-to-gross estimates.
- **Model Calculations:**
  - Develop technical potential based on the inputs above.
  - Develop economic potential by screening technical potential with the TRC test.
  - Develop market potential based on available economic potential, calibration targets, and the decision adoption methodology, detailed in the sections below.
- **Model Outputs:**
  - Tables and graphs on technical, economic, and market potentials.
  - Both cumulative and incremental market potential estimates by planning year. The incremental values are used to define annual goals.
  - Both cumulative and incremental administrative and incentive cost estimates by measure and planning year
  - Market potential supply curves.

Figure 1: CalEERAM Input Information, Model Calculation, and Model Output Flow



Utility Service Area Inputs

Navigant relied on a number of data sources for model inputs. Input data are grouped as follows:

- **Rate Schedules by Sector** – Rate schedules were provided by each utility.

- **Avoided Costs** – For most utilities, the avoided costs were taken from the 2010 version of the E3 Reporting Tool used by publicly owned utilities for reporting their energy efficiency programs. A few utilities provided their own estimates of avoided costs.

- **Energy and Demand Forecasts -** Energy and demand forecasts were provided by each utility.

- **Discount Rate –** Discount rates were provided by each utility. In general, the discount rates used are the same as used in the E3 Reporting Tool.

- **Inflation Rate –** The average inflation rate from January 2000 to September 2009 as reported by the US Bureau of Labor Statistics.

- **Residential Housing Stock –** Baseline estimates of residential building stocks were generally provided by each utility. For a few small utilities, estimates were based on an average use per dwelling from similar utilities in the same climate zone. Splitting housing stock between single family and multi-family varied by utility. Some utilities had baseline estimates, but most utilities did not. For those who did not, census data was used.

- **Non-Residential Building Stock –** Only one utility had specific information of building square footage. For the remainder, the following technique was used:

  - Shares of non-residential sales by building type were developed from the utility "Quarterly Fuels and Electricity Report" submittals to the CEC. These submittals had sales identified by the North American Industry Classification System (NAICS) code.
  - Average use per thousand square feet of floor space by building type and climate zone was obtained from the California Commercial End-Use Survey (CEUS).[5]
  - Dividing the sales per NAICS by the average use per thousand square feet created the baseline estimates of non-residential building floor space.

- **Residential Sector HVAC and Water Fuel Shares** – Several utilities provided fuel share estimates. For the remaining utilities, the fuel share estimates were derived from the California Residential Appliance Saturation Survey[6].

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[5] Itron, Inc. *The California Commercial End-Use Survey*, prepared for the CEC, March 2006.

[6] KEMA-Xenergy. *California Statewide Residential Appliance Saturation Study*, prepared for the CEC, June 2004.

- **Estimates of Administrative Costs/kWh** - A small number of utilities provided their own estimates. For the remaining, the estimates represent an average of the administrative costs/kWh as reported in the 2009 CMUA report[7].

- **Utility Program Accomplishments in FY 2006, FY 2007, and FY 2008** – Based on the three previous versions of the CMUA report. This data was used for two purposes. First, the sum of FY 2006 - FY 2008 accomplishments was used to update the baseline densities of the efficient technologies. Second, the annual accomplishments provided guidance on appropriate 2011 target values.

- **Energy Efficiency Measure Impacts, Load Shapes, and Costs** – Data within these categories were extracted from the 2010 version of the E3 Reporting Tool.

- **Baseline Estimates of Technology Density** – For both the base technology and the energy efficient technology, the primary source were the input files used to develop the California Energy Efficiency Potential Study conducted by Itron for the California's IOUs in 2008[8]. For the City of Alameda, some of these baseline densities were modified based on a combination of a telephone survey of customers, conducted by Navigant, and a detailed discussion regarding saturation estimates between Navigant and Alameda staff.

- **Baseline estimates of Decision Maker Awareness and Willingness** - The primary source was the input files used to develop the California Energy Efficiency Potential Study conducted by Itron for California's IOUs in 2008.

- **Net-to-Gross Values** – The model accepts net-to-gross value inputs at the measure and building type level. However, Navigant relied on the values for net-to-gross included in the E3 Reporting Tool as its source for net-to-gross values. Each utility has the option to modify this input if desired.

- **Calibration Targets** – Navigant collected energy efficiency program results for 54 publicly owned utilities: 27 municipal utilities from California and 27 municipal and cooperatively owned utilities from Connecticut, Iowa, Minnesota, and Vermont. The analysis used publicly available data from primary utility DSM annual regulatory reports and EIA FERC Form 861 baseline sales data[9]. Navigant categorized incremental DSM program results and baseline data by major customer sector: residential and commercial and industrial (C&I).

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7 CMUA. *Energy Efficiency in California's Public Power Sector: A 2009 Status Report*, March 2009.

8 Itron Inc. and KEMA-Xenergy. *California Energy Efficiency Potential Study*, prepared for PG&E, September 10, 2008.

9 Baseline and DSM data were used from 2007, as EIA 2008 baseline data were not available.

- Incremental DSM results and expenditures were normalized overall and for the two major customer sectors by using baseline sales data to determine expenditures as a percentage of revenue, energy savings as percentage of sales, and peak demand savings as a percentage of peak demand. Navigant also calculated costs of conserved energy ($/kWh) and demand ($/kW) on a first year basis.

  The median of normalized spending, savings, and cost of savings were identified. The median is used to identify best practice organizations – those with above median savings at median or below median cost of savings. To calibrate CalEERAM, Navigant used as a guideline the median energy savings, as a percentage of sales, of the best practice organizations of the reviewed POUs that are outside California, 0.96% for C&I and 0.93% for residential.

Non-Residential Building Types Assessed

The Navigant Energy Efficiency Potential Model (on which CalEERAM is based) has the capability of modeling a large number of different building types. For CalEERAM, the building types assessed included three residential building types, four commercial building types and one industrial category type. The building types and categories include:

- Residential new construction
- Residential single family existing
- Residential multi-family existing
- The largest commercial sector building type by sales volume
- The second largest commercial sector building type by sales volume
- The third largest commercial sector building type by sales volume
- The largest industrial category by sales volume
- The remaining balance of sales included in the miscellaneous building type

The three commercial sector building types and the single NAICS industrial category for each utility vary. The determination of which to include in CalEERAM was based on the shares of non-residential sales by building type as identified from the utility "Quarterly Fuels and Electricity Report" submittals to the CEC. These submittals have sales identified by NAICS code. The non-residential sales were sorted and the three largest commercial building types, along with the largest NAICS industrial type, were identified and specifically included in the model. The balance of non-residential sales was categorized into the miscellaneous building type.

Table 2 identifies the building types and shares of non-residential sales for each of the utilities. Some of the smaller utilities don't have information available from the CEC because either they did not make the submittal (very small utilities are not required to) or some of the sales data cannot be sufficiently masked to prevent identification of specific customers.

For most utilities, the largest sales were to commercial sector buildings with the most common being office buildings. Retail non-food and retail food stores were the next most common. For the industrial

sector, the food manufacturing industrial type was the most common, followed by computer and electronics manufacturing.

Table 2: The Largest Non-Residential Building Types by Sales Volume by Utility

Utility	Bldg Type #1	Sales % #1	Bldg Type #2	Sales % #2	Bldg Type #3	Sales % #3	Largest Industrial	Largest Industrial Sales %	Miscellaneous Sales %
Alameda	Office	49.8%	Retail - Non Food	5.9%	Restaurant	5.3%	Computers & Electronics	1.5%	37.6%
Anaheim	Office	12.0%	Retail - Non Food	8.4%	Hotels	6.1%	Computers & Electronics	22.6%	50.8%
Azusa	School	13.4%	Office	10.9%	Retail - Non Food	9.5%	Food	11.6%	54.6%
Banning	Retail - Food	7.7%	Restaurant	7.5%	Office	6.9%	Computers & Electronics	13.8%	64.2%
Biggs	Retail - Non Food	2.0%	Retail - Food	1.5%	Office	1.0%	Food	95.0%	0.5%
Burbank	Office	18.2%	Medical Care	9.8%	Retail - Non Food	9.0%	Motion Picture & Broadcasting	34.9%	28.0%
Colton	Office	17.4%	Retail - Non Food	10.8%	Retail - Food	5.6%	Food	24.4%	41.7%
Corona	Office	19.2%	Restaurant	7.9%	Retail - Non Food	7.3%	None	0.0%	65.6%
Glendale	Office	39.0%	Retail - Non Food	14.2%	Medical Care	8.4%	Food	1.5%	36.9%
Gridley	Retail - Food	21.5%	Office	21.1%	Retail - Non Food	15.4%	Food	14.7%	27.4%
Healdsburg	Office	21.8%	Retail - Food	16.8%	Restaurant	10.2%	Food	8.1%	43.2%
Hercules	Not available		Not available		Not available		Not available		100.0%
Imperial	Office	21.5%	Retail - Non Food	10.2%	School	6.9%	Food	3.4%	58.0%
Lassen	School	10.0%	Office	8.0%	Retail - Food	8.0%	None	0.0%	74.0%
Lodi	Office	8.7%	Retail - Non Food	7.9%	Retail - Food	5.8%	Food	20.3%	57.3%
Lompoc	Retail - Non Food	31.4%	Office	16.1%	Restaurant	9.3%	Food	0.7%	42.5%
Merced	Office	10.5%	School	9.6%	Retail - Non Food	8.1%	Food	46.4%	25.4%
Modesto	Office	11.0%	Retail - Non Food	9.1%	Restaurant	3.9%	Food	34.4%	41.6%
Moreno Valley	Office	50.4%	Restaurant	37.5%	Retail - Non Food	4.0%	None	0.0%	8.1%
Needles	Office	32.2%	Hotels	18.9%	Restaurant	18.0%	None	0.0%	30.9%
Palo Alto	Office	43.0%	Medical Care	10.8%	Retail - Food	4.2%	Computers & Electronics	16.8%	25.2%
Pasadena	Office	36.2%	School	13.3%	Medical Care	8.5%	Information	5.5%	36.5%
Plumas-Sierra	Office	60.1%	Hotels	2.7%	Restaurant	1.9%	Machinery	0.9%	34.4%
Port of Oakland	None	0.0%	None	0.0%	None	0.0%	Transportation Support	93.0%	7.0%
Rancho Cucamonga	Retail - Non Food	42.6%	Restaurant	10.7%	Office	4.2%	None	0.0%	42.5%
Redding	Retail - Non Food	36.9%	Office	24.1%	Restaurant	8.9%	Telecommunications	2.6%	27.5%
Riverside	Office	27.5%	School	14.6%	Retail - Non Food	11.7%	Plastics & Rubber	10.5%	35.7%
Roseville	Office	22.9%	Retail - Non Food	16.1%	Medical Care	7.9%	Computers & Electronics	26.0%	27.1%
Shasta Lake	Not available		Not available		Not available		Not available		100.0%
Silicon Valley Power	Office	37.5%	Retail - Non Food	2.1%	School	2.0%	Computers & Electronics	46.3%	12.1%
Trinity	Not available		Not available		Not available		Not available		100.0%
Truckee-Donner	Not available		Not available		Not available		Not available		100.0%
Turlock	Retail - Non Food	6.9%	Office	5.0%	School	4.6%	Food	33.2%	50.4%
Ukiah	Office	32.3%	Retail - Non Food	18.4%	Retail - Food	11.1%	None	0.0%	38.2%
Vernon	Office	1.6%	Restaurant	0.3%	Retail - Non Food	0.2%	Food	76.7%	21.2%

Model Calculations

CalEERAM's "bottoms up" approach uses the input data listed in the previous section to calculate Technical, Economic, and Market Potentials. Calculating the estimates of Technical and Economic Potential is relatively straightforward: the estimates are the products of available building stocks,

technology densities, and measure impacts. For Technical Potential, it is assumed that all measures can be implemented in all available applications at the same time. Technical potential changes by small amounts over time to reflect changes in the amount of building stocks over time caused by new construction. Economic Potential is the subset of Technical Potential that includes only the efficient technologies that pass the TRC screen.

Calculating Market Potential is unlike calculating Technical and Economic Potential. Calculating Market Potential relies on a calibrated decision adoption methodology and an accounting system that adjusts for potential double counting and for recurring participation of efficient technologies once measure life is passed.

Decision Adoption Methodology

One of the key features of CalEERAM is use of a decision maker based energy efficiency measure adoption rate algorithm (DEEMARA). DEEMARA simulates consumer choice based on simple measure payback and other decision components. For each measure, by building type and by year, the algorithm estimates the number of measures implemented. The algorithm has two parts with the overall formula having the following form:

> ***Number of measures implemented*** *= total available measure units *binary logit function *market factor *decision maker measure awareness and willingness to install the measure*

The first part of the algorithm includes the first three of the four variables identified in the formula above.

The "total available measure units" is a variable that changes with each forecast year and has the form:

> ***Total available measure units*** *= Available building stock * (maximum density for the competing technologies – base year efficient technology density) – running sum of previous years of efficient technology units installed*

The "binary logit function" identifies the share of the efficiency measures implemented each year. The logit function has the form:

> ***Share of Efficiency Measures Implemented*** *= Exp (0.0 – Beta Constant * Measure Payback)*
>
> **Where:**
>
> - *The Beta constant represents the average influence of all excluded (non-payback) factors.*
> - *The Beta constant is allowed to be modified at the end use level (within bounds):*
> - *Larger number representing influences that speed up adoption.*
> - *Lower number representing influences slowing down adoption (such as a recession).*
> - *Measure payback is simple measure payback and is calculated for each measure, each forecast year.*

The "market factor" is a calibration constant that is computed in the first simulation year to adjust computed participation shares to equal the calibration targets. The calibration target needs to be a

value that can be reasonably expected to occur given incentive levels, the cost effectiveness of the measure, and the available resource. Navigant estimates calibration targets at the measure level based on a combination of the estimates of economic potential by measure, past program accomplishments by the utility in providing this or a similar measure, and a review of other similar utilities to see what level of accomplishments they are achieving.

The second part of the algorithm includes the "decision maker measure awareness and willingness to install the measure" function. It is an exponential curve function based on the forecast year and the two input variables of decision maker awareness of a measure and corresponding willingness to purchase.

- **Awareness** is the percentage of decision makers who are aware that a specific energy efficient technology exists.
- **Willingness** is the subset of the aware group who are willing to install the energy efficient measure.

The initial values for decision maker awareness and willingness by measure were taken from the California Energy Efficiency Potential Study conducted by Itron for California's investor-owned utilities in 2008[10]. These Itron estimates of decision maker Awareness and Willingness are based on a combination of consumer research performed for Northern States Power in Minnesota in the mid-to-late 1990s by Itron's predecessor company, Regional Economic Research (RER), and more recent consumer research performed by California utilities. CalEERAM assumes that the initial estimates of awareness and willingness are not static, but improve over time as consumers become both more aware of energy efficiency and more willing to purchase as technology improves. The speed by which these variables approach 100% is determined by the starting values for awareness and willingness and a decision maker curve function. The decision maker curve function takes the form:

> ***The Decision Maker Curve =*** *Min(1, Awareness * Willingness + (1+EXP(curve midpoint in years-years into the forecast))^-1)*
>
> ***Where:***
>
> - *Decision Maker Awareness = The baseline percent of the population of eligible consumers who are aware of the technology*
> - *Decision Maker Willingness = The baseline percent of the population of eligible consumers who are both aware of the technology and willing to purchase it*
> - *Program year = The number of years after the start of the forecast*
> - *Adoption curve tipping point year = Within a measure's lifetime, the point of time on an "S" curve where the curve is at its midpoint.*

The "S" curve diffusion portion of the algorithm is based on changing consumer awareness of the energy efficiency measure and the customer's willingness to participate in the program over time. Where a measure is along the curve depends on its baseline estimates of consumer awareness and willingness. If a measure is well-known and with a high level of willingness to install, then the starting point is very

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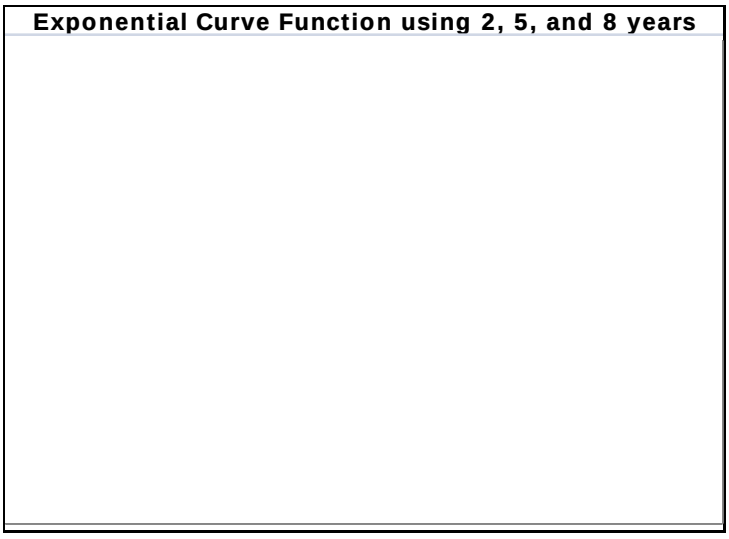
[10] Itron Inc. and KEMA-Xenergy. *California Energy Efficiency Potential Study*, prepared for PG&E, September 10, 2008.

high on the curve with little change over time expected from this portion of the decision maker algorithm. However, if both awareness and willingness are low, then this portion of the decision maker algorithm will experience change over time. The current assumption is that over time, every measure will reach 100% consumer awareness and willingness. It is possible to modify at the measure level the maximum value for consumer awareness and willingness.

The change over time and the speed of that change depend on the initial baseline estimates and the curve midpoint year. For new technologies, both awareness and willingness are typically low, simply because the technology is new. A program can be designed not only to provide incentives but also to increase awareness and promote the technology's reliability and superiority. Such a program typically has low initial participation that ramps up over time before leveling out. In contrast, a mature technology typically has high initial willingness and awareness, and thus, participation follows a flatter trend over time.

Figure 2 illustrates the shape of the "S" curve over the ten year forecast period using different curve midpoint years. The Figure 2 illustration shows the curves for midpoint years of two, five, and eight years. Note in this example that the curve with the earliest midpoint year achieves saturation near year eight where the curves with later midpoint years do not achieve saturation by year 10.

Figure 2: Decision Maker "S" Curves



The following example illustrates the year to year impacts of the decision maker measure awareness and willingness factors on DEEMARA:

- Baseline awareness =50%
- Baseline willingness = 80%
- Base year adjustment due to awareness and willingness = 50% * 80% = 40%
- The five year midpoint "S" curve has the following values in its first four years:
  - Year 1 = 0.7%
  - Year 2 = 1.8%

  - Year 3 = 4.7%
  - Year 4 = 11.9%
- Each forecast year adjustment due to awareness and willingness is the previous year's awareness and willingness value plus the "S" curve value.
  - Base Year = 40%
  - Year 1 = 40% + 0.7% = 40.7%
  - Year 2 = 40.7% + 1.8% = 42.5%
  - Year 3 = 42.5% + 4.7% = 47.2%
  - Year 4 = 47.2% + 11.9% = 59.1%
- The function has a maximum value of 100%, when the measure achieves total saturation.

Interactive Effects and Mutual Exclusivity

Double counting savings is often an unintended consequence in modeling potential estimates. This section describes the nature of this problem and CalEERAM's two approaches to avoid this error.

Double counting savings can occur two ways within a modeling structure. The first is through failing to account for interactive affects between measures; here the sum of the individual measure savings may be more or less than the effective savings of the interactive measures. The second is not accounting for mutual exclusivity between measures.

The first issue between two or more non-mutually exclusive measures has been a long-standing point of discussion in the development of the DEER database. An example of this kind of double counting involves lighting measures. For cooled homes, efficient lighting reduces air-conditioning load because of the efficient lighting's reduced waste heat discharge. For the same reason, efficient lighting increases electric space heating loads.

The energy impacts reported in the 2005 DEER did not account for interactive effects. However, the 2008 DEER did account for interactive effects. A review of the 2010 version of the E3 Reporting Tool indicates that measure impacts are not differentiated by heating fuel type and cooling applicability. However, the reporting tool's energy impacts represent a reduced form of values included in DEER. That is, many represent weighted averages of the different combinations of vintages and building types within a climate zone. It is uncertain if the weighting also included end-use fuel type. The energy impacts used in CalEERAM are from the 2010 E3 Reporting Tool, and are representative of the weighting method used to develop the reporting tool values. As much as the E3 Reporting Tool accommodates these effects, CalEERAM accommodates these effects.

The second issue involves failing to account for mutually exclusive measures. An example would be the existence of different Seasonal Energy Efficiency Ratios (SEER) levels for energy efficient air conditioning. There are at least two methods to address this issue. The first method is to distribute the shares of a competition group total (a set of mutually exclusive measures) among the competing technologies so that the sum equals the maximum applicability of the total. For example, consider a competition group consisting of SEER 14, 15, and 16+ technology options for central air conditioning. For this example, assume the total applicability of central air conditioning (the competition group as a whole) is 90% (i.e.,

90% of all customers have central AC). Then, each technology within the competition group would have a share of the 90% applicability, for example, 60% SEER 14, 25% SEER 15, and 5% SEER 16+.

Another method is to model only the most efficient of the competing technologies; in the example above, only SEER16+. From a conservation potential perspective, this method identifies a larger, but still realistic, potential. CalEERAM uses this approach to prevent this kind of double counting.

Either of these approaches could have been used within the model, but the second method was selected to identify the true level of market potential. Distribution among an array of mutually exclusive measures with widely varying energy savings could have misrepresented the potential as being lower than actual potential.

Recurring Participation

Each measure included in the analysis has an expected measure life. Some of these measure life estimates extend beyond the ten years of the planning horizon while others end within the ten year period. The model assumes that each measure implemented will be replaced at the end of its measure life by another technology at least as efficient as the originally installed efficiency measure. Given that the replacement technologies are not known, it is assumed that the replacement technology is the same as the current efficient technology.

These assumptions result in accounting for the continuation of the originally installed energy efficient impacts throughout the ten-year planning horizon. This is unlike other models that assume that, at the end of measure life, all or a portion of all installations return to the original baseline technology.

The impact of this assumption affects Market Potential results in two ways. First, the cumulative Market Potential does not fall at the end of measure life. Second, future year incentive and administrative costs are affected significantly. At the end of measure life, the model assumes that program participants replace the equipment with new equipment meeting the same efficiency standard. Thus, cumulative energy and demand impacts are sustained with no increase in incremental impacts.

Equipment replacement, however, incurs incentive and administrative costs. Therefore, for measures with measure life less than ten years, such as CFLs, the total incentive and administrative costs will rise more quickly than the incremental energy impacts. Appliance recycling is handled in a special manner. At the end of an appliance recycling measure life, the energy savings does disappear from cumulative potential and there are no recurring incentive and administrative costs.

Model Output

For compliance reporting purposes, the primary model outputs are found in the “Report to the CEC” tab of the spreadsheet. The model outputs for each utility can be found in Appendix B of this report. Data is provided on Technical and Economic Potential for both energy and peak demand as well as incremental annual energy and demand Market Potential estimates for the ten year planning horizon.

Other tables and graphs are also provided by the model, for use by utility program planners. Figure 3 identifies the various output data that is available. This information can also be found in the "Introduction" tab of the model.

Figure 3: CalEERAM Output Information Years

Section 3 (Green Tab)	*Summary Output and Graphs,* includes four spreadsheets: - Spreadsheet "Tech&Econ Potential": Provides tables identifying the technical and economic potential results. - Spreadsheet "Market": Provides tables identifying the market potential results. - Spreadsheet "Market": Provides tables identifying the market potential results. - Spreadsheet "Graphs": Provides graphs identifying the technical, economic, market potential, and naturally occurring results.
Section 4 **(Purple Tab)**	***Supply Curve,* includes four spreadsheets:** - Spreadsheet "Res-Sup Curve": Provides tables identifying residential supply curve information and top 15 measures for the sector. - Spreadsheet "Non-Res-Sup Curve": Provides tables identifying non-residential supply curve information and top 15 measures for the sector. - Spreadsheet "All-Sup Curve": Provides combined residential and non-residential tables identifying supply curve information and top 15 measures for the utility. - Spreadsheet "Sup-Curve Graphs": Provides combined residential and non-residential supply curve graphs.
Section 5 **(Brown Tab)**	***Costs and Cost Tests*** **Section includes two spreadsheets:** - Spreadsheet "Market Potential Costs": Provides tables identifying administrative and incentive costs for the market potential run. - Spreadsheet "Financial Costs and Tests": Provides tables that include measure and program present value lifetime costs and benefits as well as various financial tests.

Caveats and Limitations

Energy efficiency potential models are invaluable tools for utility program planners to use when establishing efficiency program targets. They provide a credible and technically rigorous approach to estimating the potential energy efficiency savings attributable to a utility's energy efficiency program. However, it is understood that there are many limitations to utilizing a technical model to forecast real world results[11]. In particular, customer willingness and awareness assumptions in potential models do not sufficiently explain consumer behavior, lifestyle, or decision-making styles that ultimately drive the success of voluntary efficiency programs. Such limitations create uncertainty that utility program planners must consider when setting realistic yet aggressive goals for efficiency programs tailored to the communities they serve. In addition to behavioral barriers, the following issues are also worth noting:

[11] California Institute for Energy and Environment. *Behavioral Assumptions in Energy Efficiency Potential Studies*, May 2009.

- **Emerging Technologies**. The potential models do not include the incremental potential associated with emerging or yet to be discovered energy efficient technologies. In particular, utility program planners are very interested in the potential for solid state lighting. However, the development of uniform product specifications and affordable pricing will take time, and so it is not expected that solid state lighting will significantly contribute to utility program potential in the near future. Even so, utility planners wishing to aggressively promote emerging technologies may account for the market potential by adopting a more aggressive potential scenario, as allowed for by the model.

- **Policy-driven Changes**. The potential model does not include future changes to codes and standards for buildings and appliances (with one exception: 2012 national standards for incandescent lighting). As policy makers continue to raise the bar for minimum levels of energy efficiency through the adoption of codes and standards, they correspondingly reduce the efficiency potential attributable to utility programs. It is certain that some of the market potential currently identified by the potential models will not be realized by the utility, but instead will be attributed to future changes in codes and standards.

- **Slow Economic Recovery**. The economic recession creates a significant hurdle for the continued success of utility efficiency programs. Potential models do not directly attempt to gauge the impact of economic recession. Utility planners must assess the impact of the economy on their community, and adjust their program expectations accordingly.

- **Erosion of Energy Savings Potential Due to Intrusion of IOU Programs**. Retail point of sale and product give-away programs (e.g. CFLs, consumer electronics) offered by investor owned utilities often spill over into publicly owned utility service territories. Chain stores often distribute IOU-subsidized products in stores located within public power communities. POU customers often shop at big box retailer locations outside of the POU utility service territory. The energy efficient products that are purchased and installed end up being attributed to IOU programs. For example, the new IOU statewide upstream program, the Business Consumer Electronics Program, targets energy efficient computers, televisions, and computer monitors at the retail and distributer level. Many of these products will be sold to POU customers, yet the savings will be attributed to IOU programs. Although IOU statewide and upstream programs can be a very effective means for capturing energy savings, they effectively remove a portion of the energy savings potential from POU programs.

Verifying Program Results

AB 2021 calls for POUs to report annually on "the results of an independent evaluation that measures and verifies the energy efficiency savings and reduction in energy demand achieved by its energy efficiency and demand reduction programs."[12] Public power has strategically responded to this directive

[12] Language is contained in Section 9615(e)(3) of the Public Utilities Code.

in a manner that confirms the accuracy of reported savings while optimizing the exchange of program information across the entire range of public power utilities, large and small.

In creating an evaluation process that provides the necessary timely feedback that utilities need to further enhance programs going forward, public power relied on the evaluation resources of the National Action Plan for Energy Efficiency, CPUC protocols, and the innovation and expertise of firms experienced in program evaluation. In addition, public power has collaborated to develop new program evaluation processes that meet the needs of both large and small utilities.

The collaboration between NCPA and SCPPA in this regard has been critical to this success, especially for small utilities. To illustrate the value of this collaboration, two years ago, NCPA developed a framework whereby small utilities could develop evaluation plans and then undertake specific measurement and verification activities. NCPA tested this approach on a pilot basis with 12 utilities in Northern California, with positive results. SCPPA subsequently implemented a similar approach with members in Southern California last year and have further refined this effort.

By the end of this year, the public power community will have produced more than 40 separate measurement and verification studies. A comprehensive listing of each evaluation report is provided in Appendix D. Unless otherwise noted, each document will be available at http://www.ncpa.com/energy-efficiency-m-v-reports.html.

Utility Updates Regarding Independent Evaluation Activities

As a practical matter, measurement and verification reports are intended to be used by utilities to understand the effectiveness of specific program areas with the purpose of enhancing programs offerings in the future. Without question, verification activities have increased significantly within the public power community. In general, many of the verification studies done to date have focused on high savings impacts measures and measures that exhibit the greatest levels of uncertainty. Key findings from the initial volume of reports submitted by POUs confirm high realization rates for utility-reported energy savings, a positive development that suggests that public power's energy efficiency reporting provides a reliable source of data to help state policymakers gauge the success of the state's overall energy efficiency efforts. Recognizing that the full array of studies is available via a Web link as noted above, the following list provides a small sample of these efforts from a number of POUs:

- **LADWP**. LADWP retained the services of an independent third party contractor to evaluate its energy efficiency programs. The firm has completed assessing energy efficiency projects completed in fiscal year 2006-2007 (July 1 – June 30). Projects reviewed represent a random sampling from the full spectrum of LADWP's energy efficiency program portfolio. The independent third party evaluation concluded that the "…energy savings for most LADWP incentive programs showed that the baseline energy savings were achieved as projected by LADWP." Specific realization rates were reported as follows:
    - HVAC projects - 125 percent of reported savings
    - Refrigeration projects - 97 percent of reported savings
    - Chiller projects - 97 percent of reported savings

- Lighting projects - 90 percent of reported savings

LADWP's verification study has already been submitted to the CEC for its review and is available in redacted form via the link provided in Appendix D. In terms of fiscal year 2007-08, a preliminary report has been submitted by the contractor, covering mostly non-residential programs. Additional work is planned to include measures implemented under the residential efficiency and other programs. The findings will be made available for review as soon as the revisions and additional M&V activities are completed.

- **SMUD**. In concert with its commitment to significantly ramp up energy-efficiency activities over the next decade, SMUD has established a framework to develop yearly measurement and verification action plans. SMUD is planning M&V activities for all of its major programs, scheduled at fixed intervals (2-4 years apart), with the intention of evaluating all programs on a continued cyclical basis through 2017. SMUD is planning to allocate approximately 2 percent of its total energy-efficiency budget towards impact- and persistence-focused M&V studies. These studies will be conducted primarily through the use of third-party contractors, with management and oversight by SMUD's Business Planning Department. SMUD has awarded or is in the process of awarding contracts for consultants to perform evaluations of the following programs in 2010:
  - Residential— Multi-Family Retrofit, Appliance Efficiency, Retail Lighting, Solar Smart Homes
  - Commercial—Savings By Design, Prescriptive Lighting

- **Palo Alto**. Palo Alto's most recent report was completed in March 2010, analyzing savings achieved during FY 2008-09. Its process evaluation focused on the residential Smart Energy program and its commercial RightLights Plus program. The impact evaluation covered the Commercial Advantage program and the RightLights Plus program. The energy savings from these two programs combined account for over 70% of the EE program savings. Based on the sampled customer projects, the realization rates for the Commercial Advantage Program and the RightLights Plus program were found to be 89.2% and 84.3% respectively.

- **Silicon Valley Power (SVP)**. SVP's success in achieving high levels of energy savings in the high-tech market sector was verified at a 102% realization rate in its latest evaluation report. In addition, the report characterizes co-location data centers, identifies market barriers to program participation, and makes recommendations to improve program participation for achieving higher levels of energy savings.

- **Alameda Municipal Power**. Alameda's fiscal year 2008 verification study focused on its commercial sector, measuring the energy impacts of the commercial retrofit projects while addressing customer attitudes. It found that the lack of program awareness was the greatest barrier to program participation, while program satisfaction among participants is high. The measure realization rate from those participating in the program was 82%.

- **Lodi Electric**. LEU has completed its first *and* second year assessments of randomly selected programs and large rebates as part of its designed measurement and verification plan. For fiscal year 08-09, projected energy savings were verified for five large customer rebates and one residential program (Lodi Energy Efficient Home Improvement Rebate Program).

III. Overview of Energy Efficiency Programs

This section offers a first look at the wide range of energy efficiency programs offered by the state's 40 POUs, highlighting utility best practices that feature multi-utility collaboration efforts. The latter part of this section will offer a brief synopsis of programs being developed that will rely on funding from the American Recovery and Reinvestment Act (ARRA).

Before doing so, it is important to recognize that most POUs have actively offered energy efficiency programs well before the statutory directives of SB1037 and AB2021 formalized the reporting requirements that have been in place since 2005. POU's long-standing commitment to energy efficiency is an extension of fundamental principles dedicated to social and environmental responsibility, ensuring reliability, and keeping rates low for the communities we serve. Energy efficiency is of the utmost importance to public power system utilities. Energy efficiency is a critical element of the resource planning process, generation, transmission, distribution, and demand. Public power commitments to energy efficiency are guided by four important concepts:

- **Social and Environmental Responsibility.** POUs place a high priority on energy efficiency, investments in renewable power supplies, low-income programs, and economic development. Local elected officials govern and regulate public power to ensure direct accountability on these important issues to customers.
- **Operational Energy Efficiency.** Public power has important energy efficiency programs that optimize power generation, transmission, and ensure more optimal operation of the grid.
- **Demand-side Energy Efficiency.** This is a major focus of POUs. It includes, but is not limited to: appliances, air-conditioners, building codes and standards, education, electricity management, and weatherization -- all coordinated with customer-specific programs.
- **Cost-effective Energy Efficiency.** Cost-effective energy efficiency lowers the cost of providing electricity to our communities. POU customers are "shareholders," and benefits related to energy efficiency are realized by **all** customer-owners.

Public Power Success Stories: Best Practices

Public power commitments to energy efficiency programs are extensive and comprehensive. More than $166 million in energy efficiency programs are budgeted for the current fiscal year. POUs expect these programs to reduce peak demand by 116 megawatts and more than 630 million kilowatt-hours of energy consumption on an annual basis. A more detailed discussion of these results will be addressed in Section IV of this report.

Residential programs focus on energy audits, Energy Star® appliance rebates and replacements, lighting improvements, attic insulation, as well as incentives to install highly-efficient heating, ventilation and air conditioning (HVAC). Commercial and industrial programs target lighting, HVAC, and manufacturing/ food processing equipment, and refrigeration. POUs also partner with schools and public institutions to educate residents and implement a variety of beneficial programs.

Public power utilities maximize the success of energy efficiency programs and services because of their unique relationships with customers and their ability to specifically tailor programs to meet the needs of their communities. POUs are responsive to local concerns, allowing them to maximize the value of all energy efficiency programs.

Public utilities are diverse, and that diversity is reflected in differing programs tailored to the needs of local constituents, taking into consideration climate zones and other factors. Common to all, however, is the desire to spend energy efficiency dollars wisely and utilize the benefits of local decision-making to create programs that are effective, innovative and forward-thinking.

The 2010 report features best practices that apply to more than one utility, building on the strong network of collaboration that public power has traditionally relied upon to produce the most effective package of energy efficiency programs.

Joint Action at Work – Keep Your Cool Program

NCPA supports and facilitates collaboration for its members through joint action programs and projects. Strategically, NCPA pursues joint action when it produces consistency, provides for economies of scale, and allows enough flexibility to tailor solutions to meet individual member needs.

An example of this strategic approach is the Keep Your Cool Program. Keep Your Cool is an energy efficiency program offered collectively by NCPA members for its business customers. The program provides for the direct installation of energy efficient measures in grocery stores and restaurants. Worn and damaged gaskets on refrigerator doors are repaired, door closers are replaced where needed, and door strip curtains are added to minimize leakage of cold air. These improvements result in an overall reduction of energy consumption and reduced monthly energy costs.

The Keep Your Cool Program was originally implemented by Silicon Valley Power, and was shortly recognized thereafter as a best practice by NCPA's Public Benefits Committee. The Committee, a working group consisting of NCPA staff and member program administrators, chose to expand the program and make it available throughout all NCPA utility member communities. NCPA negotiated favorable rates and executed an enabling agreement with the service contractor for the measure installations. NCPA provides overarching program administration, directs coordination and program rollout, and ensures all program issues are resolved in a timely manner. Utility program administrators market the program, manage customer relations, inspect field installations, and ensure overall customer satisfaction is achieved.

Phase one of the program was completed in 2009. The program has been a success, providing for high levels of customer satisfaction with greater than anticipated customer demand for program services.

Phase two of the program will provide a more comprehensive offering of refrigeration measures, and will likely be expanded to over 17 POU service territories. Additionally, lessons learned through this successful collaborative program implementation will be used in future programs offered through NCPA.

Home Energy Reports

SMUD, Burbank, Glendale, Pasadena, and Palo Alto (via ARRA funding) are four utilities offering a residential program called Home Energy Reports. This new service, offered by OPower, recognizes the power of providing comparative usage information to consumers. The Home Energy Reports will show consumers how they stack up in terms of electricity usage compared to 100 "neighbors." Neighbors are defined as households in relative proximity who share important housing characteristics, including square footage and number of household members. In a pilot study conducted by SMUD, energy reductions of about 2.5% were reported. Burbank's City Council approved the program for two years, where every household in Burbank will receive an average of six comparative reports during that time.

Burbank plans to deploy the program during the first half of this year. Glendale started its program on July 1, 2009, and will be delivering 125,000 Home Energy Reports to customers during the first year. The Glendale program is supported by ARRA EECBG funds, and initial results are positive. Glendale is working with OPower to modify its program to incorporate data from its new Smart Grid system as that data becomes available in 2010. Glendale is also working with OPower to develop Home Water Reports that will be available in 2011.

Youth Education Programs

The majority of POUs actively support and promote educational activities for students to learn the basics of energy science, energy conservation, and energy efficiency. The following provides a few examples of utility best practices in the education arena.

<u>Youth Energy Summit</u>

The Youth Energy Summit (YES) prepares students by providing them with the tools to become civic-minded energy advocates. The event was primarily sponsored by SMUD, Roseville Electric, Lodi Electric, and the LegiSchool Project at California State University, Sacramento. Additional support was provided by NCPA, Quantum Energy Services, and the Resource Action Programs.

During the two-day event in January 2009, students learned from highly regarded energy experts on subject matters such as alternative transportation, solar and wind energy technologies, new technologies in energy efficiency, climate change, green jobs, and energy-related policies. The nearly 100 students who participated put their newly acquired skills to use by completing energy-related service learning projects in their community. Students documented and shared their experiences with legislators and the general public at the State Capitol on Earth Day in April. Based on presentations to a panel of judges, the top seven student teams were awarded scholarships. Based on the event's success, the YES program is being offered again in 2010.

LivingWise Program

Azusa, Burbank, Glendale, Lodi, Roseville, and Truckee Donner PUD are among the POUs offering the LivingWise Program, an approach where students learn about energy and water conservation in their classrooms. The knowledge and tools they obtain in the classroom are taken home and shared with families and friends, reinforcing the lessons learned. LivingWise provides students and their families with the tools needed to audit and retrofit their homes, generating immediate and lasting energy resource savings.

Green Allowance Program

Glendale Water & Power is launching the Green Allowance Program, a new web-based service designed to give kids the tools and motivation to champion energy conservation and help them to earn a green "allowance". The program includes an innovative and kid-friendly website, www.greenallowance.com, which provides practical ideas and customized assignments for kids, showing how they can save energy and, in turn, save money. Kids are encouraged to make a deal with their parent to share the savings on their electric bill – savings that are calculated and programmed to show up on their home computers on a monthly basis. The program is being developed through SCPPA's agreement with Green Allowance, LLC, with additional SCPPA members planning to participate in the near future.

The Impact of the American Recovery and Reinvestment Act (ARRA)

In addition to the range of best practices described above, public power will soon have a one-time opportunity to enhance its program offerings during 2010 and 2011, courtesy of the federal government. ARRA, signed into law in February 2009, provides more than $60 million to 29 municipal communities in California, under the Energy Efficiency and Conservation Block Grant (EECBG) program (See Table 3 on the next page) and $175 million in smart grid funding. Each area is addressed below.

Energy Efficiency and Conservation Block Grant (EECBG) Program

For cities with a population exceeding 35,000, the dollars are provided to municipalities directly by the U.S. Department of Energy. Small cities, however, receive their funding directly from the CEC. As of mid-March, it is expected that most of the dollars that are targeted for use will be available by the beginning of summer. It should be noted that all Public Utility Districts and Irrigation Districts are not eligible for such funding.

At first glance, it might appear that all of these dollars are available for utility energy efficiency programs and easily deployed. However, this is not necessarily the case. The range of programs funded under the EECBG is based on 14 criteria established by DOE in the original solicitation. While some of the criteria fall in line within the scope of traditional utility programs – such as energy audits and building retrofits, it also allows for the dollars to be used for transportation-related programs, technical support services, renewable energy technology deployment on government buildings, and for combined heat and power. In addition to not being constrained by the provisions of the state's energy loading order, the dollars are

not necessarily controlled by the municipal utility. As an example, LADWP will be receiving $ 3.5 million from the City's $37 million Energy Efficiency and Conservation Block Grant, for rebates related to residential whole house fans, cool roofs, window shading, and commercial building retro-commissioning incentives. The remaining funds will address projects identified by the city that are not under the control of the utility. In Pasadena's case, none of the City's funds were allocated to the utility. Rather, the Public Works Department received them for street light retrofits.

Table 3
ARRA Funding Provided to Cities
Energy Efficiency and Smart Grid Programs

	City Funding		
	EECBG DOE	EECBG CEC	Smart Grid DOE
Alameda	$ 640,600		
Anaheim	$ 3,254,800		$ 5,896,025
Azusa	$ 191,600		
Banning		$ 165,509	
Biggs		$ 25,000	
Burbank	$ 1,103,000		$ 20,000,000
Colton	$ 485,400		
Corona	$ 1,454,200		
Glendale	$ 1,883,700		$ 20,000,000
Gridley		$ 35,407	
Hercules		$ 135,630	
Industry		$ 25,000	
Lodi	$ 586,200		
Lompoc	$ 165,600		
Los Angeles	$ 37,017,900		
Modesto ID			$ 1,493,149
Moreno Valley	$ 1,684,300		
Palo Alto	$ 663,000		
Pasadena	$ 1,507,800		
Pittsburg	$ 565,500		
Rancho Cucamonga	$ 1,597,700		
Redding	$ 892,700		
Riverside	$ 2,850,600		
Roseville	$ 1,073,700		
Santa Clara	$ 1,180,900		
Shasta Lake		$ 58,636	
SMUD			$ 127,506,261
Ukiah		$ 82,741	
Victorville	$ 1,029,700		
Total	**$ 59,828,900**	**$ 527,923**	**$ 174,895,435**

Despite these caveats, a significant level of DOE funding will be used for energy efficiency programs managed by the utility. Due to the ease of certain program implementation which allow for direct purchases of specific equipment and labor-related rules regarding prevailing wages, many of the utilities

receiving funding dedicated a portion of their energy efficiency funding to street light replacement activities. A list of programs describing EECBG activities being funded by ARRA are documented for each participating utility in Appendix A.

Other Energy Efficiency Programs Funded by ARRA

Another element of ARRA funding which will help municipal utilities is being provided from the CEC through its State Energy Program (SEP). Under the SEP, the CEC is providing up to $226 million in stimulus funding to provide municipal financing, commercial and residential retrofits, and low-interest loans for energy efficiency projects, all of which have produced significant interest from municipal government. To date, the CEC has awarded $110 million toward these projects, with SMUD receiving the largest allocation of funding ($19.9 million) for its Home Performance program. The program includes a variety of local agencies and community college districts.

Other awards for municipal financing and related activities include many of the counties served by publicly-owned utilities. In terms of low-interest loans, the City of Los Angeles received a $3 million loan last September to fund the installation of energy efficient streetlights.

Finally, public power will be coordinating efforts with the CEC as it deploys its Cash for Appliances program. Under the program, approximately $35 million will be made available to enhance rebates for room air conditioners, clothes washers, and refrigerators. The program is expected to begin in late April and will include both public power and investor-owned utilities.

Smart Grid Program Funding

In 2009, five public power utilities (Anaheim, Burbank, Glendale, Modesto Irrigation District, and SMUD) received nearly $150 million in awards from DOE to address smart grid development.

Anaheim

Anaheim has begun the implementation of Advanced Metering Infrastructure/Meter Data Management System (AMI/MDMS) as a component of Anaheim's preparation for Smart Grid and to provide a platform to support compliance with anticipated regulatory and legislative requirements related to drought, demand-response, energy efficiency, and time-based rates including Time of Use, Critical Peak Pricing and Critical Peak Rebates. This project is intended to replace all electric and water meters with state-of-the-art smart meters with two-way communications. It will also support in-home communications with home appliances, air conditioning systems, pool pumps, and in-home displays and web access to provide customers with real-time or near-real-time information to facilitate improved management of electric and water consumption.

Burbank

Burbank's program includes deployment and integration of multiple and secure Smart Grid infrastructure systems and control processes designed to accelerate the modernization of the local grid and address these challenges. BWP -- with its compact service territory, high customer density, and favorable climate – sees itself in a good position to develop a full-scale Smart Grid deployment that will

serve as a model for other utilities to emulate. Its program includes the following primary projects, all of which will be initiated over the next few years:

1. Secure Wi-Fi Mesh Network.
2. Meter Data Management System
3. Advanced Metering Infrastructure for both electric and water
4. Mission-Critical Asset Protection Program
5. Outage Management System
6. Distribution Automation
7. Customer Smart Choice Programs
8. Energy Demand Management System

Glendale

GWP was awarded $20 million to support its $51.3 million AMI-Smart Grid Initiative, and was the first in the nation to sign a contract with DOE to receive the grant funds. GWP has signed contracts a number of vendors. Itron will supply its Openway and Save Source electric and water smart meter systems, the Itron Enterprise Edition MDMS, and a Tropos Wi-Fi backhaul system. KEMA, Inc. will provide consulting services and project management support. Utilities Partners of America, Inc. will do the installations. GWP is on track to complete its smart meter demonstration project in the Spring of 2010, with full implementation of its smart meters completed by the Fall of 2011.

The new Smart Grid System will have the following features:

- Smart meters with large data storage capabilities, and two-way communication hardware and software.
- A wide area network to allow two-way communications between the utility and each meter.
- Distribution automation, direct load control, distributed generation, demand response, and new customer programs and service options that allow customers to take control of energy and water costs through access to real or near real time consumption information.
- Meter Data Management System and systems software to integrate meter data with the utility's billing, customer information system, outage management, load control systems, and other smart grid systems.
- A premise gateway that communicates to a home area network (HAN) to promote demand response, energy and water conservation, and dynamic pricing options.

The City of Glendale AMI-Smart Grid Initiative will provide for:

- Increased use of digital information technology to improve reliability, security, and efficiency of the electric grid.
- Development and incorporation of demand response, demand-side resources, and energy-efficiency resources.
- Deployment of ‘smart’ technologies (real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices) for metering, communications concerning grid operations and status, and distribution automation.
- Integration of ‘smart' appliances and consumer devices.
- Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal energy storage.
- Provision for consumers to receive timely information and energy control options.

SMUD

SMUD received $127.5 million from DOE, for a $308 million ***Smart Sacramento*** project that includes partners from the region including the California State Department of General Services, California State University, Sacramento, and the Los Rios Community College District.

SMUD started installing advanced metering infrastructure (AMI), using Silver Spring Networks and Landis meters, during the fourth quarter 2009. The initial 50,000 point pilot should be completed by the second quarter 2010 and full deployment of the remaining meters (over 600,000 total) will commence directly after the pilot. Full implementation is expected by the end of 2011. The AMI system will allow for two-way communication with all customers and will enable additional opportunities for energy efficiency and peak load reduction.

In addition to AMI, SMUD will implement distribution automation (expected to reduce overall energy use by 2%), test dynamic rates, install approximately 250 electric vehicle charging stations, incorporate demand response capability with programmable thermostats and controls in 50,000 homes, incorporate Auto DR in many commercial facilities and test energy storage products.

SMUD's smart grid project is expected to optimize the grid through enhanced load management, improved reliability, enhanced energy efficiency, and better overall system control. Additional benefits include reducing the need for additional infrastructure such as transmission lines and new generation.

IV. Program Results and Observations

This section provides an aggregated discussion about current and future energy efficiency programs and savings that apply to California's public power utilities. The discussion stops short of utility specifics in most cases, deferring to a more detailed overview of specific utility program descriptions, and expenditures, as well as expected and actual energy savings to Appendix A of this report.

Table 4 summarizes POU energy efficiency program savings and cost information for fiscal years 2006 through 2009.[13] We are pleased to report that both electricity savings and expenditures continue to increase substantially within the public power community. During FY08/09, POUs spent approximately $146 million on energy efficiency programs, a 41 percent increase in spending compared with the previous year. Reductions in electricity consumption are equally impressive. In the most recent reporting year, peak demand dropped by more than 117 megawatts, with more than 644 million

[13] Imperial Irrigation District, Merced Irrigation District, Modesto Irrigation District, Plumas-Sierra Rural Electric Cooperative, Sacramento Municipal Utility District, Turlock Irrigation District, and Truckee Donner Public Utility District all operate on a fiscal year that extends on a calendar year basis. As such, each utility's data for FY08/09 is actually calendar year 2009, and data for FY09/10 is actually for calendar year 2010. CMUA, NCPA, SCPPA, and CEC staff recognize this data nuance.

kilowatt-hours saved on an annual basis, both significantly higher than savings from programs implemented in the previous year.

Table 4 Program Summary

2006-2009 Publicly-Owned Utility Program Results

Year	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle MWH Savings	Total Utility Cost ($)
FY05/06	52,552	169,302,601	2,249,214	$ 54,412,728
FY06/07	56,772	254,331,659	3,062,361	$ 63,151,647
FY07/08	82,730	401,919,205	4,473,801	$ 103,907,266
FY08/09	117,435	644,260,232	6,749,912	$ 146,093,107

Continuing a long-standing trend within the public power community, the majority of energy efficiency program impacts reflect public power's two largest utilities: LADWP and SMUD. Approximately 65 percent of peak savings and 68 percent of annual savings can be attributed to these two utilities in the most recent year. While LADWP and SMUD account for a significant total of public power program savings, it does not discount the importance of energy efficiency programs being offered by the rest of the state's POUs.

Table 5 highlights the public power commitment to energy efficiency programs, from the largest to smallest community. Given the wide range of diversity among utilities and program offerings, the reported results show a continuing trend of increased program spending and electricity savings. During FY08/09, the remaining utilities spent more than $45 million on energy efficiency programs, reducing load by nearly 41 megawatts at the peak and more than 208 million kilowatt-hours during the year. The kilowatt-hour reduction is more than double the reductions reported just three years ago.

Table 5 Program Summary (excluding LADWP & SMUD)

2006-2009 Results - Excluding LADWP & SMUD				
Year	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle MWH savings	Total Utility Cost ($)
FY05/06	19,292	67,766,218	953,628	$ 21,921,485
FY06/07	21,174	96,740,737	1,402,162	$ 28,663,125
FY07/08	37,822	171,738,010	2,079,276	$ 39,000,521
FY08/09	40,791	208,658,443	2,670,085	$ 45,476,667

Looking at it yet another way, the 15 utilities measured by annual kilowatt hours of savings provided more than 97 percent of the amount reported by the entire POU community. Table 6 provides the FY 08/09 data for the 15 utilities and shows their combined energy savings as a percentage of the total POU energy savings for the year. New to the top 15 in this report are Roseville Electric and Banning Electric Utility.

Table 6 Utilities Most Heavily Influencing Energy Efficiency Savings

FY 08/09 Energy Savings Top (15) Utilities				
Utility	Net Peak KW Savings	Net Annual KWh Savings	Utility Percent of Total Savings	Cumulative Percentage of Total Savings
Los Angeles Dept. of Water & Power	50,920	287,574,239	44.6%	44.6%
Sacramento Municpal Utility District	25,724	148,027,550	23.0%	67.6%
Silicon Valley Power	2,194	39,627,773	6.2%	73.8%
Pasadena Water and Power	5,376	30,064,452	4.7%	78.4%
Anaheim Public Utilities	8,430	25,804,825	4.0%	82.4%
Riverside Public Utilities	3,600	16,052,142	2.5%	84.9%
Modesto Irrigation District	2,389	14,680,822	2.3%	87.2%
TID	1,299	13,053,661	2.0%	89.2%
Glendale Water and Power	2,586	11,803,156	1.8%	91.1%
Imperial Irrigation District	3,025	11,284,942	1.8%	92.8%
Roseville Electric	2,223	8,584,107	1.3%	94.1%
Burbank Water & Power	3,069	8,573,768	1.3%	95.5%
City of Palo Alto Utilities	1,452	4,667,711	0.7%	96.2%
Truckee Donner Public Utility District	898	3,575,636	0.6%	96.8%
Banning Electric Utility	370	3,030,291	0.5%	97.2%

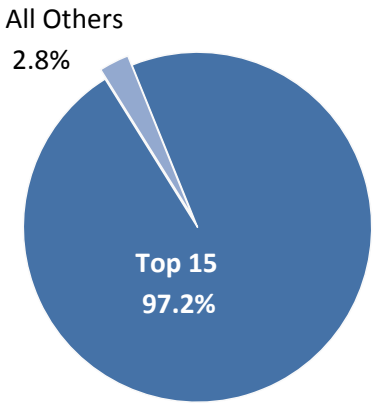


Table 7 provides a comprehensive summary of energy efficiency savings and an aggregated measure of cost effectiveness, including the 25 utilities not shown in the previous table. The table highlights a wide range of savings, which is largely a reflection of utility size and economic considerations. Four municipalities (LADWP, SMUD, Anaheim, and Pasadena) had peak savings exceeding five megawatts. Another 10 utilities (Burbank, Glendale, Imperial Irrigation District, Modesto Irrigation District, Palo Alto, Redding, Riverside, Roseville, Silicon Valley Power, and Turlock Irrigation District) have peak savings that fell in the range of 1-5 megawatts.

With respect to cost effectiveness, the aggregated TRCs for public power equals 3.80 in FY08/09, suggesting that public power energy efficiency programs produce nearly four dollars in societal benefits for every dollar spent. With few exceptions, TRCs for individual utilities satisfy the criteria for providing cost-effective savings to their respective communities.

Table 7 Summary of Utility Results FY 08/09

All POU Summary	Resource Savings Summary				Cost Summary				
	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)	TRC
Alameda Municipal Power	129	2,210,896	15,833,699	8,553	149,243	-	360,824	510,067	1.93
Anaheim Public Utilities	8,430	25,804,825	287,231,540	160,175	1,455,176	2,447,460	371,013	4,273,649	7.63
Azusa Light & Power	342	2,145,197	19,493,327	10,945	350,600	88,907	111,366	550,874	2.59
Banning Electric Utility	370	3,030,291	20,108,209	11,461	214,379	-	183,544	397,923	2.02
Biggs	10	110,652	1,031,831	553	15,986	2,370	15,932	34,287	3.35
Burbank Water & Power	3,069	8,573,768	106,280,063	58,163	1,257,762	1,549,012	548,965	3,355,739	3.95
Colton Electric Utility	746	2,109,421	19,199,487	746	333,506	-	7,000	340,506	-
Corona Dept. of Water & Power	3	7,006	70,064	40	31,745	-	8,000	39,745	0.13
Glendale Water and Power	2,586	11,803,156	135,724,712	75,709	1,425,049	1,765,962	283,545	3,474,555	2.41
Gridley Municipal Utility	17	70,385	1,067,565	569	45,556	2,179	49,175	96,910	0.61
Healdsburg	86	360,518	3,608,453	1,984	83,845	7,777	37,437	129,058	1.76
Hercules Municipal Utility	2	9,653	88,742	47	1,250	-	-	1,250	2.42
Imperial Irrigation District	3,025	11,284,942	128,216,762	77,431	1,177,438	7,323	733,889	1,918,650	5.60
Industry	-	-	-	-	-	-	-	-	-
Los Angeles Dept. of Water & Power	50,920	287,574,239	2,870,428,915	1,539,248	15,116,641	33,827,856	18,619,803	67,564,300	3.77
Lassen Municipal Utility District	90	478,138	4,940,848	2,692	135,411	15,507	50,166	201,084	1.83
Lodi Electric Utility	64	1,674,210	15,376,248	8,287	146,505	-	100,000	246,505	2.50
Lompoc	40	392,120	3,337,134	1,834	113,248	520	23,604	137,372	1.81
Merced Irrigation District	148	1,536,030	21,751,355	11,554	232,981	1,098	95,097	329,176	2.16
Modesto Irrigation District	2,389	14,680,822	163,934,670	89,211	1,504,803	343,277	1,558,241	3,406,322	2.01
Moreno Valley Utility	-	285,000	2,850,000	1,584	4,250	-	4,000	8,250	5.83
Needles	6	185,959	3,347,262	2,129	150,000	-	15,000	165,000	2.73
City of Palo Alto Utilities	1,452	4,667,711	51,425,595	27,908	617,601	-	1,168,182	1,785,783	2.45
Pasadena Water and Power	5,376	30,064,452	366,778,740	199,846	4,126,216	1,306,422	366,222	5,798,859	2.68
Island Energy	114	448,960	8,960,962	4,766	35,957	-	3,987	39,944	7.42
Plumas Sierra Rural Electric Coop	35	231,434	3,030,837	1,587	64,673	-	136,738	201,411	0.89
Port of Oakland	-	-	-	-	-	-	-	-	-
Rancho Cucamonga Municipa Utility	5	12,719	84,340	50	24,784	-	2,500	27,284	1.14
Redding Electric Utility	1,481	2,297,409	27,143,681	15,757	1,380,954	79,960	274,035	1,734,949	2.12
Riverside Public Utilities	3,600	16,052,142	205,155,182	115,722	1,596,735	995,991	1,646,648	4,239,373	4.20
Roseville Electric	2,223	8,584,107	122,851,981	69,443	1,936,756	63,252	641,403	2,641,412	3.89
Sacramento Municpal Utility District	25,724	148,027,550	1,209,397,924	489,806	16,881,120	-	16,171,020	33,052,140	2.51
Shasta Lake	62	285,755	2,479,081	1,368	26,792	10,496	40,350	77,638	1.83
Silicon Valley Power	2,194	39,627,773	716,171,743	391,764	3,625,475	425,379	2,550,224	6,601,078	5.60
Trinity Public Utility District	-	14,828	192,764	117	32,133	-	-	32,133	0.02
Truckee Donner Public Utility District	898	3,575,636	34,528,706	18,776	318,467	-	258,896	577,363	5.06
TID	1,299	13,053,661	135,063,358	74,129	666,842	153,287	590,756	1,410,885	3.61
Ukiah Public Utility	83	552,727	3,786,705	2,059	80,451	28,757	39,519	148,727	1.96
City of Vernon Light & Power	417	2,436,139	38,939,531	21,624	271,448	-	271,459	542,907	6.53
Victorville	-	-	-	-	-	-	-	-	-
Summary	117,435	644,260,232	6,749,912,013	3,497,637	$55,631,778	$43,122,790	$47,338,540	$146,093,107	3.80

Note: All data is fiscal year, except for the following calendar year utilities: IID, Merced, Modesto, Plumas Sierra, SMUD, Truckee Donner, and TID.

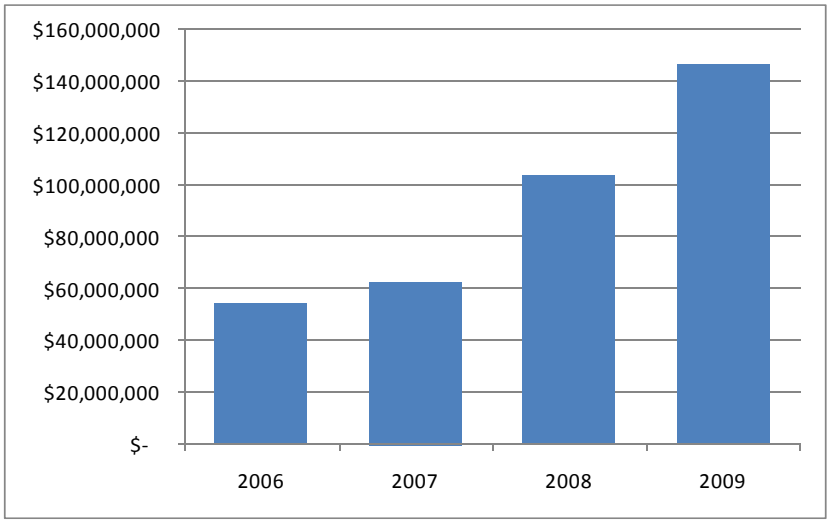
Table 8 reviews the aggregated results by program sector. From the tables, it is clear that lighting and cooling programs once again account for the largest share of the savings. Regarding specific program results, lighting (particularly non-residential direct installations) continues to dominate public power energy efficiency programs, accounting for more than half of the total energy savings achieved. Utility rebates account for nearly one-third of total program costs with significant dollars now spent on measurement and verification efforts.

Table 8 Summary by Program Sector FY 08/09

All POU Summary		Resource Savings Summary				Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	264	673,487	8,149,905	3,897	$ 390,693	$ 380	$ 574,801	$ 965,874
HVAC	Res Cooling	8,936	16,689,413	280,545,127	162,477	$ 5,558,830	$ 1,096,694	$ 4,619,701	$ 11,275,225
Appliances	Res Dishwashers	44	134,741	1,822,206	931	$ 139,718	$ 140	$ 226,777	$ 366,635
Consumer Electronics	Res Electronics	639	6,391,369	63,922,447	25,911	$ 1,035,163	$ 8,983	$ 681,906	$ 1,726,052
HVAC	Res Heating	1	988,845	18,437,597	7,671	$ 453,378		$ 149,688	$ 603,066
Lighting	Res Lighting	37,276	194,546,807	1,703,097,389	827,499	$ 8,892,382	$ 3,058,161	$ 3,011,462	$ 14,962,005
Pool Pump	Res Pool Pump	556	1,047,810	10,513,654	6,166	$ 176,559		$ 210,689	$ 387,248
Refrigeration	Res Refrigeration	4,884	31,912,924	420,084,750	221,707	$ 2,591,379	$ 8,295,316	$ 3,467,906	$ 14,354,601
HVAC	Res Shell	2,419	2,311,109	40,226,422	22,227	$ 1,821,139	$ 137,256	$ 376,747	$ 2,335,141
Water Heating	Res Water Heating	53	227,713	3,703,806	1,715	$ 77,399	$ 7,744	$ 30,070	$ 115,214
Comprehensive	Res Comprehensive	2,736	21,522,194	169,661,377	76,020	$ 5,038,478	$ 665,161	$ 2,148,891	$ 7,852,530
Process	Non-Res Cooking	1	3,781	45,370	24	$ 650		$ 448	$ 1,098
HVAC	Non-Res Cooling	6,671	49,600,423	857,614,997	462,011	$ 5,740,287	$ 186,425	$ 4,407,884	$ 10,334,596
HVAC	Non-Res Heating								
Lighting	Non-Res Lighting	33,544	190,665,625	1,726,800,363	939,971	$ 13,785,639	$ 27,123,612	$ 17,788,161	$ 58,697,412
Process	Non-Res Motors	5,895	23,634,557	354,695,530	199,163	$ 3,267,652		$ 1,704,165	$ 4,971,817
Process	Non-Res Pumps	129	6,825,428	94,697,241	50,119	$ 96,464	$ 157,023	$ 131,027	$ 384,515
Refrigeration	Non-Res Refrigeration	2,564	19,603,512	146,037,198	77,808	$ 836,049	$ 579,098	$ 1,214,041	$ 2,629,188
HVAC	Non-Res Shell	264	673,234	9,128,650	5,238	$ 203,063	$ 15,028	$ 123,427	$ 341,517
Process	Non Res Process	1,436	14,376,732	199,076,110	98,588	$ 1,004,955	$ 1,645	$ 890,121	$ 1,896,721
Comprehensive	Non Res Comprehensiv	8,472	39,373,076	425,067,129	203,852	$ 3,179,117	$ 972,044	$ 3,362,952	$ 7,514,113
Other	Other	650	23,057,452	216,584,747	115,575	$ 1,342,784	$ 818,082	$ 2,217,674	$ 4,378,540
SubTotal		117,435	644,260,232	6,749,912,013	3,508,569	$ 55,631,778	$ 43,122,790	$ 47,338,540	$ 146,093,107
T&D	T&D	76	335,000	9,630,000	5,573				
Total		117,511	644,595,232	6,759,542,013	3,514,141	$ 55,631,778	$ 43,122,790	$ 47,338,540	$ 146,093,107

Table 9 shows the growth in program expenditures since 2006. With total expenditures now at $146 million, 2009 represents the second consecutive year that public power expenditures have topped the $100 million threshold. Since the passage of SB1037 in 2005, program expenditures have grown by 168%, with energy savings growing by more than 281% during that same time period. This result is supported by the TRC estimates that have consistently increased since public power's energy efficiency reporting collaboration began.

Table 9 Program Expenditures



Understanding Public Power Energy Efficiency Expenditures

Public Utilities Code, Section 9615(e)(1) requires POUs to include "the sources of funding for its investment in energy efficiency and demand reduction program investments." For the most part, the vast majority of funding for public power energy efficiency programs comes from the traditional public benefits charges collected from each utility customer on a monthly basis. It is important to recognize these charges are designated not only for energy efficiency, but also for renewable investment, electricity-related research and development, and low income assistance. When the Legislature authorized the imposition of a public benefits charge beginning in 1998, local governing boards were given full discretion regarding how these funds would be allocated. Since that time, however, certain restrictions have been imposed, limiting how future expenditures can be allocated. As an example, under the California Solar Initiative, public utilities are precluded from reducing their expenditures on energy efficiency or low income assistance to fund its solar programs. That said, local governing boards allocate the majority of their public benefits expenditures to energy efficiency programs.

In some instances, local governing boards allocate dollars above and beyond public benefits expenditures, coming directly from each jurisdiction's general fund and sometimes specifically targeting what would be characterized as deferring generation purchases, referred to as procurement within the construct of AB2021. For the 2010 report, specific investments beyond the public benefits fund were reported by Alameda, Modesto Irrigation District, Palo Alto, and Truckee Donner PUD. Taking a slightly different approach, Pasadena increased its energy efficiency investments by raising the utility's public benefits charge beyond the traditional 2.85% of sales requirement.

Critical to the ultimate success of public power energy efficiency programs is the ability to optimize the use of public dollars that are dedicated to energy efficiency activities. The following table illustrates just how effective public power utilities are in their ability to deliver benefits to the communities they serve. Putting aside the growing costs of measurement and verification, the majority of expenditures represent direct incentives to the customer and direct installation costs. By keeping overhead costs low, POUs are able to maximize the flow of money into their respective communities, which fosters economic development and customer investment into existing building infrastructures. In turn, these investments help to retain local jobs as well as promote local job growth. Table 10 shows POU expenditures as both a percent of retail sales, and as the total program cost per net unit of energy saved. It is clear that California's POUs have established a high benchmark for efficient and effective delivery of energy efficiency programs.

Table 10 Efficacy of Public Power Efficiency Programs

2009 Estimated retail sales		$ 6,489,485,570
2009 Efficiency program expenditures		$ 146,093,107
Expenditures as a percent of sales		2.25%
Program cost per (net) MWH saved		$ 227

Energy Efficiency Targets: Measuring Progress to Plan

As discussed in Section II, each POU in California adopted 10-year energy efficiency targets for the first time in 2007. Before reporting on new 10-year targets that are in the process of being adopted in 2010, public power is now at the point where the 2007 targets can be compared to actual savings in multiple ways. Table 11 compares each utility's actual energy efficiency savings to its 2009 savings target and its three-year cumulative average. Such a comparison is important to state policymakers because the information is used by the CEC to develop statewide energy efficiency targets for energy policy development, as well as guidance to the CARB in its greenhouse gas program.

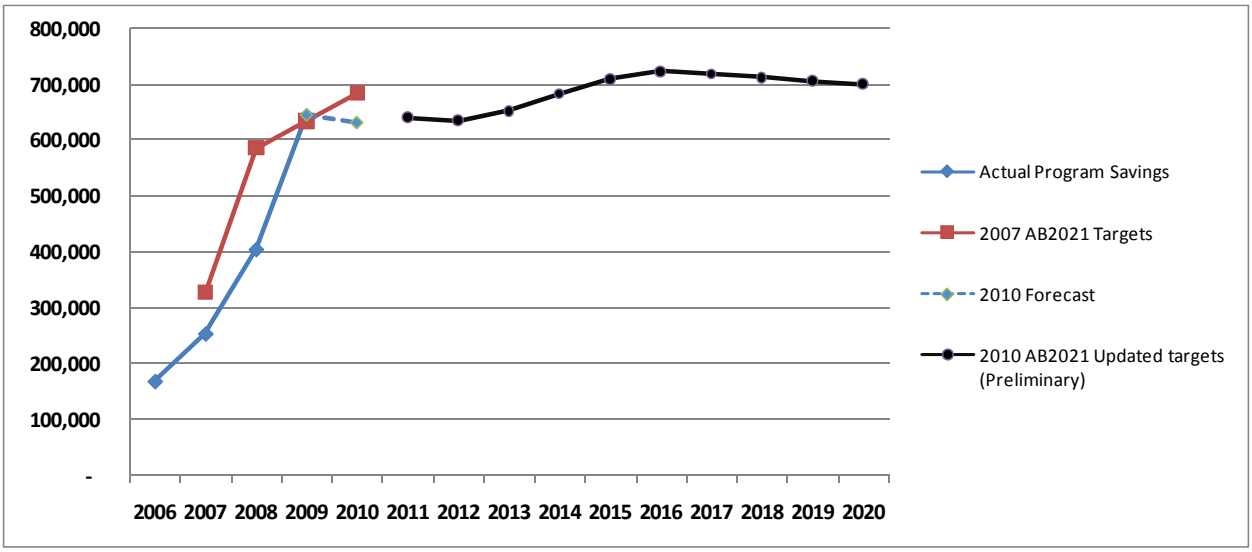
Looking at the table, public power utilities are now exceeding their stated targets. Last year, POUs realized 119% of their targets in aggregate, the first time this has occurred since reporting began in 2006. Even after considering time lags associated with new administrative support for aggressive programs, public power's cumulative three-year progress to plan is a healthy 84%. Sixteen utilities have exceeded their three-year cumulative targets for 2007-2009.

Table 11 Progress Towards AB 2021 Targets

	Annual				Cumulative	
	Actuals			Target	Actuals	Target
	2007 Actual Savings MWH	2008 Actual Savings MWH	2009 Actual Savings MWH	2009 AB 2021 Target MWH	Program Cumulative Savings 2007-2009	AB 2021 Cumulative Target 2007-2009
Alameda Municipal Power	921	2,135	2,211	760	5,267	2,281
Anaheim Public Utilities	8,724	16,808	25,805	16,233	51,337	48,247
Azusa Light & Power	1,041	2,352	2,145	2,627	5,538	7,765
Banning Electric Utility	253	634	3,030	1,041	3,917	3,124
Biggs	48	133	111	37	291	112
Burbank Water & Power	5,607	8,719	8,574	11,542	22,900	34,273
Colton Electric Utility	10,247	1,583	2,109	2,625	13,939	7,876
Corona Dept. of Water & Power	98	23	7	467	128	1,401
Glendale Water and Power	8,510	13,548	11,803	11,701	33,861	34,649
Gridley Municipal Utility	651	24	70	92	745	275
Healdsburg	152	236	361	198	749	595
Hercules Municipal Utility	0	8	10	153	18	453
Imperial Irrigation District	8,118	30,644	11,285	37,500	50,046	74,618
Industry	-	-	-	-	-	-
Los Angeles Dept. of Water & Power	61,641	115,519	287,574	300,000	464,734	729,000
Lassen Municipal Utility District	90	123	478	637	691	1,912
Lodi Electric Utility	383	3,091	1,674	2,000	5,148	6,000
Lompoc	102	304	392	1,040	798	3,121
Merced	3,773	1,871	1,536	2,322	7,180	6,966
Modesto	5,561	16,129	14,681	6,942	36,371	18,241
Moreno Valley Utility	44	298	285	822	627	2,466
Needles	1	72	186	817	259	2,452
City of Palo Alto Utilities	4,711	4,399	4,668	3,100	13,777	8,400
Pasadena Water and Power	4,238	8,164	30,064	13,500	42,466	28,500
Island Energy	-	10	449	158	459	464
Plumas Sierra	487	422	231	621	1,141	1,863
Port of Oakland	53	280	-	424	333	1,250
Rancho Cucamonga Municipa Utility	57	359	13	448	429	1,343
Redding Electric Utility	1,677	1,640	2,297	3,017	5,614	8,461
Riverside Public Utilities	13,109	10,682	16,052	23,060	39,843	67,910
Roseville Electric	4,326	9,314	8,584	7,986	22,224	23,194
SMUD	95,950	114,662	148,028	145,000	358,639	322,000
Shasta Lake	47	30	286	129	363	388
Silicon Valley Power	10,889	24,509	39,628	25,762	75,026	77,286
Trinity Public Utility District	19	12	15	-	45	-
Truckee Donner	604	4,456	3,576	1,001	8,635	3,004
TID	9,206	10,937	13,054	12,592	33,197	30,487
Ukiah Public Utility	30	279	553	264	861	791
City of Vernon Light & Power	230	935	2,436	-	3,601	-
Victorville	-	-	-	-	-	-
Summary	261,597	405,342	644,260	636,621	1,311,199	1,561,169
Summary (Excluding LADWP)	199,956	289,822	356,686	336,621	846,465	832,169
Summary (Excluding LADWP&SMUD)	104,006	175,160	208,658	191,621	487,825	510,169

Figure 4 provides a visual of energy efficiency program results in aggregate that are rapidly converging with targets established by each utility in 2007. POUs are meeting the aggressive targets of AB2021 and likely to set even more aggressive targets in the next cycle.

Figure 4
Progress Toward AB 2021 Targets



Note: For illustrative purposes, it is assumed that LADWP and SMUD's targets remain at their 2007 projections.

Program Target Setting for 2011-2020

In addition to the traditional data contained in past reports, this edition provides updated energy efficiency targets, providing estimates that have either been adopted by local governing boards or are at this point preliminary and based on internal utility analyses.

With the proliferation of POU reporting obligations, CMUA/NCPA/SCPPA had hoped to prepare one document that would include final estimates of actual and projected sales as well as newly-adopted 10-year energy efficiency targets. AB2021 calls for the targets to be completed by June 1, although it was hoped that each utility could seek adoption three months earlier. As noted in Table 12, only a handful of utilities were able to expedite internal review processes before the filing date of this report.

As such, most of the target data included in this report is preliminary in nature and still subject to review and eventual adoption by each utility's governing boards. As noted in the table, seven utilities have adopted targets, with others on schedule to have their targets adopted by the June 1st deadline. A supplemental document will be provided to the CEC during the summer once the full set of targets is finalized.

Table 12
Status of POU Adoption of Energy Efficiency Program Targets for 2011 – 2020

Utility	Final Target Adoption Status
Alameda	March 15, 2010
Anaheim	April 27, 2010
Azusa	April 26, 2010
Banning	NA
Biggs	March 15, 2010
Burbank	April 27, 2010
Colton	June 2010
Corona	June 2010
Glendale	By June 30, 2010
Gridley	April 19, 2010
Healdsburg	April 19, 2010
Hercules	April 20, 2010
IID	May 2010
Industry	NA
LADWP	July 2010
Lassen	April 27, 2010
Lodi	February 17, 2010
Lompoc	March 2, 2010
Merced	June 1, 2010
Modesto	May 2010
Moreno Valley	April 27, 2010
Needles	April 13, 2010
Palo Alto	May 2010
Pasadena	April 26, 2010
Pittsburgh Power/ Island Energy	April 5, 2010
Plumas Sierra	June 2010
Port of Oakland	April 6, 2010
Rancho Cucamonga	June 2010
Redding	June 2010
Riverside	May 2010
Roseville	May 5, 2010
SMUD	June 2010
Shasta Lake	April 6, 2010
Silicon Valley Power	March 9, 2010
Trinity	March 11, 2010
Truckee Donner	February 17, 2010
TID	March 9, 2010
Ukiah	April 7, 2010
Vernon	NA
Victorville	NA

Table 13 provides the currently available annual and cumulative ten year targets, 2011 through 2020. The targets presented in the table are preliminary, with the exception of eight utilities that have already adopted final targets (see table above).

Table 13
Preliminary Annual Program Targets for 2011-2020

	Annual Targets (MWH)											% of Sales
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10 yr Total	Forecast
Alameda	1,574	1,675	1,771	1,833	1,887	1,935	1,964	1,982	1,996	2,014	18,631	0.46%
Anaheim	24,264	22,542	26,296	32,291	37,785	36,956	34,802	32,568	30,339	28,238	306,081	1.12%
Azusa	2,068	1,904	2,071	2,367	2,591	2,736	2,738	2,715	2,692	2,669	24,551	0.89%
Banning	962	706	782	894	944	975	979	970	945	918	9,076	0.59%
Biggs	44	33	35	38	42	45	42	39	35	32	385	0.21%
Burbank	8,768	7,549	8,301	9,523	10,553	11,125	10,894	10,524	10,225	9,928	97,391	0.77%
Colton	3,162	2,902	3,508	4,594	5,064	5,043	4,827	4,574	4,317	4,092	42,082	1.05%
Corona	166	167	190	227	256	288	312	335	358	381	2,678	0.34%
Glendale	11,060	11,520	11,280	11,320	11,380	11,430	11,490	11,550	11,620	11,680	114,330	1.00%
Gridley	75	75	75	87	98	107	111	114	117	120	979	0.23%
Healdsburg	420	420	420	515	557	603	614	617	617	614	5,396	0.52%
Hercules	75	74	86	102	113	122	130	137	145	153	1,137	0.52%
IID	19,743	16,480	18,381	21,281	24,147	26,614	27,674	28,234	28,576	28,910	240,041	0.56%
Industry	-	-	-	-	-	-	-	-	-	-	-	
Lassen	375	375	375	501	650	849	1,043	1,177	1,203	1,219	7,767	0.49%
Lodi	2,296	1,667	1,905	2,242	2,587	2,873	2,948	2,985	3,019	3,053	25,575	0.51%
Lompoc	517	336	395	459	544	630	708	760	776	785	5,911	0.40%
Merced	1,316	1,117	1,258	1,483	1,765	2,054	2,143	2,191	2,242	2,297	17,866	0.33%
Modesto	16,207	15,136	16,154	18,161	20,252	21,857	21,102	20,074	19,258	18,623	186,824	0.67%
Moreno Valley	274	219	234	260	288	304	292	276	261	247	2,655	0.30%
Needles	205	160	181	211	246	280	299	312	323	334	2,549	0.33%
Palo Alto	5,799	6,290	6,782	7,276	7,906	7,927	7,950	7,973	7,999	8,026	73,929	0.75%
Pasadena	14,500	14,500	14,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500	166,000	1.23%
Pittsburg Power/ Island	42	37	40	46	55	64	64	62	60	59	529	0.29%
Plumas Sierra	237	230	247	279	346	491	778	1,191	1,546	1,688	7,033	0.36%
Port of Oakland	406	420	424	430	437	488	523	529	533	541	4,731	0.53%
Rancho Cucamonga	46	49	55	65	74	85	93	101	110	118	796	0.12%
Redding	2,523	2,496	3,076	3,776	4,457	4,655	4,649	4,518	4,402	4,350	38,903	0.38%
Riverside	14,017	12,526	13,705	16,071	18,159	19,617	19,994	20,037	20,082	20,169	174,378	0.75%
Roseville	8,390	8,360	8,604	8,639	9,054	10,032	10,903	10,470	9,874	9,387	93,713	0.62%
Shasta Lake	300	300	300	713	833	934	1,016	1,073	1,108	1,143	7,719	0.29%
Silicon Valley Power	23,055	25,415	26,255	28,502	29,506	28,413	25,456	23,052	21,328	20,020	251,003	0.77%
Trinity	14	13	14	14	14	14	14	14	14	14	139	0.01%
Truckee Donner	1,978	1,640	1,706	1,727	1,762	2,017	2,257	2,317	2,214	2,263	19,880	1.13%
TID	12,900	12,644	13,829	15,846	17,814	19,269	19,075	18,675	18,379	18,172	166,603	0.73%
Ukiah	250	250	310	341	375	413	454	499	549	604	4,045	0.33%
Vernon	8,020	7,863	7,992	8,655	9,766	10,716	9,468	8,073	6,962	6,087	83,601	0.63%
Total	**186,049**	**178,089**	**191,538**	**218,268**	**239,807**	**249,462**	**245,305**	**238,221**	**231,723**	**226,444**	**2,204,905**	

Customer Behavior and its Impact on the Ultimate Effectiveness of Utility Energy Efficiency Programs

Customer behavior is gaining important attention as policymakers struggle with promoting the aggressive deployment of energy efficiency programs. Sometimes, state policy objectives that provide the directive for utilities to aggressively pursue energy efficiency savings fail to align with the specific needs of individual customers. In these instances, especially in the case of smaller utilities where key customers make or break a program in any given year, such challenges may be perceived by policymakers as a failure of the utility to effectively implement energy efficiency programs in any given year. This is clearly not a reflection of a utility's lack of commitment to aggressively pursue the deployment of energy efficiency programs. Sometimes it is simply a reflection of the state of the economy. Consider the following examples that impeded certain utilities from reaching their targets in 2009:

- **Gridley** - Two issues kept Gridley from reaching its AB2021 targets last year. The first was the delayed startup of the Keep Your Cool program, which was not completed until the end of the

reporting period, making it ineligible to be included in this report. The second was a delay by Gridley's largest customer (Rio-Pluma) in installing a significant lighting upgrade. The project was delayed due to a downturn in its business , brought about by the recession.

- **Imperial Irrigation District -** The IID service area, Imperial County and the Coachella Valley in Riverside County, has been especially hard hit by the current economic recession. Historically high unemployment rates have climbed to the highest in the nation. This has resulted in significantly reduced program impacts in 2009 due to reduced customer investment in energy efficiency measures. IID is working with cities and regional associations to provide planning assistance, and to incorporate aggressive outreach to residences and businesses in their communities.

- **Plumas Sierra** – The utility's forecasted goals are tied to its Ground Source Heat Pump program. With the downturn of the economy, building permits for new homes in the Plumas Sierra service territory declined by 85% from 2008-2009, and heat pump installations declined from 35 to nine.

- **Riverside**– Similar to IID, Riverside Public Utilities is struggling with some of the highest unemployment rates in the country. With sales declining and cash flow a problem for many of its customers, the utility is now focusing on direct install programs and extending the small business lighting program.

- **Roseville** – While Roseville Electric did meet its AB2021 target last year, it continues to be negatively impacted by the ongoing recession, with sales decreasing and major construction projects in Roseville being placed on hold. The utility is now relying heavily on its Wastewater Treatment Plants and Chiller projects, but at this point there are limited large savings projects available in the City. Without these projects, Roseville would not have met the AB2021 energy efficiency goals.

Recent research by the University of California (California Institute for Energy and Environment) and the American Council for an Energy Efficient Economy (ACEEE) has provided, for both policymakers and utility planners, key insights on the human and social dimensions of energy use. In order for the next generation of energy efficiency programs to succeed, they will need to overcome behavior-based factors that limit the success of traditional energy efficiency programs. Policymakers can help lead the way by pursuing further market research into the types of behavior change strategies that will improve utility program performance, as well as re-evaluating rigid regulatory policies that hinder utility program experimentation and innovation.

V. Demand Reduction Programs

At present and as reported in previous energy efficiency reports, many of the large POUs have some form of demand response program, or are in the process of implementing new programs. In addition to

the smart grid efforts described in Section III, this section highlights progress being made on a couple of innovative programs that are gaining attention within the public power community. Such programs benefit from the ability of public power utilities to effectively collaborate on program design and deployment.

Ice Bear Project

Thermal energy storage is growing increasingly popular for public power utilities located in areas that have high summer peak demand usage.

SCPPA and a number of its members are investing more than $100 million in smart-grid enabled advanced energy storage, while Redding Electric has allocated more than $1 million of its own budget during the next 12-18 months to invest in an energy storage product called an Ice Bear. The product is designed reduces peak electrical demand by utilizing electric energy to produce ice at night during off-peak hours and then use the ice for cooling during the day. Approximately 1,500 units are expected to be installed by SCPPA utilities once the project is complete, allowing for up to 53 megawatts of additional load to be available during the height of the peak cooling season. Redding is looking to install 50 units in the first phase.

ICE Energy will provide for the manufacturing and delivery of equipment through to installation and commissioning; including milestones, measurement, payment criteria, and all other required terms. Glendale plans to install 1.5 MW of Smart Grid-Enabled, Ice Bear units over the next three years. In addition to installing Ice Bear Units, Glendale will work with Ice Energy to replace approximately 400 tons of aging, inefficient City HVAC units on City Facilities at the same time they are installing the Ice Bear units thereby taking advantage of available preferred pricing and reduced installation costs.

North American Power Partners

SCPPA has an agreement with North American Power Partners (NAPP) to support the development of demand response programs for its members. Under this agreement, Glendale will test the feasibility of offering demand response programs to its customers over the next five years. The two programs being developed at GWP will include a Price Responsive Customer Directed Program, and a Reserves Program. The Price Responsive Customer Directed (Self-Scheduled) Program will be a voluntary and economic-based DR program that pays participating customers a utility-established or market-based rate for curtailing electric usage. The program will offset standard energy resources (supply procurement) and also capacity resources when used to reduce peak demand. The program may be activated on a day-ahead or day-of basis.

The Firm Demand Reserves Program will be an available “on call” firm demand response resource program with relatively short customer notices and relatively short curtailment durations. These resources are firm, fully dispatchable resources that are controlled by the utility or the customer, but are typically automated. Customers in a Reserves program volunteer to reduce kilowatt load at their site(s) when called upon. A participating customer determines the kilowatts available to shed, hours available to shed, and may select a trigger price(s) that activates an individual call event. Once the customer commits to being available, they are considered a “firm” resource that must deliver if called or

be subject to a non-performance fee. Reserves programs offset standard reserves resources. Details of the Reserves Program, such as maximum call events per month, minimum minutes of customer notification, customer payment per kilowatt, customer non-performance to a call event, and event durations, would be determined in the design phase of specific programs.

VI. Conclusions and Lessons Learned

CMUA appreciates the opportunity to provide to the CEC this fourth assessment of public power energy efficiency programs in California. Consistent with the stated intent and mandates of SB1037 and AB2021, our analysis concludes that public power energy efficiency programs are producing significant energy savings for the state in the most cost-effective manner. The following bullets provide the key findings of this analysis:

- POUs continue to make major investments in energy efficiency, despite being impacted by the worst economic recession to affect California in decades. During FY08/09, POUs spent $146 million on energy efficiency programs, a 41 percent increase in spending compared with the previous year, and nearly three times the amount spent on programs just three years earlier.
- Reductions in electricity consumption are equally impressive. In the most recent reporting year, peak demand dropped 117 megawatts and more than 644 million kilowatt-hours were saved, continuing a dramatic upward trend in terms of annual increases in savings.
- California's POUs have invested more than $367 million on energy efficiency programs since 2006, representing direct investment in local community infrastructure, supporting economic development, and the creation of a robust green job workforce.
- Public power energy efficiency programs provide nearly four dollars of societal benefits for every dollar spent. Applying the Total Resource Cost (TRC) societal test, the weighted average cost effectiveness for all publicly owned energy efficiency programs in FY08/09 was 3.80, higher than the 3.15 estimate reported in the previous year. To put the number in the appropriate context, previous programs authorized by the California Public Utilities Commission (CPUC) for the investor-owned utilities have ranged between 1.6 and 2.4.[14]
- California's POUs exceeded their collective energy efficiency targets in FY08/09. Among the entire group, the utilities realized 101% of their savings. During the first three years in which efficiency targets were being monitored, public power reached 84 percent of their cumulative targets.

CMUA looks forward to continuing our constructive partnership with policymakers on energy efficiency issues and the aggressive promotion of the state's energy loading order. A supplemental document which includes final 10-year energy efficiency targets for all POUs will be submitted to the CEC later this summer. The next edition of this report will be submitted on March 15, 2011.

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[14] A value greater than or equal to 1.0 indicates that the program is cost effective.

Appendix A: Description of Utility Programs

ALAMEDA MUNICIPAL POWER

Established in 1887, the oldest municipal electric utility in the west

- Established in 1887, the oldest municipal electric utility in the west
- 34,200 customers, 85% are residential
- Peak demand: 76 megawatts, occurs in the early evening in the winter
- Alameda Municipal Power (AMP) load does not have large demand spikes like most of CA
- There is no residential air-conditioning
- Annual energy use is 405.4 gigawatt-hours
- 95 employees

Alameda Municipal Power Energy Efficiency Program Background

- Since 1991 AMP has spent more than $2.1million on direct customer rebates.
- The energy efficiency programs have resulted in a demand reduction of almost 8 MW - more than 10% of peak demand - and an energy use reduction of 24,000 MWh/yr – almost 6% of annual energy use.
- AMP provides energy efficiency programs and services to all customers including free energy audits, prescriptive and customized rebates, public awareness programs, and advanced technologies.
- The City of Alameda facilities the Alameda Unified School District have been retrofitted in the past with energy efficient lighting and heating, ventilation, and air-conditioning equipment. All the traffic lights have been retrofitted with light emitting diode lights.

Alameda Municipal Power Energy Efficiency Highlights FY 2009

- The net energy efficiency savings for FY 2009 were 2,211 MWh.

Fiscal Year	Net MWh/yr savings	AB2021 Target Savings MWh/yr
2007	923	760
2008	2,135	760
2009	2,211	760

- The total energy efficiency budget for FY 2009 is $544,900, of which 92% ($494,900) is from public benefits and 8% ($50,000) is from the power procurement budget.
- The projected savings for FY 2009 were 2,982 MWh and the actual savings were 2,211 MWh; a decrease of 26%. This decrease is due to the current economic crisis that is heavily impacting California. For example, participation in the Energy Star Refrigerator Rebate and Recycle Program decreased by almost 40%. Customers have decreased remodeling their kitchens and replacing marginal appliances at this time.
- The unemployment rate for Alameda County has more than doubled since 2007, from 5% to almost 12%. The vacancy rate at the major business parks has increased and many business owners are reluctant to make investments in energy efficiency. The City of Alameda building permit valuations for FY 2007 was $152 million and has decreased to $76 million for FY 2009, a 50% decrease.
- An Evaluation, Measurement, and Verification of the fiscal year 2008 energy efficiency programs was completed that focused on the commercial sector. The two objectives of the study were to perform a commercial customer attitude survey and to measure the energy impacts of the commercial retrofit projects.
- The key findings of the customer survey were that lack of program awareness is the biggest barrier to program participation and program satisfaction among participants is high. And from the energy impacts portion of the study, the measure realization from the program participants in the evaluation study was 82%.
- The projected net savings for FY 2010 are 1,722 MWh, less than 2009 and 2008 because of the current economic crisis. To deal with the impact of the economic crisis on AMP's energy efficiency targets, AMP will do the following:

    - Provide a Third Party Administered program aimed at lighting retrofits in small and medium businesses. In this program the first costs of energy efficiency measures will be reduced and the third party will do the marketing and manage the customer retrofit projects.
    - The Energy Star Refrigerator and Rebate program marketing will be focused more on the managers of multifamily rental properties. Typically for these customers, getting a new refrigerator is not optional, they must replace a refrigerator that is broken and beyond repair. Considering 50% of AMP's residential customers live in multifamily units, this will be a more reliable source of program participation.

Residential Energy Efficiency Programs

1. Energy Star Refrigerator Rebate & Recycle Program – Rebate for buying an Energy Star refrigerator and recycle the old refrigerator with our recycler.
2. 2nd Refrigerator Pick Up Program – Rebate for customers recycling their 2nd refrigerator with our recycler.
3. Great White Light Sale – Coupon worth $2 for a compact fluorescent that is redeemable at local retailers runs four months a year.
4. Incandescent Trade-Ins – Trade in events where customers bring in their incandescent lights and exchange those for compact fluorescents (CFL).
5. Meter Lending Program – Borrow a meter and measure the energy use of appliances.

6. Onsite energy audits – Residential audits at no cost.
7. Weatherization Cash Grant Program – Grant for up to 80% of the cost of weatherizing homes with electric heat.
8. On-line Energy Audit – On-line residential energy audit and associated tools such as an appliance calculator and energy library on AMP website.
9. Advanced Technologies – Promote advanced technologies such as LED down lights.

Low Income Programs

1. Energy Assistance Program – Provides energy audits, energy efficiency measures, and a 25% bill subsidy to qualifying low-income customers.
2. Energy Assistance through Supportive Efforts - Provides short-term emergency assistance based upon matching funds from the customer.
3. Low Income CFL promotions – CFL give away for low-income customers.

Commercial Energy Efficiency Programs

1. Commercial Lighting and HVAC Retrofit Program – Prescriptive rebates for retrofitting existing buildings with energy efficient equipment.
2. Commercial Customized Retrofit Program – Based upon the kWh/yr reduced, rebates for energy efficiency retrofits such as motors and server virtualization.
3. Commercial On-Site audits – Free energy audits for lighting, HVAC, refrigeration, process systems, etc.
4. New Construction Design Assistance - Grants of up to $10,000 for energy efficient design work.
5. New Construction Rebates – Whole building and systems rebates for energy efficient new construction.
6. Keep Your Cool – 3rd party administered commercial refrigeration retrofit program
7. Advanced Technology Program – Increased rebates to promote advanced technologies such as LED lighting.

Alameda Municipal Power Operational Efficiency

AMP received a grant from the American Public Power Association under their Demonstration of Energy Efficient Developments Program to perform an evaluation of the efficiency potential of AMP's electric system. The typical annual electric system loss for Alameda is 4%, or about 16,000 MWh. This is average for most utilities.

Nearly all of AMP's distribution system is 12 kV, the only exception is a small area at the former Alameda Naval Air Station, now know as Alameda Point. In FY 2009 staff developed and started to implement a project to eliminate the no load distribution system equipment and consolidate much of the low load equipment at Alameda Point.

Also at Alameda Point in FY 2009, AMP started a $1.4 million project to remove six old and inefficient 3,750 kVA transformers and replace those with two 2,500 kVA and two 1,500 kVA energy efficient

transformers and replace all the associated switch gear. Additionally, these transformers contain biodegradable oil.

Alameda Municipal Power Investment in Renewables

63% of AMP's electricity comes from CEC approved renewable resources including geothermal, landfill gas, wind, and small hydro. With the inclusion of large hydro, over 85% of AMP's resources are carbon free. New projects and contracts for biogas, landfill gas, small hydro, and solar are being evaluated.

Projects to extend the life and improve the efficiency of the Geysers Geothermal field are continuing. In addition to the injection of treated wastewater from neighboring towns into steam field injection wells, horizontal injection wells have been drilled. A 250 kW turbine in the injection well proof of concept project was successfully completed in 2009. Based on the success of this turbine, a 750 kW turbine is planned for 2010. Two 1 Megawatt photovoltaic solar arrays were constructed in 2009 to pump the treated wastewater uphill from the treatment plant to the injections wells. A 2010 project will begin changing the turbine blades to accommodate lower steam pressure.

The addition of a microturbine at McKay's hydro dam and a small generator on one of the tributaries into McKays reservoir are being planned for future installation.

Federal Economic Stimulus Funds

Energy Efficiency Conservation Block Grant Program – Funds committed

1. City Facilities – Complete energy audits for all city facilities; establish benchmark for each facility to be used to evaluate measures, and prioritize all energy efficiency measures by cost, benefit, feasibility, and reliability.

2. City Hall Occupancy Sensors – install lighting occupancy sensors throughout City Hall

3. Alameda Unified School District Facilities - Complete energy audits for all city facilities; establish benchmark for each facility to be used to evaluate measures, and prioritize all energy efficiency measures by cost, benefit, feasibility, and reliability.

4. Third Party Residential Energy Audit Training Program – A non-profit consulting firm will be retained to provide a turn-key program which will train volunteers to conduct residential energy audits and perform energy efficiency upgrades.

State Energy Program – projects under development

1. Keep Your Cool 2 – This is being developed via NCPA and SCPPA to create a third party administered commercial refrigeration program to install gasketing, door closures, electronically commutated motors, anti-sweat controls, evaporator, controls, and more.

2. Statewide Energy Star Appliance Program

3. Alameda County-Wide Green Packages Program – A county-wide program for improving the immediate and long term environmental performance of existing buildings and landscapes. Single-family homes are the first priority, followed by multifamily and small commercial buildings. This is an effort of Alameda County, cities in Alameda County, and StopWaste.org.

Temporary Assistance for Needy Families (TANF) Emergency Contingency Fund (ECF) Utility Assistance

1. AMP is working with the Alameda County Social Services Agency to obtain funding for a grant utility assistance program for qualified families.

ALAMEDA MUNICIPAL POWER

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Alameda Municipal Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	205	27	149,237	1,343,131	717	$ 10,809		$ 28,410	$ 39,219
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	43	43	281,942	3,611,557	1,959	$ 14,250		$ 82,057	$ 96,307
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	7	3	4,805	72,072	40	$ 2,481		$ 1,718	$ 4,199
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	111	56	546,758	5,902,216	3,248	$ 48,297		$ 140,230	$ 188,527
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration			1,201,388	4,805,553	2,534	$ 73,091		$ 106,024	$ 179,115
HVAC	Non-Res Shell			2,696	26,957	15	$ 316		$ 620	$ 936
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			24,071	72,213	40			$ 1,765	$ 1,765
SubTotal		366	129	2,210,896	15,833,699	8,553	$ 149,243		$ 360,824	$ 510,067
T&D	T&D									
Total		366	129	2,210,896	15,833,699	8,553	$ 149,243		$ 360,824	$ 510,067

EE Program Portfolio TRC Test	**1.93**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Alameda Municipal Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	246	33	179,084	1,611,757	860	$ 12,971		$ 34,312	$ 47,283
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	58	58	374,982	4,803,371	2,606	$ 18,953		$ 102,257	$ 121,209
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	86	43	63,327	949,909	529	$ 32,700		$ 20,222	$ 52,922
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	198	99	973,229	10,505,944	5,781	$ 85,968		$ 223,656	$ 309,624
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration			98,514	394,055	208	$ 5,993		$ 8,389	$ 14,382
HVAC	Non-Res Shell			2,696	26,957	15	$ 316		$ 574	$ 890
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			30,089	90,266	50			$ 1,922	$ 1,922
SubTotal		588	232	1,721,921	18,382,260	10,049	$ 156,900		$ 391,331	$ 548,231
T&D	T&D									
Total		588	232	1,721,921	18,382,260	10,049	$ 156,900		$ 391,331	$ 548,231

EE Program Portfolio TRC Test	**1.98**

Excluding T&D

ANAHEIM PUBLIC UTILITIES

ANAHEIM PUBLIC UTILITIES
www.anaheim.net

- Established in 1894, the only municipal electric utility in Orange County
- 175,004 meters, 112,548 are electric and 62,456 are water
- Consumption of energy: 74% Commercial/Industrial, 25 %residential and 1% miscellaneous
- Peak demand: 549 megawatts established October 2008
- Retail annual energy used: 2,534 gigawatt-hours.
- 377 full-time employees and 60 part-time employees

Overview of Public Benefit Programs

From January 1998 through June 2009, public benefits expenditures totaled $77,563,695 as follows: Energy Efficiency 58%; RD&D 14%; Renewable Energy Resources 21%; and Income-Qualified 7%. Energy Efficiency programs includes every residential customer, including low income. Residential customers are not required to provide income data for the Energy Efficiency programs. Therefore, the above percentage seems to over shadow the other categories. In actuality, there is a greater amount of income-qualified customers participating in the residential programs than is reflected above. Conservation of electricity and water is part of the utility's daily routine. In the long-term, conservation of energy and water, helps Anaheim Public Utilities defer the future purchase of more costly resources. In the short-term, conservation is vital in helping maintain stable rates. Anaheim offers approximately 45 value packed Advantage Services to help customers reduce electric and water use and save money.

Strategic Objectives

Develop programs and services to:

- Achieve legislatively driven goals and objectives (AB 2021)
- Meet the needs of our customers and Department
- Maximize Public Benefit Investments
- Promote New Energy/Water Technologies
- Expand Renewable Energy
- Promote Green Buildings
- Develop effective communications and marketing plans

Current Commercial Customer Programs

Total annual program cost: $1,817,144

Resulting in: 2,207 kilowatt demand reduction and 10,357,878 kilowatt-hour reduction

• **Comprehensive Energy Audits -** Customized on-site audits and recommendations designed to improve energy operating efficiency and help customers reduce costs.
• **Water Use Surveys -** Expert analysis of a facility's water use, specific water saving recommendations, and an explanation how incentives may help fund improvements.
• **Industrial Process Improvement Incentives –** Commercial and industrial water users adopting water saving processes are eligible for financial assistance.
• **Economic Development/Business Retention Rate -** Provides qualifying businesses with rate discounts with an efficiency measures installation component.
• **Permit Fee Waiver** – Waives the required permit fees for commercial customers who install high efficiency measures.
• **Customized Energy Incentives -** Customized financial incentives for installation of high-efficiency air conditioning, motors, and other production related equipment.
• **Heat Pump Incentives -** Encourage installation of high-efficiency heat pumps.
• **Exit Sign Program -** Financial incentives for up to 50 percent of the cost to retrofit incandescent bulbs or fluorescent lamps in exit signs with more efficient exit sign lighting technology.
• **Lighting Incentives –** Provides incentives to improve energy efficiency for a variety of lighting applications**.**
• **Small Business Energy Management Assistance -** Provides customers of less than 100 kilowatt demand with energy use evaluations, retrofit funding, and installation assistance; focusing on lighting upgrades, programmable thermostats, air conditioning, and refrigeration tune-ups.
• **New Construction -** Design assistance and incentives for new construction and facility expansions that install energy-efficient equipment that exceeds Title 24.
• **Commercial Water Equipment Rebates -**Businesses and companies are eligible for rebates by installing or retrofitting with qualifying water-saving devices.

Current Residential Customer Programs

Total annual Program Costs $2,558,913

Resulting in: 6,188 kilowatt demand reduction and 13,283,262 kilowatt-hour reduction.

• **Home Utility Check-Up -** A customized in-home survey of water and energy use and existing appliances; or an option to go to www.anaheim.net and click on Public Utilities to complete a detailed survey online. Either way, customers receive money saving advice, installation of up to five CFLs, water saving aerators and showerheads, and learn about incentives designed to help them be more water and energy efficient.
• **Home Incentives -** Rebates for purchase and installation of high efficiency ENERGY STAR® rated appliances and high efficiency conservation measures.
• **TreePower -** Provides complimentary shade trees and incentives for residential customers. Shade trees, when properly placed, can help reduce air conditioning costs.
• **Compact Fluorescent Lamp (CFL) Distribution Program –** Provides free CFLs to all Anaheim residents.

• **Rehabilitation Loan and Energy Efficiency Grants –** Income-qualified loans to residential customers for rehabilitation of existing single-family homes. Grants are offered in addition to installing energy efficiency measures.
• **Weatherization** - Provides weatherization measures, ensures combustion appliance safety and install Energy Star appliances for income-qualified residential homeowners and tenants.
• **Neighborhood Comprehensive Revitalization** – Provides comprehensive revitalization and retrofits to existing income-qualified neighborhood developments. Funding is provided to install high efficiency conservation measures and Energy Star appliances.
• **Lighten-Up CFL Fundraiser** - Provides free CFLs to students to sell as a fund raising activity to attend outdoor environmental camp (or other specified extracurricular activity). Schools pay $1 for each bulb sold which is applied to the Sun Power for Schools Program.
• **Permit Fee Waiver** – Waives the required permit fees for residential customers who install high efficiency measures and Energy Star appliances qualified for the Home Incentives Program.
• **Toilet Rebate Programs -** Rebates for ultra-low-flush and high efficiency toilets.
• **Income-Qualified Senior or Disabled Energy Credit -** Provides a 10 percent reduction on the electric portion of bills to seniors or long-term disabled customers at or below 80 percent of the Orange County median income.
• **Refrigerator Recycling Program** – Provides a rebate to customers who recycle an old, operational refrigerator or freezer.

Current Procurement Expenses

Total Annual Program Expenditures $292,358

Resulting in: 65 kilowatt demand reduction

Thermal Energy Storage (TES) Program – Program provides incentives for installation of small and large scale thermal energy storage systems that permanently shift demand for electricity to provide air conditioning from peak periods to off-peak periods.

Current Evaluation, Measurement and Verification (EM&V) Activities

Historically, Anaheim has offered limited EM&V under the Comprehensive Energy Audit Program (CEAP). To provide a more comprehensive approach, the Lincus Group was hired to conduct a study to develop and implement a new EM&V Program. This program will be completed in FY 09/10.

Public Facilities

Energy efficient LED lighting pilots and retrofits have been implemented in the City facilities; and all traffic sign lights and crosswalks have been retrofitted with LEDs.

City Schools

Anaheim Public Utilities rebates of $463,069 helped support the retrofit of private and public schools with energy efficient lighting and heating/cooling equipment.

Proposed Energy Efficiency Programs and Services 2009-10

• Continue CFL Distribution Program by mailing two CFLs to the residents of the East, West, Central and South neighborhood districts
• Expand existing programs and accelerate current levels of participation by targeted marketing campaigns, potentially increasing incentive levels
• Continue to evaluate the appropriateness of any new energy efficiency technologies
• Prepare request for proposal (RFP) to deliver evaluation, measurement and verification services by an independent 3rd party

Low Income

• Expand the low-income programs using stimulus funds
• Work closely with City Departments to ensure that all qualified customers are enrolled in the low income program

Projected Integrated Resources Program

• Provide incentives for large scale thermal energy storage program

Review Of Progress

In accordance with AB2021, Anaheim established goals for fiscal year 08/09 of 16,232,895 kWh and 3,415 kW. Anaheim has made tremendous strides in accelerating energy and demand reductions during this reporting period saving 25,804,822 kWh and reducing 8,426 kW demand, which represents 159% of our kWh .6% goal and 247% of our demand reduction .6% goal. This figure represents 100.4% of our forecasted retail sales 1% goal and 101.8% of our actual retail sales 1% goal. Anaheim will continue accelerating energy efficiency programs and will be striving to maintain a goal of 1% of forecasted 2009/2010 retail sales.

Projected T&D Projects

- Anaheim routinely assesses distribution system losses with the goal of assuring that system efficiency is economically optimized. The following are just a few examples of how Anaheim is working to reduce the level of line losses on its system.
    - Anaheim evaluates transformer losses as part of the total ownership cost when purchasing all utility transformers which are compliant with DOE efficiency standards.
    - All new loads are served directly from the 12.47 kilovolt system. Doing so reduces system losses substantially, compared to putting the loads on a lower distribution voltage.
    - Anaheim has an undergrounding program and an aggressive conductor upgrading program which uses larger wire size to improve system reliability while at the same time providing the added benefit of lower system losses.

- Anaheim regularly evaluates circuit performance and implements circuit configuration changes, addition of reactive sources and load balancing in order to optimize performance. These changes inherently reduce the distribution system losses.
- Anaheim has implemented an A Bank de-energization program which will save an estimated 2,000,000 kilowatt-hours annually.

- During the development and analysis of major capital projects, Anaheim considers loss reduction benefits as one of the factors to determine the final project site and configuration. The following are two examples:
  - Vermont Substation Project – besides reliability improvements, this project will reduce overall system losses due to moving the transmission source closer to the middle of the system.
  - Canyon Power Plant Project – This 200 MW peaker plant will complete all CEC licensing requirements in late 2009. Groundbreaking is anticipated to begin in early 2010. The addition of this new power source will improve system reliability and result in lower overall system losses.

Projected AMI/MDMS Projects

- Anaheim has begun the implementation of Advanced Metering Infrastructure/Meter Data Management System (AMI/MDMS) as a component of Anaheim's preparation for Smart Grid and to provide a platform to support compliance with anticipated regulatory and legislative requirements related to drought, demand-response, energy efficiency, and time-based rates including Time of Use, Critical Peak Pricing and Critical Peak Rebates. This project is intended to replace all electric and water meters with state-of-the-art smart meters with two-way communications. It will also support in-home communications with home appliances, air conditioning systems, pool pumps, and in-home displays and web access to provide customers with real-time or near real time information to facilitate improved management of electric and water consumption.

The Anaheim City Council approved agreements for acquisition and installation of an advanced MDMS and initial purchases of smart meters. MDMS has been placed into production. Smart meter installations began in third quarter of 2008. Approximately 3,500 residences have been transitioned to the new electric and water meters.

The AMI/MDMS system will have the following features:

- Smart meters with two-way communications hardware and software
- Electric meters that support remotely-controllable switches to allow for remote service disconnect and re-connect and smart thermostats for demand-response
- Water meters with leak detection and tamper information
- A wide area network to allow two-way communications between the utility and each meter in the APU service area

- Integration with APU's Outage Management System, Geospatial Information System, Work and Asset Management System, as well as the Customer Information System

- **Deployment of an Enterprise Service Bus (ESB)** - Simply put, an ESB is something of a digital switchboard, providing a robust integration and data sharing framework for various business systems. In the past, it was common to develop custom software interfaces between systems which were very specific to the software programs involved. Unfortunately, these highly customized point-to-point interfaces are very rigid and prone to failure when any of the participating systems are modified in any way, for example as the result of a version upgrade. An ESB provides a more standardized and flexible integration framework, increasing the reliability of existing business processes and simplifying the development of future integrations. The following APU business systems will "plug-in" to the ESB: Meter Data Management System (MDMS), Outage Management System (OMS), Geographic Information System (GIS), and eventually the Customer Information System (CIS).

- **Development of a Sustainability Information Management System (SIMS)** - In order to comply with state legislation, Anaheim will begin tracking and ultimately reducing greenhouse gas emissions within the city. Specifically, Assembly Bill 32 requires current emissions of Greenhouse Gases be reduced to the levels measured in 1990 by the year 2020. Although the city maintains a vast amount of data that can be used to estimate green house gas emissions, until now the information hasn't been integrated for the expressed purpose of generating such estimates. By implementing a Sustainability Information Management System, Anaheim will formalize its approach to tracking and monitoring greenhouse gases. The system will be Anaheim's primary mechanism to demonstrate compliance with applicable laws and evaluate the effectiveness of the department's community sustainability programs.

ANAHEIM PUBLIC UTILITIES

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Anaheim Public Utilities		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	164		534,031	8,010,468	5,096	$ 21,724	$ 462,771	$ 15,220	$ 499,715
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	5,453		9,592,222	67,145,551	34,004		$ 532,746	$ 72,474	$ 605,219
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	202		1,302,790	19,541,844	10,393	$ 40,450	$ 253,970	$ 14,235	$ 308,655
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive	402		1,917,514	28,762,704	18,298	$ 228,228	$ 614,606	$ 40,972	$ 883,805
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	289		590,737	8,861,052	5,106	$ 69,800	$ 3,605	$ 13,059	$ 86,464
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	654		2,896,828	20,349,348	11,305	$ 621,539	$ 11,374	$ 25,883	$ 658,796
Process	Non-Res Motors									
Process	Non-Res Pumps			2,096,492	31,447,380	16,560	$ 17,720	$ 157,023	$ 37,220	$ 211,963
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process	5		3,982	59,736	31	$ 2,000	$ 1,645	$ 71	$ 3,716
Comprehensive	Non Res Comprehensive	1,261		6,870,230	103,053,456	59,381	$ 453,715	$ 409,721	$ 151,879	$ 1,015,315
Other	Other									
SubTotal		8,430		25,804,825	287,231,540	160,175	$ 1,455,176	$ 2,447,460	$ 371,013	$ 4,273,649
T&D	T&D									
Total		8,430		25,804,825	287,231,540	160,175	$ 1,455,176	$ 2,447,460	$ 371,013	$ 4,273,649

EE Program Portfolio TRC Test	**7.63**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Anaheim Public Utilities		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	164		534,031	8,010,468	5,096	$ 21,724	$ 462,771	$ 10,997	$ 495,492
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	5,453		9,592,222	67,145,551	34,004		$ 532,746	$ 92,182	$ 624,928
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	202		1,302,790	19,541,844	10,393	$ 40,450	$ 253,970	$ 26,828	$ 321,248
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive	402		1,917,514	28,762,704	18,298	$ 228,228	$ 614,606	$ 39,487	$ 882,321
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	289		590,737	8,861,052	5,106	$ 69,800	$ 3,605	$ 12,165	$ 85,570
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	654		2,896,828	20,349,348	11,305	$ 621,539	$ 11,374	$ 27,937	$ 660,850
Process	Non-Res Motors									
Process	Non-Res Pumps			2,096,492	31,447,380	16,560	$ 17,720	$ 157,023	$ 43,173	$ 217,916
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process	5		3,982	59,736	31	$ 2,000	$ 1,645	$ 82	$ 3,727
Comprehensive	Non Res Comprehensive	1,261		6,870,230	103,053,456	59,381	$ 453,715	$ 409,721	$ 141,479	$ 1,004,915
Other	Other									
SubTotal		8,430		25,804,825	287,231,540	160,175	$ 1,455,176	$ 2,447,460	$ 394,332	$ 4,296,968
T&D	T&D									
Total		8,430		25,804,825	287,231,540	160,175	$ 1,455,176	$ 2,447,460	$ 394,332	$ 4,296,968

EE Program Portfolio TRC Test	**7.59**

Excluding T&D

AZUSA LIGHT & WATER

- Established in 1898, Azusa Light & Water is one of the oldest municipal utilities in Southern California and the West.
- The utility serves approximately 15,250 retail customers, of which 69 percent of the sales are for the Commercial and Industrial consumers that account for only 12 percent of the customer base.
- Peak demand of approximately 60 megawatts usually occurs in the early evening during the late summer.
- Azusa Light & Water does not self-generate, and purchases 80 percent of the total 267,304 megawatt-hours through long-term contracts.
- Un-audited sales revenues are $38,100,000, with un-audited operating costs of $37,100,000.
- Electric system includes 2 substations, 20 circuits and about 100 miles of electric lines.

Azusa Light & Water Energy Efficiency Program Highlights

Since inception, Azusa Light & Water has expended over $5,000,000 toward providing energy conservation information to the Azusa community and rewarding businesses and residents for upgrading inefficient energy consuming equipment with more energy efficient equipment. These efforts have resulted in an annual peak demand reduction of approximately 1 percent. Savings are based upon engineering estimates and measurements that have been field verified.

Current Commercial and Industrial Customer Programs: (Annual program cost: $372,300; resulting in approximately 206 kilowatts of demand reduction and over 12,986,900 kilowatt-hours of net lifecycle savings):

- Business Partnership Program: Retrofit existing buildings and factories with high efficiency lighting, air conditioning and process equipment.
- Free Energy Audits: Provide suggestions on the most energy efficient equipment and more cost effective methods of operations.
- New Business Retrofit Program: Encourage the use of the most energy efficient equipment in the design and construction of new buildings and factories.

Current Residential Customer Programs: (Annual program cost: $178,500; resulting in approximately 625 kilowatts of demand reduction and over 6,506,000 kilowatt-hours of net-lifecycle savings).

- EnergyStar® Refrigerator Program: Rebates are offered for the purchase of an EnergyStar® rated refrigerator.
- EnergyStar® Air Conditioner Program: Rebates are offered for the purchase of an Energy Star® rated room or central air conditioning unit.
- Home Weatherization Rebate Program: Rebates are offered for a variety of home weatherization measures.
- Free Home-in-Home Energy Audits: Provide recommendations for the effective use of energy within the residence.
- Free On-Line Home Energy Audit Program: Customers can enter various parameters that match their home and lifestyle, and receive an immediate list of conservation recommendations and measures along with an estimate of what each appliance within the home is using in the way of energy.
- LED TV and Computer Monitor Program: Rebates are offered for the purchase of LED TV's and computer monitors.

Public Facilities:

Program guidelines are essentially the same as the current commercial and industrial programs; therefore they are included in that category for funding and savings.

City Schools:

(Annual program cost: $29,000; resulting in approximately 3.0 kilowatts of demand reduction and 792,000 kilowatt-hours of net lifecycle savings).

- LivingWise: Provide an interactive 6th grade conservation education program to all 6th grade classes within the City of Azusa, both private and public.

Proposed Azusa Energy Efficiency Programs and Services: (for 2008-2009)

- Maintain existing programs at current levels
- Ensure that all new electric loads are efficient
- Evaluate the appropriateness of any new energy technologies
- Ensure that energy efficiency is part of integrated resource planning by determining and implementing the most cost-effective, reliable, and feasible energy efficiency measures
- Measure and evaluate the impact of energy efficiency programs

Low Income Programs:

- Maintain existing programs at current levels.
- Ensure that all qualified customers are enrolled in the low-income program.
- Conduct an evaluation of the low-income programs.

Azusa Investment in Renewable Energy:

Azusa Light & Water will continue to explore addition supplies of renewable energy to meet its 2017 requirement of 30 percent renewable energy in the power portfolio.

Azusa Demand Reduction Programs:

- Maintain existing summer load reduction program driven by reliability considerations. Current program entails calling large customers to conserve during Stage 2 episodes.
- Measure and evaluate additional price-driven demand response programs.

AZUSA LIGHT & WATER

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Azusa Light & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers			32	320		$ 514		$ 2	$ 516
HVAC	Res Cooling	40	22	64,934	1,548,873	986	$ 44,904		$ 14,111	$ 59,015
Appliances	Res Dishwashers			620	8,060	4	$ 2,496		$ 40	$ 2,536
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	547	76	411,092	3,686,692	1,941	$ 863	$ 16,675	$ 17,240	$ 34,778
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	3	3	19,741	355,334	189	$ 9,111		$ 1,865	$ 10,975
HVAC	Res Shell	35	35	45,366	907,119	525	$ 65,140		$ 5,576	$ 70,716
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	36	32	120,495	1,270,555	732	$ 10,000	$ 20,682	$ 7,554	$ 38,236
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	123	124	721,986	7,966,626	4,427	$ 67,731	$ 36,522	$ 43,111	$ 147,364
Process	Non-Res Motors	14	14	35,434	708,680	373	$ 15,188		$ 3,688	$ 18,876
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	10	10	16,023	179,690	95	$ 2,316		$ 854	$ 3,170
HVAC	Non-Res Shell	23	23	90,551	997,405	575	$ 37,236	$ 15,028	$ 5,986	$ 58,250
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other	3	3	618,924	1,863,972	1,097	$ 95,103		$ 11,339	$ 106,442
SubTotal		834	342	2,145,197	19,493,327	10,945	$ 350,600	$ 88,907	$ 111,366	$ 550,874
T&D	T&D									
Total		834	342	2,145,197	19,493,327	10,945	$ 350,600	$ 88,907	$ 111,366	$ 550,874

EE Program Portfolio TRC Test	**2.59**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Azusa Light & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers			32	320		$ 514		$ 2	$ 516
HVAC	Res Cooling	40	22	64,934	1,548,873	986	$ 44,904		$ 14,111	$ 59,015
Appliances	Res Dishwashers			620	8,060	4	$ 2,496		$ 40	$ 2,536
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	547	76	411,092	3,686,692	1,941	$ 863	$ 16,675	$ 17,240	$ 34,778
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	3	3	19,741	355,334	189	$ 9,111		$ 1,865	$ 10,975
HVAC	Res Shell	35	35	45,366	907,119	525	$ 65,140		$ 5,576	$ 70,716
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	36	32	120,495	1,270,555	732	$ 10,000	$ 20,682	$ 7,554	$ 38,236
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	123	124	721,986	7,966,626	4,427	$ 67,731	$ 36,522	$ 43,111	$ 147,364
Process	Non-Res Motors	14	14	35,434	708,680	373	$ 15,188		$ 3,688	$ 18,876
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	10	10	16,023	179,690	95	$ 2,316		$ 854	$ 3,170
HVAC	Non-Res Shell	23	23	90,551	997,405	575	$ 37,236	$ 15,028	$ 5,986	$ 58,250
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other	3	3	618,924	1,863,972	1,097	$ 95,103		$ 11,339	$ 106,442
SubTotal		834	342	2,145,197	19,493,327	10,945	$ 350,600	$ 88,907	$ 111,366	$ 550,874
T&D	T&D									
Total		834	342	2,145,197	19,493,327	10,945	$ 350,600	$ 88,907	$ 111,366	$ 550,874

EE Program Portfolio TRC Test	**2.59**

Excluding T&D

CITY OF BANNING ELECTRIC UTILITY

- Established in 1922.
- 33 employees.
- Of the 11,848 customers, 90 % are residential.
- Average demand during FY 08/09 was 17.4 MW, down 5.7% from the period prior.
- Peak demand during FY 08/09 was 43.4 MW, down 5.5% from the period prior. Peak demand is primarily due to air conditioning load during the summer.
- Retail energy sales in FY08/09 were 144,757,280 kWh, down 5.4% from the period prior. Retail sales are broken down as 47 percent residential and 53 percent commercial/industrial.
- Projected retail energy sales for FY09/10 are 137,725,300 kWh, down 4.9% from FY 08/09.
- The reductions in demand and sales are due to Banning's Energy Efficiency and Conservation efforts, foreclosures, and continued loss of large commercial load.

Overview of Banning Energy Efficiency Programs

During FY 08/09, Banning spent $214,379 in energy efficiency rebates, which have provided 370 kW demand and 3,030,291 kWh energy savings.

Current Customer Programs:

- Air Conditioner: Monetary incentives to replace an existing central air conditioning unit with a new high-efficiency unit.
- EnergyStar® Appliances: Monetary incentives for purchasing products that meet the Energy Star®" criteria.
- EnergyStar® Refrigerator: A monetary incentive for replacing an old inefficient refrigerator with a new energy efficient unit.
- Recycle: Rebates offered to remove and recycle operating old and inefficient refrigerators and freezers.
- Energy Weatherization: Monetary incentives to replace inefficient materials with products that will improve the energy efficiency of their facility and reduce energy use.
- Shade Tree: Rebates offered to plant shade trees around homes to help reduce the amount of energy used for air conditioning.

- Photovoltaic: Monetary incentives for the purchase and installation of photovoltaic (PV) or solar powered systems.
- New Construction: Monetary incentives for new construction projects that exceed the energy efficiency above California's Title 24 standards.
- Energy Audits: Provides customers with a variety of recommendations for reducing energy consumption.
- Low Income Assistance: An electric utility reduced Baseline Rate for qualified customers.

Proposed Banning Energy Efficiency Programs and Services: (2009-10)

- Banning has signed an Implementation Agreement with the Western Riverside Council of Governments (WRCOG) in support of the Contractual Assessment Program to Finance Distributed Generation Renewable Energy Sources and Energy Efficiency Improvements for its' customers in support of Assembly Bill 811. The program seeks funding though the Federal Stimulus program and will allow property owners within the City of Banning to obtain low interest loans for eligible renewable distributed generation projects.
- Banning has applied for $165,500 through the Energy Efficiency and Conservation Block Grant (EECBG) for high efficiency HVAC & Lighting retrofits on its' municipal buildings.
- Work with community organizations to further increase awareness of and overall participation in existing programs.
- Ensure that all new electric load is efficient.
- Evaluate and implement new energy efficiency technologies as applicable.
- Ensure that Banning's Renewable Portfolio Standard (RPS) is maintained.
- Measure and evaluate the impact of energy efficiency programs.
- Complete CFL Distribution Project and Energy Conservation Survey to all residential customers.

Low-Income Customer Programs:

- Complete door-to-door Energy Conservation Survey, which includes providing Low Income Program eligibility guidelines to all residential customers, to ensure that all qualified customers are provided an application form and encouraged to participate in the program.
- Conducted an evaluation of the low-income program, which resulted in modifying it from a flat percentage credit of the total electric bill (which did not encourage conservation), to a reduced rate per kWh on the Baseline Rate which is equal to the full annual incentive of $400. This ensures that those customers conserving energy receive the full benefit of the monetary assistance.

Banning Investment in Renewables:

The City of Banning's RPS has committed the Utility to reach 33 percent renewables by 2020.

- The City has contracted for geothermal energy from two generating facilities. Together they supply approximately 20 percent of the City's energy need.

Banning Demand Reduction Programs:

The City of Banning does not currently have any demand reduction programs in place.

Banning EM&V:

The City of Banning is currently negotiating the work scope with firms on contract with the Southern California Public Power Authority (SCPPA) to perform a cost effective Measurement and Verification process.

CITY OF BANNING ELECTRIC UTILITY

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Banning Electric Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	1,254	12,544	7	$ 4,900		$ 103	$ 5,003
HVAC	Res Cooling	281	162	240,298	4,413,846	2,809	$ 102,384		$ 58,176	$ 160,561
Appliances	Res Dishwashers			886	11,513	6	$ 2,025		$ 86	$ 2,111
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	722	106	563,200	5,068,800	2,567	$ 37,840		$ 34,509	$ 72,349
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	6	6	38,894	700,099	372	$ 22,046		$ 5,518	$ 27,564
HVAC	Res Shell	95	95	196,714	3,934,272	2,265	$ 45,184		$ 35,431	$ 80,615
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			1,989,045	5,967,134	3,435			$ 49,720	$ 49,720
SubTotal		1,106	370	3,030,291	20,108,209	11,461	$ 214,379		$ 183,544	$ 397,923
T&D	T&D									
Total		1,106	370	3,030,291	20,108,209	11,461	$ 214,379		$ 183,544	$ 397,923

EE Program Portfolio TRC Test	**2.02**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Banning Electric Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	1,317	13,171	8	$ 5,145		$ 130	$ 5,275
HVAC	Res Cooling	296	170	252,313	4,634,539	2,949	$ 107,504		$ 45,664	$ 153,168
Appliances	Res Dishwashers			974	12,664	7	$ 2,228		$ 125	$ 2,352
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	722	106	563,200	5,068,800	2,567	$ 37,840		$ 49,943	$ 87,783
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	7	7	42,784	770,109	410	$ 24,251		$ 7,588	$ 31,838
HVAC	Res Shell	100	100	206,549	4,130,986	2,378	$ 47,443		$ 40,703	$ 88,146
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			1,332,660	3,997,980	2,301			$ 39,392	$ 39,392
SubTotal		1,125	383	2,399,797	18,628,249	10,619	$ 224,410		$ 183,544	$ 407,954
T&D	T&D									
Total		1,125	383	2,399,797	18,628,249	10,619	$ 224,410		$ 183,544	$ 407,954

EE Program Portfolio TRC Test	**2.01**

Excluding T&D

CITY OF BIGGS

- Biggs has 611 residential, 37 commercial, 12 municipal and 3 industrial customers.
- The City of Biggs projects a growth rate of 1% per year.
- Peak demand – in August 2008 was 4.0 MW
- Annual energy use: 16.3 GWH.
- Power content: Geothermal 15%, small hydro 1%, large hydro 47%, Natural Gas 19%, Coal 15% and Nuclear 2%.

CITY OF BIGGS ENERGY EFFICIENCY PROGRAM HISTORY:

- The City of Biggs implemented residential demand-side management programs in 1997 but completely remodeled our programs in mid 2005. In FY 2006-2007, our program was expanded to include commercial audits, educational programs and commercial holiday lighting. In FY 2007/2008 we again expanded our commercial program to include commercial lighting, refrigeration and HVAC rebate programs. In FY 2008/2009, the city implemented the "Keep Your Cool" program for food-service customers.
- Between fiscal year 2001 and fiscal year 2006, the City experienced a growth in residential demand-side management program participation of 97% and a growth in residential demand-side management rebate expenditures of 96%.
- As the economy began to contract in fiscal year 2007, participation in the residential demand-side management programs began to drop. Through fiscal year 2009, the City had experienced a drop in residential participation of 87%. The City's commercial demand-side management programs grew during this same period due to a lighting, HVAC and refrigeration retrofit project for all Biggs Unified School District buildings and the "Keep Your Cool Program" which was extended to the two grocery stores in town. The BUSD project, which will span three years, accounted for 96% of rebate dollars spent since the end of fiscal year 2007. This project is scheduled to finish in fiscal year 2010.

Meeting demand-side management goals, after the completion of the BSUD Project, will be extremely challenging due to the limited number of commercial customers in town and the inability or unwillingness of residential customers to invest in energy efficiency upgrades for their homes.

Current Demand-side Management Programs and Services

1. ***Keep Your Cool Program:*** This third-party program is offered by City of Biggs through a partnership with The Bay Area Gasket Guy. The goal of this program is to deliver a comprehensive program of prescriptive and calculated demand-side management measures within the food service and grocery industries where commercial refrigeration equipment represents a significant portion of energy demand. The first phase of this program concentrated on the replacement of worn, ineffectual refrigerator door gaskets, strip curtains and auto-closers.

2. ***Commercial Energy Audits*****:** The City of Biggs offers free, customized commercial energy audits, including lighting assessment, HVAC assessment, equipment assessment and a review of energy usage. Specific recommendations to improve energy efficiency and reduce energy use are provided.

3. ***Commercial Energy Rebate Program:*** The City of Biggs offers customized demand-side management incentive programs to commercial customers, focusing on peak load reduction and energy savings. Generous rebates and comprehensive technical support are available to commercial customers to promote the installation of energy efficient lighting, HVAC, refrigeration, equipment and controls.

4. ***Investment Grade Audit Program:*** The City of Biggs offers, free of charge, Investment Grade Audits for all school district buildings as a way to support the district in acquiring grant funding for energy efficiency retrofits.

5. ***Education Services:*** The City of Biggs supports the 3-12 Solar Schoolhouse Program by funding teacher participation in the "Summer Institute for Educators" and by supplying Solar Schoolhouse Educational Tools for classroom use.

6. ***Residential Energy Rebate Program:*** The City of Biggs manages a comprehensive residential demand-side management incentive program, focusing on peak load reduction and energy savings. Generous rebates are available to residential customers for weatherization measures such as attic/wall insulation, dual pane windows, shade screens, radiant barriers and cool roof products. Biggs offers rebates for measures which reduce summer cooling load such as high efficiency HVAC, whole house fans and attic fans. Biggs also offers rebates for Energy Star refrigerators and lighting controls.

CITY OF BIGGS

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Biggs		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell	1	1	895	17,904	10	$ 324		$ 321	$ 645
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	7	5	29,243	328,435	182	$ 5,762		$ 5,453	$ 11,215
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	37	5	80,514	685,491	361	$ 9,900	$ 2,370	$ 10,158	$ 22,427
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		44	10	110,652	1,031,831	553	$ 15,986	$ 2,370	$ 15,932	$ 34,287
T&D	T&D									
Total		44	10	110,652	1,031,831	553	$ 15,986	$ 2,370	$ 15,932	$ 34,287

EE Program Portfolio TRC Test	**3.35**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Biggs		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell			324	6,472	4	$ 117		$ 116	$ 233
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	2	2	10,571	118,728	66	$ 2,083		$ 1,971	$ 4,054
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	13	2	29,105	247,801	131	$ 3,579	$ 857	$ 3,672	$ 8,107
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		16	4	40,000	373,001	200	$ 5,779	$ 857	$ 5,759	$ 12,395
T&D	T&D									
Total		16	4	40,000	373,001	200	$ 5,779	$ 857	$ 5,759	$ 12,395

EE Program Portfolio TRC Test	**3.35**

Excluding T&D

BURBANK WATER & POWER (BWP)

BURBANK WATER & POWER (BWP)

- Established in 1913
- Serving the 100,000 residents of and 6,000 businesses located in the City of Burbank with water and electricity
- Burbank's peak electrical demand hit a system high of 309 megawatts in August 2007
- Annual energy use is approximately 1,200 gigawatt-hours
- Burbank Water and Power employs about 330 employees

BWP's Energy Efficiency Program Highlights

During FY08/09, BWP spent over $3 million for energy efficiency programs supported through Public Benefits. These programs resulted in net peak demand savings of 3,099 kilowatts, net annual energy savings of 8.7 million kilowatt-hours, and an estimated net lifetime energy savings of 108 million kilowatt-hours.

Our projections for FY09/10 show spending on energy-efficiency initiatives of $3.3 million from Public Benefits funding. Our existing programs are projected to result in net peak demand savings of 2,300 kilowatts, net annual energy savings of eight million kilowatt-hours, and an estimated net lifetime energy savings of 101 million kilowatt-hours. Please note that in late 2009, an ambitious new program providing energy, water and natural gas savings was rolled out to Burbank residents. As of this writing, insufficient data exists by which to estimate savings for this program, but by all accounts we anticipate significant results from this Green Home House Call program.

Green Home House Call Program: BWP's Newest and Most Ambitious Program to Date

As mentioned above, BWP began offering this newest whole house efficiency program in September 2009. Green Home House Call has several components, all provided at no charge to participants:

1. In-home energy and water education: KEMA has been retained to meet with residents to discuss their energy and water usage;
2. Efficiency Installations: Devices that save electricity, water and natural gas are installed for free in the residence, including showerheads, bathroom and kitchen faucet aerators, and compact fluorescent light bulbs.
3. Attic Insulation: Attic insulation levels are reviewed in homes with central air conditioning. When below a specified R-value, the homeowner is offered free insulation as part of the program's service.

4. Duct Testing and Sealing: When crews are dispatched to provide insulation services, a duct testing and sealing team is included, providing these services for free as well.
5. Irrigation System Inspection and Programming: Given the dire state of water supply in California, BWP has included irrigation system inspection and controller programming as part of this on-site program. Controllers will be programmed to comply with the City's landscape watering ordinance and the irrigation system will be turned on and inspected for any over-spray or other problems.

BWP is heavily advertising this program and already the program has a waiting list. We are gearing up for Phase II of the program in partnership with the Southern California Gas Company to provide even more extensive services for low-income households in Burbank. Phase II will be in place during Second Quarter 2010.

Current Customer Programs:

BWP offers an ongoing array of both commercial and residential programs.

Here is a brief description of Burbank's commercial programs:

- Energy Solutions Business Rebate Program: Rebates offered for early replacement efficiency retrofit projects such as lighting and HVAC. The program also includes rebates for thermal energy storage units to reduce air conditioning peak demand.
- Business Bucks: Targeted to smaller and mid-sized businesses, this program provides free surveys of commercial facilities by a certified energy manager. A report listing recommended energy efficient retrofits is provided from which businesses can select. Customers receive up to $2,000 in cost-effective energy-efficiency retrofits paid for by BWP.
- HVAC Tune-Up Program: In 2008, BWP created this new program for both residents and businesses in Burbank. The program uses Proctor Engineering's proprietary CheckMe! software to diagnose and verify proper air conditioning tune-up requirements.
- Made in the Shade Program: Up to 20 free shade trees are provided to interested Burbank businesses. Shade trees are nature's air conditioners, and mature trees properly sited can significantly reduce air conditioning use.
- Leadership in Energy and Environmental Design (LEED) Certification Incentive Program: Incentive program to encourage the construction of environmentally preferred buildings in Burbank.

Here is a brief description of Burbank's residential programs:

- Home Rewards Residential Rebate Program: Cash rebates offered to Burbank residents purchasing Energy Star® appliances and taking energy-efficiency actions, such as installing attic or wall insulation in their homes.
- HVAC Tune-Up Program: The program uses Proctor Engineering's proprietary CheckMe! software to diagnose and verify proper air conditioning tune-up requirements.

- Home Energy Analyzer: This free online service allows residents to input their household characteristics and energy use to discover no cost, low cost and investment opportunities to save energy.
- Made in the Shade: Up to three free shade trees are provided to interested Burbank homeowners to reduce air conditioning use.
- Refrigerator Exchange Program: Burbank's low-income customers can receive a new Energy Star™ refrigerator in exchange for their existing unit.
- Refrigerator Round-Up Program: Any Burbank resident with a second operable refrigerator can turn that appliance in to BWP for environmental recycling and receive a $100 billing credit.

Additionally, BWP offers ad hoc energy-saving opportunities throughout the year, including providing free compact fluorescent lights at community events and "LivingWise" kits to 6th grade students. These kits contain both energy and water saving devices for the household. All Burbank Unified School District students participate in this program.

New Program for 2010: Home Energy Reports

During the first half of 2010, BWP staff will roll out a new residential program, called Home Energy Reports. This new service, offered by OPower, recognizes the power of providing comparative usage information to consumers. The Home Energy Reports will show consumers how they stack up in terms of electricity usage compared to 100 "neighbors." Neighbors is here defined as not necessarily someone living next door to you, but rather those households in relative proximity who share important housing characteristics with yours, including square footage and number of household members. In a pilot study conducted by SMUD, energy reductions of about 2.5% were reported. Burbank's City Council has approved a two-year program whereby over the course of the two years, every household in Burbank will receive an average of six comparative reports.

As always, BWP staff continues to explore cost-effective efficiency opportunities.

BWP T&D Efforts:

Our staff is currently preparing plans for a 20-year project to upgrade our distribution system. Early projections are that as much as 17 gigawatt-hours can be saved with a full-scale system upgrade.

Target Setting:

On an annual basis, the Burbank City Council receives a written report and staff presentation on our efficiency targets and how effective our programs are in achieving those targets. The 2010 presentation has been scheduled for April 27. This year, the Council will be presented with the market potential targets derived by Summit Blue Consulting for the City of Burbank.

BWP M&V Efforts:

Along with virtually every other publicly owned utility in California, Burbank Water and Power uses the KEMA/E3 Energy Efficiency Reporting Tool to ensure accurate reporting of energy and demand

reductions. While measurement and verification elements are built into every program, the M&V process varies by program. Here are some examples:

- In our Business Bucks program, an audit and installation program for small to mid-sized businesses, BWP uses the services of Richard Heath and Associates to verify all installed measures.
- BWP administers a business rebate program, Energy Solutions, for companies installing high efficiency energy retrofits. All installations receiving financial support through Energy Solutions are toured and verified by BWP's Key Account Representatives, all of whom are trained in electrical engineering.
- Home Rewards, BWP's residential appliance rebate program, receives over 3,000 applications annually. Each application requires receipts showing products purchased. Products are verified against the Energy Star website to ensure that energy requirements are met. This verification process is conducted in-house.
- BWP runs two refrigerator programs utilizing the services of Appliance Recycling Centers of America (ARCA). In both the Low-Income Refrigerator Exchange and Second Refrigerator Recycling programs, ARCA is in the home verifying information related to the old refrigerators.
- The HVAC Tune-Up program, offered to both residents and businesses, uses Proctor Engineering Group's "CheckMe" software. Incentives are paid to air conditioning contractors only for items verified by Proctor.

Additionally, BWP has hired Lincus Energy, Inc. to conduct a third-party EM&V study of BWP efficiency programs. Lincus's measurement and evaluation work will be conducted during the first quarter of 2010 and will be reported to the CEC by March 31, 2010.

Smart Grid on the Horizon:

BWP was recently honored to receive a $20 million grant for a city-wide Smart Grid initiative.

BWP recognizes that a number of fundamental changes are underway in the industry that will significantly increase the need for utilities to monitor and actively manage demand on their systems. BWP is already experiencing challenges with customer-owned distributed resources and plug-in electric vehicles (PEV). We expect that PEV technology will provide air quality improvements, reduction in GHG emissions, and energy conservation. Customer owned photovoltaic (PV) devices currently generate over 3 MW in our service territory, and several customers have energy storage devices installed. Some of our largest commercial customers have stated their plans to convert their fleet vehicles to PEV during 2010.

The federal government through the American Recovery and Reinvestment Act as part of the largest energy grid modernization in U.S. history set aside $3.4 billion to help fund this initiative. BWP applied for and was awarded a $20 million grant from these ARRA funds, which will be administered by the Department of Energy.

The Burbank Water and Power Smart Grid Program includes deployment of a comprehensive, secure integration of multiple, intelligent Smart Grid infrastructure systems and control processes designed to accelerate the modernization of the local grid and address these challenges. BWP with its compact

service territory, high customer density, and favorable climate is the perfect location to develop a full-scale Smart Grid deployment to serve as a model for other utilities to emulate. Its program includes the following primary projects, all of which will be initiated over the next few years:

9. Secure Wi-Fi Mesh Network.
10. Meter Data Management System
11. Advanced Metering Infrastructure for both electric and water
12. Mission-Critical Asset Protection Program
13. Outage Management System
14. Distribution Automation
15. Customer Smart Choice Programs
16. Energy Demand Management System

Additional Stimulus Funding:

Burbank Water and Power has also been awarded an Energy Efficiency Community Block Grant of $1.1 million in support of a renewable project. By Third Quarter 2010, Burbank will have constructed a 147-kilowatt solar photovoltaic carport on our campus, bordering a heavily used thoroughfare. The purposes of this project are to demonstrate how architecturally appealing solar installations can be, while producing a significant amount of renewable energy. This project will additionally be in support of the utility's Platinum LEED application.

In addition to the EECBG and Smart Grid grants, Burbank is also partnering with the Southern California Public Power Authority (SCPPA) on several ARRA applications and expects that next year's reporting will include several exciting program developments!

Summary

Burbank Water and Power remains committed to providing our residential and business customers with safe, reliable and affordable services and making all reasonable efforts to reduce consumption of both electricity and water by significant levels**.**

BURBANK WATER & POWER (BWP)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Burbank Water & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	1,678	1,481	1,302,099	21,350,581	13,583		$ 432,170	$ 121,387	$ 553,557
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	2,051	277	1,515,110	13,635,994	6,906	$ 346,972	$ 346,972	$ 41,347	$ 735,291
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	161	161	1,132,973	20,393,510	10,846	$ 67,200	$ 138,468	$ 72,340	$ 278,008
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive	311	235	539,893	4,912,934	2,601	$ 391,236	$ 50,555	$ 16,018	$ 457,809
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive	915	915	3,867,360	44,329,662	23,344	$ 452,354	$ 562,323	$ 142,497	$ 1,157,174
Other	Other			216,332	1,657,382	883		$ 18,524	$ 155,376	$ 173,900
SubTotal		5,117	3,069	8,573,768	106,280,063	58,163	$ 1,257,762	$ 1,549,012	$ 548,965	$ 3,355,739
T&D	T&D	30	30	100,000	2,000,000	1,152				
Total		5,147	3,099	8,673,768	108,280,063	59,315	$ 1,257,762	$ 1,549,012	$ 548,965	$ 3,355,739

EE Program Portfolio TRC Test	**3.95**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Burbank Water & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	423	223	567,590	10,627,702	6,761		$ 267,500	$ 74,259	$ 341,759
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	132	17	93,600	842,400	427	$ 15,000	$ 15,000	$ 2,978	$ 32,978
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	120	120	909,920	16,378,560	8,711	$ 50,000	$ 158,500	$ 68,698	$ 277,198
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive	380	285	826,000	7,220,000	3,905	$ 450,000	$ 573,000	$ 29,336	$ 1,052,336
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	21	21					$ 75,000		$ 75,000
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive	1,625	1,625	5,370,000	63,200,000	33,282	$ 700,000	$ 410,000	$ 238,876	$ 1,348,876
Other	Other			122,080	775,040	418		$ 20,001	$ 152,993	$ 172,994
SubTotal		2,701	2,291	7,889,190	99,043,702	53,503	$ 1,215,000	$ 1,519,001	$ 567,140	$ 3,301,141
T&D	T&D	30	30	100,000	2,000,000	1,152				
Total		2,731	2,321	7,989,190	101,043,702	54,655	$ 1,215,000	$ 1,519,001	$ 567,140	$ 3,301,141

EE Program Portfolio TRC Test	**3.32**

Excluding T&D

COLTON ELECTRIC UTILITY (CEU)

Colton Electric Utility was established in 1895 by the City of Colton

- CEU has three substations and owns a 43 megawatts gas combustion turbine generator
- CEU has 18,688 electric meters, 15,694 are residential accounts, 1948 are commercial accounts, 57 are industrial (use more than 200 kW) accounts and 179 are municipal accounts.
- Peak demand for 2008 was 90 megawatts on August 22 at 4:00 p.m.
- In fiscal year 2008--2009 Colton Electric Utility sold 397,923 Megawatt-hours
- Residential makes up 28 percent of electric sales, Commercial 27 percent, Industrial 42 percent and 3 percent Municipal of total sales
- CEU has 43 employees

CEU Energy Efficiency Program Highlights

From FY 1999 through FY 2009, Colton spent $5,281,061 on Public Benefits Programs. Spending for the major efficiency programs was $3,707,098 and reduced peak demand by 1,828 kilowatts, overall demand by 6,831 kilowatts, annual energy use by 28,561571 kilowatt-hours and lifecycle energy use by 44,190,406 kilowatt-hours. The budget for FY08/09 was $1,318,800. The budget for FY 09/10 is $2,141,805.

Overview of Current Energy Efficiency Programs:

The objectives of the program are to implement energy efficiency programs for all customers by evaluating energy use of customers and start with low and no cost measures, then do the most cost effective reliable measures beginning with lighting upgrades for all customers.

Current Commercial Customer Programs:

- The major commercial program has been lighting rebates that paid 200 per kilowatt reduced. From 1997 to 2005, this program cost $87,730, reducing demand by 428 kilowatts and saving approximately 1,250,000 kilowatt-hours per year.
- In 2004, CEU had a consultant perform audits for 868 businesses to identify needs and opportunities for improving energy efficiency. The audits found that lighting upgrades at these customers had a potential for reducing demand by 2,026 kilowatts and saving 7,145,213 kilowatt-hours annually.
- In 2005, a free direct install lighting program was implemented to facilitate lighting upgrades. This program replaced inefficient lighting with up to date systems at 250 businesses and

reduced demand 158 kilowatts saving 742,093 kilowatt-hours annually. The program cost $185,212.

- Our 2007 -2008 free direct install lighting program expanded to cumulatively serve 578 customers. The reduced peak demand was 123.8 kW saving customers 849,185 kWh. The program's cost was $56,514. The commercial industrial lighting program has cumulatively reduced peak demand by 772.8 kW and saved 3,061,474 annually for a total cost of $552,386.

Current Residential Customer Programs 2008-2009:

- All 16,000 residential customers have been provided with 2 free compact fluorescent lamps. Each lamp uses 15 watts to provide the light of a 60 watt incandescent lamp. This $122,857 program reduced peak demand by 218 kilowatts and overall demand by 1,510 kilowatts saving 1,164,800 kilowatt-hours per year. The total lifecycle saving is calculated to be 10,483,200 kilowatt-hours.
- The CFL mailing program so far has sent out 112,000 lamps to 16,000 customers reducing peak demand by 784 kW and providing a combined annual savings of 604 Megawatt hours. The life cycle savings of these lamps could be as high as 5,436 Megawatt hours
- Home energy audits are available to customers with high energy bills.
- Online energy audits and information is available through Apogee Interactive.

Low Income Customer Programs 2008-2009:

- 902 Low income customers participated in our once a year one month 100% credit on electric charges. This allowed customers who received high bills especially during summer months to not be burdened with a difficult to pay bill. $149,452 was spent an average benefit of $165 per customer.
- 186 Low income customers were assisted by a refrigerator replacement program that provided a new energy saving refrigerator and recycled the old refrigerator. $93,000 was spent and 7 kW peak demand reduction and a lifecycle savings of 74,400 kWh will result from the program.
- Portable evaporative coolers were given to 200 customers to provide comfort and reduce air conditioning costs. The cooler program cost $43,134 and reduced demand by 380 kW, saved 175,400 kWh per year and has a projected lifecycle savings of 2,632,800 kWh.

City Facilities to date:

- All traffic signals were retrofitted with LED energy saving lights. The $245,000 project reduced demand by 62 kilowatts and saved 550,000 kilowatt-hours a year, saving $85,000 a year in energy costs.
- All city facilities had high efficiency lighting installed and City Hall and the Police Department had extremely old air conditioners replaced with high efficiency units.

Measurement and Verification Activities:

Currently and in the future E3 will be used to verify savings and benefits. Alternative calculations may be used for some measures.

Proposed CEU Energy Efficiency Programs: for 2009-2010

Residential:

- The CFL mailing program will be sending all residential customers a package with 2 CFL lamps and energy saving information. The program is expected to cost $320,000 and should save 153 peak kilowatts, 1050 overall kilowatts, 819,200 kilowatt-hours per year, and 7,372,000 life cycle kilowatt-hours.
- Continue in-home and online energy audits.
- Select incentives for effective cooling products.
- Low-income residential refrigerator replacement will spend $320 per customer. Expected $32,000 annual will reduce peak demand by 24 kilowatts, save 155,680 kilowatt-hours annually, and 2,802,240 kilowatt-hours over the life of the refrigerator.
- Low-income customers with high air conditioning costs are be provided evaporative coolers. The $30,000 program should reduce peak demand by 120 kilowatts, save 142,000 kilowatt- hours per year, and 713,200 kilowatt-hours over the life of the coolers.

Commercial:

- Rebates for large customers is expected to cost $300,000 and will reduce peak demand from 100 to 300 kilowatts, saving almost 900,000 kilowatt-hours per year and have lifecycle savings of more than 8,000,000 kilowatt-hours.
- A special direct install program for food service business (restaurants and small markets) will help reduce their high demand and energy costs. Audits, lighting upgrades, refrigeration measures such as door seals and curtains as well as conditioning and cooler tune-ups will be performed at no cost to the customers.

Renewable Energy Development Plans:

- The Photovoltaic Rebate Program, which began in 2005, offers $4.00 per watt with a cap of $20,000 for residential and $50,000 for commercial.
- The one project completed was a 100 kilowatts commercial system that received $50,000 from Colton Electric.
- During 2008--2009, four residential customers installed a combined 20 kW of PV systems at a total cost of $198,725 CEU provided $80,369 in incentives toward those projects
- The 2009-2009 Fiscal year is expected to have a dramatic increase of PV installations and rebates especially in the commercial sector where higher electric rate, federal tax credits and CEU's generous rebates may contribute to more PV capacity installed than in all previous years combined.

- Other renewable energy expenditures in 2007-2008 were $185,000 for landfill gas electric and wind energy. Colton is investigating investment and purchases from geothermal, concentrating solar, low head hydroelectric, additional wind, and bio-fuel generation from wood-waste and sludge.

CEU Demand Reduction Programs:

Demand reducing TOU rates are available for customers with more than 200 kilowatts demand. Many customers have shifted peak energy use to reduce charges and one 5 MW customer will be curtailing 4900 kW between noon and six PM on summer weekdays. Other demand reduction technologies are being investigated such as wireless internet controlled thermostats and energy storage systems

COLTON ELECTRIC UTILITY (CEU)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Colton Electric Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	380	380	175,400	2,632,800	1,316	$ 43,135		$ 3,000	$ 46,135
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	218	218	1,164,800	10,483,200	5,446	$ 122,857		$ 1,000	$ 123,857
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	7	7	41,106	74,400	390	$ 93,000		$ 1,000	$ 94,000
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	18	18	34,200	513,000	561	$ 18,000		$ 500	$ 18,500
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	124	124	693,915	5,496,087	3,965	$ 56,514		$ 1,500	$ 58,014
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		746	746	2,109,421	19,199,487	746	$ 333,506		$ 7,000	$ 340,506
T&D	T&D									
Total										

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Colton Electric Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	234	234	107,945	1,619,172	1,030	$ 35,937		$ 3,000	$ 38,937
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	218	218	1,164,800	10,483,200	5,446	$ 106,240		$ 1,000	$ 107,240
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	8	8	49,469	890,438	474	$ 49,465		$ 1,000	$ 50,465
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	476	476	1,389,920	6,949,600	3,699	$ 306,610		$ 1,500	$ 308,110
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	25	25							
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		961	961	2,712,134	19,942,410	10,649	$ 498,252		$ 6,500	$ 504,752
T&D	T&D									
Total										

CORONA DEPARTMENT OF WATER AND POWER (CDWP)

- Electric utility established in 2001
- Approximately 99 percent of the electric consumption originates with either municipal or private (commercial and industrial) customers. Annual Maximum Load Demand: about 28 megawatts. Total served load (about 12 megawatts of UDC Bundled Load subsumed within Corona's service territory & about 16 megawatts of Direct Access Load). Note: In prior years, CDWP also served the Los Angeles Unified School District
- Annual energy use: 180 gigawatt-hours
- CDWP's self-defined mission is to "protect public health"

CDWP Energy Efficiency Program Highlights

In FY08/09, Corona customers received $31,745 in rebate incentives to increase energy efficiency for the community through a partnership between CDWP and the Metropolitan Water District (MWD). The High Efficiency Washer Rebate program reduced load by 7,200 kilowatt-hours per year through the use of Energy Star® appliances. CDWP collaborates with the Metropolitan Water District who now administers a regional rebate program effective July 1, 2008 with a projected budget in excess of $40,000.

Current Commercial Customer Programs:

- Solar Rebate Program: Maximum commercial rebate amount is $54,750 (25 kW)
- Energy Efficiency Technical Support Effort: CDWP offers technical support to facilitate installation and operation of air conditioning and lighting controls for commercial customers. CDWP provided three energy audits for three customers in FY 2009-2010 customers, with a total cost of $10,750.

Current Residential Customer Programs:

- Solar Rebate Program: Maximum residential rebate amount is $6,570 (3 kW)
- Residential High Efficiency Washer Rebate Program: Rebates are provided to customers who purchase and install Energy Star® clothes washing machines.
- Energy Efficiency Tune-Ups – Distribution of Compact Fluorescent Light Bulbs

Current Education Programs:

- Energy Usage and Demand Analysis Effort: Analyze commercial customer energy usage and demand in order to facilitate customer efficiency measures and demand-side management.

Proposed Corona Energy Efficiency Projects and Services: (2010-2011)

- At a minimum, the City of Corona plans to maintain existing efforts and programs at current levels with continued funding.
- City of Corona's energy efficiency programs are currently under development and improvement efforts are underway to augment and elaborate upon existing and new efforts and programs, which are expected to continue for the foreseeable future.

CDWP Demand Reduction Programs:

The City of Corona does not currently have a rate-based demand reduction program in place. However, CDWP operates multiple municipal facilities that can be interrupted for several hours per day, when needed.

CORONA DEPARTMENT OF WATER AND POWER (CDWP)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Corona Dept. of Water & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	3	3	7,006	70,064	40	$ 31,745		$ 8,000	$ 39,745
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		3	3	7,006	70,064	40	$ 31,745		$ 8,000	$ 39,745
T&D	T&D									
Total		3	3	7,006	70,064	40	$ 31,745		$ 8,000	$ 39,745

EE Program Portfolio TRC Test	**0.13**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Corona Dept. of Water & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	3	3	6,936	69,363	40	$ 31,428		$ 8,000	$ 39,428
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		3	3	6,936	69,363	40	$ 31,428		$ 8,000	$ 39,428
T&D	T&D									
Total		3	3	6,936	69,363	40	$ 31,428		$ 8,000	$ 39,428

EE Program Portfolio TRC Test	**0.13**

Excluding T&D

GLENDALE WATER AND POWER (GWP)

GLENDALE WATER & POWER UTILITY SUMMARY

GWP manages a service territory with 84,500 customer meters and an all time peak load of 336 MW in July 2007. GWP owns 249 MW of onsite, natural gas and landfill gas fired generation. GWP also has a 40 MW share of Magnolia Power Plant, a 20 MW share of Hoover Dam generation, 39 MW of Intermountain Power Project, 10 MW of Palo Verde Nuclear Generating Station, 20 MW of San Juan Unit 3, and approximately 80 MW of other power through power purchase agreements. Approximately 16 percent of GWP retail sales come from renewable resources, including wind, geothermal, and local landfill. Our goal is 20 percent to 23 percent renewable resources by 2017. GWP partially owns or has long term contracts on various transmission lines in the LADWP transmission grid, and has made significant investments in energy efficiency through its public benefit programs.

Glendale City AMI-SMART GRID Initiative

GWP has been selected by the U.S. Department of Energy for a $20 million smart grid grant. GWP was 1 of 33 public power utilities to be selected. The total value of the Glendale City AMI-Smart Grid Initiative is over $51 million for electric and $17 million for water. GWP began the project in August 2009. It will be completed over the next three years. The project will install a new AMI-MDMS system for all electric and water customers, increase the efficiency of GWP's distribution grid, and provide all customers with access to interval data, and new energy efficiency, load management, demand response, critical peak pricing, time of use, and dynamic rate programs.

Any successful move to the Smart Grid requires the right implementation, the right technologies and the support of regulators. This project has all three.

The Glendale City Council has approved a contract with Itron, Inc. to provide its industry leading OpenWay® AMI electric system, SaveSource AMI Water system, data collection engines, and Itron Enterprise Edition Meter Data Management System to support this initiative. Itron Inc. is a leader in developing AMI standards and security measures in cooperation with DOE and the National Institute for Standards and Technology (NIST). Additionally, GWP has assembled a team of AMI industry experts in providing energy efficiency, load management, demand response, new rate programs. Project management and technical support will be provided by KEMA, Inc., a recognized leader in Smart Grid Development. KEMA, Inc. has been supporting GWP's Smart Grid efforts since February 2008.

Customer participation and proper measurement and verification will be key to maximizing projected benefits for this initiative. GWP has engaged independent third parties to measure and report on the

effectiveness of its marketing and outreach efforts, and to evaluate the cost-effectiveness of the Glendale City AMI-Smart Grid initiative.

GWP is confident that the Glendale City AMI-Smart Grid Initiative will serve as a model for others to follow in California and across the nation. GWP is committed to sharing data and lessons learned with third parties, utilities, the CEC, and the DOE so that others benefit from DOE's investment.

PROGRESS TOWARD AB 2021 TARGETS

GWP has set a minimum energy efficiency target equal to approximately 1.0 percent of annual retail sales, and reported such to the CEC along with other public owned utilities in the June 2007 CMUA AB 2021 report. In 2007, our energy savings target was 11,362 MWH. As reported in the December 2006 CMUA SB 1037 report to the CEC, GWP achieved 8,510 MWH about 25% below our target. In 2008, our energy savings target was 11,586 MWH. We achieved 13,547 MWH approximately 17 percent above our goal. This year our target was 11,702 MWH. We achieved 11,803 MWH approximately 1 percent above our goal. Over the last three years, our total target was 34,650 MWH. We reached 33,860 MWH, missing our three year target by only 0.02%. We are in the process of updating our AB2021 goals. Our tentative target for 2010 is 11,819 MWH. We are on track to meet this goal.

DEMAND SIDE MANAGEMENT (DSM) HIGHLIGHTS

TOTAL DSM INVESTMENTS

- $3,474,555 invested in FY 2008-2009.
- Over $28 million invested since January 2000.

TOTAL DEMAND AND ENERGY SAVINGS – FY 2008-2009

- Incremental demand reductions of 6,255 KW.
- Incremental coincident peak demand reductions of 2,586 KW.
- Incremental net energy savings of 11,803 MWH.
- Incremental energy savings as a percent of GWP annual load reached 1.02%.
- Estimated cumulative demand reductions since January 2000 of over 26,000 KW.
- Estimated cumulative energy savings since January 2000 of over 82,000 MWH.

SUMMARY OF ACTIVE DSM PROGRAMS – FY 2008-2009

- Low-Income Customer DSM Programs
    - Cool Care provides long-term electric bill discounts for low-income customers encouraging the replacement and recycling of old, energy inefficient refrigerators. Program replaced and recycled 3,718 refrigerators with new ENERGY STAR models since July 2003.
    - Smart Home Peak Hogs is our CMUA award winning program that reduces peak demand while providing bill relief for primarily low-income customers by encouraging the replacement of energy inefficient HVAC units in apartments. Since July 2003, this

program has replaced 2,089 tons of energy inefficient Peak Hogs in Glendale apartments.

- General Residential DSM Programs

    - Compact Fluorescent Light (CFL) Giveaway Program provides free CFLs to GWP customers to promote energy efficient lighting through direct mail, at community events, and over the counter. This year we sent out one CFL to each GWP household. Total CFLs distributed this year were 72,752.
    - Smart Home Refrigerator Recycling targets secondary refrigerators for early retirement by offering free CFLs and a onetime discount off the electric bill. The retired refrigerators are recycled in an environmentally sensitive manner. Since 2006, 126 refrigerators have been recycled and 756 energy efficient light bulbs were distributed.
    - Smart Home Energy and Water Saving Surveys reduces customer energy consumption through comprehensive in-home energy and water saving surveys, education, and direct measures installations. Installed energy saving measures include compact fluorescent lights, hot water heater wraps, and blower door tests. Since July 2001, this program has provided over 10,572 in home audits and energy education sessions, installed over 41,300 CFLs, 3,900 water heater blankets, and conducted 3,769 blower door tests.
    - Smart Home Energy and Water Savings Rebates provides rebates to promote the early retirement of eligible energy and water saving appliances and devices. Over 31,180 rebates have been processed since July 2001.
    - Smart Home AC Tune-Ups and Duct Sealing Services, provided by Proctor Engineering, helps residential customers save energy by ensuring that their air conditioning and duct systems are functioning at their optimal level. Over 9,000 tons of HVAC have been tuned since February 2000.
    - Livingwise® provides energy and water conservation education materials for Glendale public and private school students. These materials support 10 hours of intensive energy education as well as installation of energy saving devices including compact florescent light bulbs. Over 11,660 students have participated in this program since July 2001.
    - Tree Power provides up to three free shade trees and arborist services to ensure that the trees are planted correctly. When properly sited and cared for, a healthy, mature shade tree helps provide shade that cools the home and helps reduce air conditioning use. This program has planted over 2,000 trees since July 2004.

- Small Business DSM Programs

    - Small Business Peak Hogs is modeled after the GWP's CMUA award winning residential program. It reduces peak demand and customer energy consumption, and provides bill relief for small business customers by providing incentives for small businesses and small business landlords to replace old, inefficient HVAC units.
    - Smart Business Energy Saving Upgrades is our CMUA award winning program that provides small business customers with comprehensive no-cost energy surveys,

customized written reports, energy education, and directly installs as much as $2,000 worth of cost-effective energy conservation measures. This program has conducted 3,100 energy audits and retrofits since July 2001.

- Smart Business AC Tune-Ups and Duct Sealing Services, provided by Proctor Engineering, helps small business customers save energy by ensuring that their air conditioning and duct systems are functioning at their optimal level. Over 6,340 tons of HVAC have been tuned since February 2000.

- Large Business DSM Programs

  - Business Energy Solutions (BES) provides incentives to complete pre-approved energy audits and retrofit projects. Incentives are limited to the lesser of 25% total project costs for retrofit projects, 100 percent of the above Title 24 remodeling and/or new construction investments, or $0.06 per kWh saved over the life of the installed measures. Audit incentives are limited to $0.065 per square foot. This program has supported 188 retrofit projects since January 1999.

- City Building Retrofits

  - Working with Glendale Public Works Department and GWP, this program would implement the energy and water savings retrofits outlined in the recently completed energy audits of 23 city buildings including the Community Services Building, Perkins, MSB, City Hall, GSA, the Libraries, the Fire Stations, and the Police Building. The retrofits will include the newest high efficiency T -8 lamps and ballasts, occupancy sensors, HVAC upgrades, retro-commissioning and other energy savings measures. This $1.8 million program would provide $1.5 million for direct installations, and up to $300,000 or 20% of installed value to support Public Works salaries directly related to the installations, with $1.2 million coming from EECBG and $600,000 coming from PBC.
  - Energy savings are estimated at 2.3 million kWh per year with estimated electric bill savings of just over $360,000 per year for 10 years or more. GWP and Public Works will work to finalize the scope of work to maximize cost-effectiveness based on energy savings.

TIME PERIOD FOR PROGRAM PERFORMANCE DATA

- Fiscal Year Ending June 30, 2009

LOAD MANAGEMENT PROGRAMS FOR FY 2009-2010

- Enter into an agreement with SCPPA and Ice Energy to develop the specific designs for the SCPPA utilities, and other agreements for the purchase, installation, and maintenance of smart grid enabled Ice Energy thermal storage systems, and the replacement of HVAC units on City Facilities. Ice Energy provides a unique small scale, packaged Thermal Energy Storage product called an Ice Bear. The Ice Bear reduces peak electrical demand by utilizing electric energy to produce ice at night during off-peak

hours and then use the ice for cooling during the day. The City has previously installed two Ice Bear units and has found them to work satisfactorily. Initially, the project will install 32 Ice Bear units on City Facilities. Once the initial City portion of the project is complete, GWP will expand the Ice Bear project to include the installation of 254 units on local small and medium sized business in Glendale. As an added benefit, GWP would use PBC funds and to the extent possible, U.S. Department of Energy, Energy Efficiency Conservation Block Grant (EECBG) funds to have Ice Energy replace 401 tons of aging, inefficient City HVAC and 29 furnace units at the same time they are installing the Ice Bear units thereby taking advantage of available preferred pricing and reduced installation costs. Replacing the HVAC units will save the City an estimated $82,000 in annual energy costs and $30,000 in annual maintenance fees for 15 years or more.

- Implement two demand response pilot programs through SCPPA and North American Power Partners (NAPP) to test the effectiveness of demand response in emergency and other situations as part of GWP's U.S. Department of Energy (DOE) supported Smart Grid initiative. SCPPA has a contract with NAPP to deliver such services for its members, and GWP included these programs in its application for DOE Smart Grid funding. NAPP was selected by SCPPA through a Request for Proposal (RFP) process to provide demand response services for its members. The two NAPP demand response programs would be offered over the next five years. The first program would be a price responsive customer directed program that would be a non-firm resource and economic-based demand response program that pays participating customers a market-based rate for demand response. The second program would be a reserves program where reserves would be available "on call" firm demand response resource program with relatively short customer notices and relatively short curtailment durations. These resources would be firm, fully dispatchable resources that are controlled by the utility or the customer but are typically automated.

MEASUREMENT AND VERIFICATION

- Over the next few months, Lincus plans on performing the Evaluation, Monitoring and Verification (EM&V) studies of GWP's selected energy efficiency programs. This independent evaluation entails randomly selecting a sample size of applications within those programs that meet 90%+/- 10% confidence level, verifying the installation of particular units, and measuring/monitoring those units to verify the demand and energy savings calculated by Glendale Water and Power. Measuring/monitoring the units can vary between an hour and a week depending on the measure. A report will be composed that presents the data obtained and gives recommendations to GWP on improving their energy efficiency programs and calculations.
- The existing EM&V Plan evaluating GWP's selected energy efficiency programs based on the kWh savings. This Plan describes the programs, not only in what they do, but how much energy and demand is saved, and costs expanded during the 2008/2009 fiscal year. The purpose of this EM&V study as required by AB2021 is to ensure that measures are installed as claimed by GWP

and to lend credibility to GWP's savings reports. In addition to meeting regulatory compliance requirements, EM&V studies are essential for a number of other reasons, namely: 1) to measure the effectiveness (e.g. Gross & Net Energy and Demand Savings, Benefit/Cost ratio, savings realization rate, market penetration etc.) of the existing program and 2) to educate the program implementer on ways to improve existing and future programs. In the months to come, with GWP's authorization to proceed, Lincus will develop this EM&V study and review it with the GWP's representatives prior to GWP filing the study with the California Energy Commission.

GLENDALE WATER AND POWER (GWP)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Glendale Water and Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	24	24	56,416	564,160	325	$ 19,083		$ 1,109	$ 20,193
HVAC	Res Cooling	610	350	850,189	17,389,462	11,081	$ 385,060	$ 184,540	$ 54,169	$ 623,769
Appliances	Res Dishwashers	6	5	20,005	260,065	142	$ 28,840		$ 488	$ 29,328
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	3,809	485	2,701,124	24,310,120	12,311		$ 348,930	$ 39,731	$ 388,661
Pool Pump	Res Pool Pump	17	4	25,350	253,500	149	$ 7,084		$ 527	$ 7,611
Refrigeration	Res Refrigeration	151	151	891,652	16,049,736	8,536	$ 423,122		$ 30,120	$ 453,241
HVAC	Res Shell	632	563	477,867	6,636,624	3,820	$ 255,398	$ 40,837	$ 13,708	$ 309,943
Water Heating	Res Water Heating	8	8	29,108	436,620	251		$ 5,703	$ 889	$ 6,592
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	314	314	1,397,075	24,784,040	14,281	$ 176,441	$ 58,932	$ 56,365	$ 291,738
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	670	670	3,848,524	40,443,139	22,476	$ 128,067	$ 743,292	$ 78,820	$ 950,179
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell	13	12	11,388	113,880	66	$ 1,955		$ 224	$ 2,179
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			1,494,456	4,483,368	2,270		$ 383,727	$ 7,396	$ 391,123
SubTotal		6,255	2,586	11,803,156	135,724,712	75,709	$ 1,425,049	$ 1,765,962	$ 283,545	$ 3,474,555
T&D	T&D									
Total		6,255	2,586	11,803,156	135,724,712	75,709	$ 1,425,049	$ 1,765,962	$ 283,545	$ 3,474,555

EE Program Portfolio TRC Test	**2.41**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Glendale Water and Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	24	24	56,416	564,160	325	$ 19,083		$ 1,455	$ 20,538
HVAC	Res Cooling	610	350	850,189	17,389,462	11,081	$ 385,060	$ 184,540	$ 44,843	$ 614,442
Appliances	Res Dishwashers	6	5	20,005	260,065	142	$ 28,840		$ 671	$ 29,510
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	3,809	485	2,701,124	24,310,120	12,311		$ 348,930	$ 62,690	$ 411,620
Pool Pump	Res Pool Pump	17	4	25,350	253,500	149	$ 7,084		$ 654	$ 7,737
Refrigeration	Res Refrigeration	151	151	891,652	16,049,736	8,536	$ 423,122		$ 41,388	$ 464,510
HVAC	Res Shell	632	563	477,867	6,636,624	3,820	$ 255,398	$ 40,837	$ 17,114	$ 313,349
Water Heating	Res Water Heating	8	8	29,108	436,620	251		$ 5,703	$ 1,126	$ 6,829
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	314	314	1,397,075	24,784,040	14,281	$ 176,441	$ 58,932	$ 63,912	$ 299,285
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	670	670	3,848,524	40,443,139	22,476	$ 128,067	$ 743,292	$ 104,293	$ 975,652
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell	13	12	11,388	113,880	66	$ 1,955		$ 294	$ 2,249
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			1,494,456	4,483,368	2,270		$ 383,727	$ 11,561	$ 395,289
SubTotal		6,255	2,586	11,803,156	135,724,712	75,709	$ 1,425,049	$ 1,765,962	$ 350,000	$ 3,541,010
T&D	T&D									
Total		6,255	2,586	11,803,156	135,724,712	75,709	$ 1,425,049	$ 1,765,962	$ 350,000	$ 3,541,010

EE Program Portfolio TRC Test	**2.32**

Excluding T&D

GRIDLEY MUNICIPAL UTILITY (GMU)

History and Load Data

The City of Gridley's electric utility was established in 1910. Currently in Gridley, the electric utility serves 2,760 customers, 2,299 which are residential (83 percent). The City of Gridley projects a growth rate of 5 percent for the next 5-10 years. Peak demand is 10.6 megawatts is usually experienced on a July or August afternoon. Annual energy use for GMU is 39.2 megawatt-hours

Overview of Gridley Energy Efficiency Programs

Gridley Municipal Utilities (GMU) manages a comprehensive energy efficiency incentive program for residential & commercial customers focusing on peak load reduction and energy conservation. For residential customers, rebates are offered for the installation of various energy efficiency measures. For commercial customers, rebates are available for upgraded lighting, HVAC equipment, and in cases where an analysis is performed rebates can be offered for additional equipment that reduces energy use and/or demand.

Residential Energy Efficiency Programs:

- Energy Efficiency Hotline: A toll free line with GMU personnel is available for our customers to answer questions and provide information on energy efficiency related matters.
- Energy Audits: On-site energy audits by GMU energy specialists are available to residential customers. Energy efficiency measures are recommended based on each audit and the GMU personnel follow up with additional visits to answer questions and make additional recommendations, if requested.
- Appliance Rebates: GMU provides rebates for the purchase of several EnergyStar® appliances
- Residential Heat Pump and Efficient Air Conditioning Rebates: GMU offers rebates for residential and small business customers who install high performance heat pumps or air-conditioners that exceed current state requirement.
- Residential Lighting and Ceiling Fan Rebates: GMU offers rebates to homeowners who install compact florescent lamps (CFLs) and/or ceiling fans to replace more energy intensive cooling options (AC).
- Weatherization Incentives: GMU provides financial incentives for homeowners who invest in weatherization measures.

Commercial/Industrial Energy Efficiency Programs:

- Energy Audits: On-site energy audits by GMU energy specialists are available to commercial customers. Energy efficiency measures are recommended based on each audit and the GMU personnel follow up with additional visits to answer questions and make additional recommendations.
- Custom Energy Efficiency Incentive Program: GMU financial incentives for commercial customers are based on individual audits and audit recommendations and are tailored to the individual customer needs based on the audit and the potential energy savings.
- Lighting retrofit: A commercial lighting retrofit program is offered to businesses in Gridley. There is a prevalence of T-12 lighting throughout the City and most high bay lighting uses high intensity discharge fixtures instead of more efficient florescent fixtures.

Performance Results for 2008-2009

Gridley's AB2021 Energy Reduction Target for FY07-FY09 was 91,700 kWh annually. In FY09, they achieved 77% of their annual goal, with a total net energy reduction of 70,385 kWh.

Gridley's AB2021 Demand Reduction Target for FY07-FY09 was 11.2 kW annually. In FY09, they surpassed their annual goal, with a total demand reduction of 18.8 kW.

One large commercial project contributed the bulk of kWh savings and demand savings in FY09. Sav-Mor Market in Gridley completed their refrigeration upgrade, which replaced a water-cooled cooling tower and associated refrigeration equipment with a new air-cooled unit. Savings were based on two components: no longer pumping 12,267,600 gallons per year for cooling the towers; and upgrading the refrigeration system (excluding condenser) - also referred to as refrigeration compressor upgrades. This project resulted in net annual kWh savings of 62,115 (88% of the program results) and net demand reduction of 10 kW (53% of the program results).

Two issues kept GMU from reaching its 2008-2009 AB2021 targets. The first was the Keep Your Cool program (see below) which was not completed until early July of 2009, making it ineligible to be reported in this report. The second was a delay by Gridley's largest customer (Rio-Pluma) in installing a significant lighting upgrade. The project was delayed due to a downturn in their business.

2009-2010 Forecast

Gridley participated in the Keep Your Cool (KYC) program implemented through ESG and Humitech in 2009 as a pilot for utilities in Northern California. The program offered commercial customers, typically small to mid-sized businesses, with free upgrades to their refrigeration equipment, including door gaskets, strip curtains, and auto door closers. The KYC program contributed highly cost-effective results for the utilities who participated. The pilot (Phase I) was implemented over several months; Gridley's customers were serviced in July 2009 so the results of KYC in their service territory will be reported in FY10. Even with a single commercial project contributing 88% of the FY09 kWh savings, Gridley is forecasted to exceed their AB2021 Energy Reduction Target by 14% in FY10 due to the KYC projects. The KYC program will contribute net savings of 92,449 kWh and 11.30 kW in FY10.

GMU Evaluation, Measurement and Verification for 2008/2009

Because its performance in 2007/2008 produced substantially less energy savings than its AB2021 target, Gridley did not conduct a study of its programs for that period and instead focused on working towards implementing programs that achieved the energy savings goals that it adopted in 2007. The process to hire a firm to perform an EM&V study for the 2008-2009 performance period is currently underway and is expected to be complete by early Spring of 2010.

Update to Annual Energy Savings Targets for 2011-2020

A recent assessment of energy savings potential in Gridley conducted by Summit Blue indicated that an appropriate 10 year goal (2011-2020) for their energy-efficiency programs would be 979 MWH. Taking into account current economic conditions and the demographics of the City, staff has decided to target 75 MWH per year over the next three years as a start towards that target.

GRIDLEY MUNICIPAL UTILITY (GMU)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Gridley Municipal Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers			242	2,424	1	$ 75		$ 482	$ 557
HVAC	Res Cooling	3	2	1,179	21,215	14	$ 1,163		$ 6,461	$ 7,624
Appliances	Res Dishwashers			66	858		$ 25		$ 174	$ 199
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration			859	15,458	8	$ 400		$ 3,078	$ 3,478
HVAC	Res Shell	3	3	2,921	62,847	35	$ 1,893		$ 14,393	$ 16,286
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	2	2	3,003	33,035	18		$ 2,179	$ 922	$ 3,101
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	10	10	62,115	931,728	491	$ 42,000		$ 23,666	$ 65,666
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		19	17	70,385	1,067,565	569	$ 45,556	$ 2,179	$ 49,175	$ 96,910
T&D	T&D									
Total		19	17	70,385	1,067,565	569	$ 45,556	$ 2,179	$ 49,175	$ 96,910

EE Program Portfolio TRC Test	**0.61**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Gridley Municipal Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers			250	2,497	1	$ 77		$ 94	$ 171
HVAC	Res Cooling	3	2	1,179	21,215	14	$ 1,163		$ 799	$ 1,961
Appliances	Res Dishwashers			68	884		$ 26		$ 33	$ 59
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration			885	15,922	9	$ 412		$ 600	$ 1,012
HVAC	Res Shell	3	3	2,921	62,847	35	$ 1,893		$ 2,367	$ 4,260
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	5	4	6,006	66,070	37		$ 4,359	$ 2,488	$ 6,847
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	15	15	93,173	1,397,592	737	$ 63,000		$ 52,630	$ 115,630
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		26	24	104,481	1,567,027	833	$ 66,571	$ 4,359	$ 59,010	$ 129,939
T&D	T&D									
Total		26	24	104,481	1,567,027	833	$ 66,571	$ 4,359	$ 59,010	$ 129,939

EE Program Portfolio TRC Test	**0.82**

Excluding T&D

CITY OF HEALDSBURG

History and Load Data

The City of Healdsburg serves 5,539 customers, of which 4,371 are residential. The City' projects a growth rate of less than 1 percent per year. It's all-time peak demand was 21.2 megawatts on July 2006. The 2008-2009 annual energy use was 77,045 megawatt-hours. The City's power content is as follows: Geothermal 43 percent, small hydro 1 percent, large hydro 22 percent, and nonrenewable 34 percent

City of Healdsburg Energy Efficiency Program Overview

Healdsburg manages a comprehensive energy efficiency incentive program for residential & commercial customers focusing on peak load reduction and energy conservation. For residential customers, rebates are offered for the installation of various energy efficiency measures. For commercial customers, rebates are available for upgraded lighting, HVAC equipment, and in cases where an analysis is performed rebates can be offered for additional equipment that reduces energy use and/or demand.

Residential Programs:

- Energy Efficiency Hotline: A toll free line is available for our customers to answer questions and provide information on energy efficiency related matters.
- Energy Audits: On-site energy audits by energy specialists are available to residential customers. Energy efficiency measures are recommended based on each audit and upon request, the customer is provided a written report summarizing findings and recommendations and/or additional visits to answer questions.
- Appliance Rebates: Healdsburg provides rebates for the purchase of several EnergyStar® appliances.
- Residential Heat Pump and Efficient Air Conditioning Rebates: Healdsburg offers rebates for residential and small business customers who install high performance heat pumps or air-conditioners that exceed current state requirements.
- Residential Lighting Rebates: Healdsburg offers rebates to homeowners who install compact fluorescent lamps (CFLs).
- Weatherization/Window Incentives: Healdsburg provides financial incentives for homeowners who invest in weatherization and window measures.

Commercial and Industrial Programs:

- Energy Audits and Rebates: This program offers complementary, on-site energy audits for both commercial and industrial customers. Energy efficiency recommendations and follow up visits support implementation of recommended energy efficiency measures. Rebates are available for energy efficiency upgrades identified in these audits.
- Commercial Lighting: This program engages local lighting and electrical contractors to promote and install energy efficient lighting upgrades using technical assistance and financial incentives available from Healdsburg.
- Keep Your Cool: This limited time offer provides a free, no obligation check of commercial coolers and refrigerators. The Bay Area Gasket Guy (BAGG) looks at the condition of door gaskets, strip curtains and door closers. If BAGG finds that the current door gaskets are in need of replacement, new gaskets will be manufactured and installed for each cooler/freezer with air leaks at no charge to the customer. This offer is supported and being paid for by the City of Healdsburg Electric Utility Energy Efficiency Program.

Public Facilities and Schools:

- Energy Audits: Complementary on-site energy audits, as requested, for all public facilities. Energy efficiency recommendations and audit follow up visits support implementation of recommended energy efficiency measures. Rebates are available for energy efficiency upgrades identified in these audits.

Additional Programs:

"Time-of-Use Rates" Program: The City of Healdsburg has implemented a "time-of-use-rate" program for both residential and commercial customers, enabling them to reduce their energy costs through the time management of their energy usage.
Residential "Energy Efficiency Outreach": The City of Healdsburg has implemented an energy outreach program for our Hispanic residential customers offering comprehensive energy efficiency information to improve energy efficiency and reduce energy use.

Performance Results for 2008-2009

Healdsburg's AB2021 Energy Reduction Target for FY07-FY09 was 198,400 kWh annually. In FY09, they exceeded their annual goal by 82%, with a total net energy reduction of 360,518 kWh.

Healdsburg's AB2021 Demand Reduction Target for FY07-FY09 was 22 kW annually. In FY09, they surpassed their annual goal, with a total demand reduction of 104.77 kW.

Healdsburg participated in the Keep Your Cool (KYC) program implemented in 2009 as a pilot for utilities in Northern California. The program offered commercial customers, typically small to mid-sized businesses, with free upgrades to their refrigeration equipment, including door gaskets, strip curtains, and auto door closers. The KYC program contributed highly cost-effective results for the utilities who participated. The pilot (Phase I) was implemented over several months; Healdsburg customers were

serviced in June and July 2009, the June projects contributed net savings of 84,394 kWh and 9.65 kW in FY09. They would have exceeded their energy reduction goal by 39% without the KYC projects that were completed in FY09.

2009-2010 Forecast

Healdsburg is forecasted to once again exceed their AB2021 Energy and Demand Reduction Targets due to the KYC projects. In fact, their net annual kWh forecast for FY10 is almost double their current annual goal. Between the completions of Phase I projects in July 2009, and their participation in Phase II (which occurred in Q4 2009), the KYC program will contribute net savings of 184,328 kWh and 21 kW in FY10. The positive impact of the KYC program on program cost effectiveness can also be seen in both the FY09 results (TRC 1.76) and the FY10 forecast (TRC 2.07).

Efforts are also coordinated with the City of Healdsburg Green City Committee in order to bring a community focus onto energy-efficiency. The Green City Committee's goal is to: "Provide leadership to implement community actions that promote environmentally-sound practices and expand public outreach to promote conservation and sustainability."

Healdsburg Evaluation, Measurement and Verification

For 2007-2008, Healdsburg did not undertake an EM&V study. The process to hire a firm to perform an EM&V study for the 2008 – 2009 performance period is currently underway and is expected to be completed by Spring of 2010. This report will assess program operations for the Keep your Cool program which provided the most significant savings.

Revision to Annual Energy Savings Targets for 2011-2020

A recent assessment of energy savings potential in Healdsburg conducted by Summit Blue indicated that an appropriate 10 year goal (2011-2020) for their energy-efficiency programs would be 5,396 MWH. Taking into account current economic conditions and the demographics of the City, staff has decided to target 420 MWH per year over the next three years as a start towards that target.

CITY OF HEALDSBURG

Time Period for Reporting Data: Fiscal year ending 6/30/2009

Healdsburg		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	2	2	5,818	58,176	32	$ 2,400		$ 2,355	$ 4,755
HVAC	Res Cooling	9	6	2,438	41,263	26	$ 3,213		$ 2,480	$ 5,692
Appliances	Res Dishwashers			792	10,296	6	$ 600		$ 425	$ 1,025
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	16	2	11,600	104,400	56	$ 1,106		$ 3,750	$ 4,856
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	1	1	7,766	139,781	76	$ 3,375		$ 5,695	$ 9,070
HVAC	Res Shell	6	6	5,524	89,889	51	$ 4,751		$ 4,015	$ 8,766
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	51	49	166,296	2,523,509	1,399	$ 68,400		$ 15,752	$ 84,152
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	18	18	160,285	641,139	338		$ 7,777	$ 2,967	$ 10,744
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		105	86	360,518	3,608,453	1,984	$ 83,845	$ 7,777	$ 37,437	$ 129,058
T&D	T&D									
Total		105	86	360,518	3,608,453	1,984	$ 83,845	$ 7,777	$ 37,437	$ 129,058

EE Program Portfolio TRC Test	**1.76**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Healdsburg		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	3	3	6,108	61,085	34	$ 2,520		$ 629	$ 3,149
HVAC	Res Cooling	9	6	2,511	42,501	27	$ 3,309		$ 437	$ 3,746
Appliances	Res Dishwashers			792	10,296	6	$ 600		$ 106	$ 706
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	12	2	8,700	78,300	42	$ 830		$ 806	$ 1,635
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	1	1	8,154	146,770	80	$ 3,544		$ 1,511	$ 5,054
HVAC	Res Shell	6	6	5,690	92,585	52	$ 4,894		$ 953	$ 5,846
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	54	52	174,611	2,649,684	1,469	$ 71,820		$ 27,273	$ 99,093
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	21	21	184,328	737,310	389		$ 8,943	$ 7,589	$ 16,532
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			29	576		$ 1,200		$ 6	$ 1,206
SubTotal		107	92	390,923	3,819,107	2,099	$ 88,716	$ 8,943	$ 39,309	$ 136,968
T&D	T&D									
Total		107	92	390,923	3,819,107	2,099	$ 88,716	$ 8,943	$ 39,309	$ 136,968

EE Program Portfolio TRC Test	**2.07**

Excluding T&D

CITY OF HERCULES MUNICIPAL UTILITY (HMU)

The Hercules Municipal Utility ("HMU") was created in 2002 to provide safe, reliable and cost-effective electric service to retail consumers in Hercules that are located in and around new development areas. Hercules Municipal Utility serves in a territory where all buildings are less than 10 years old. The utility has added more rebates in response to customer inquiries. Most customers inquire and request appliance rebates, lighting rebates and solar rebates. There has been no demand for other programs to date.

Hercules Municipal Utility encourages residential customers to increase the efficiency of their homes by offering incentives for the following energy efficiency measures:

- High Performance Windows
- Increased Insulation
- Sunscreens
- EnergyStar® Refrigerators, Clothes Washers and Dishwashers

Hercules Municipal also offers residential customers free compact fluorescent lights.

For business customers HMU offers rebates for:

INTERIOR FIXTURES REPLACEMENTS

- Linear to T8 or T5 or High Output (HO) T5 fixtures
- T8 or T5 To electronic ballast
- Compact fluorescent fixtures
- Interior pulse start metal halide fixtures
- Occupancy sensors
- De-lamping

EXTERIOR FIXTURES

- Pulse-start metal halide fixtures

OTHER CONSERVATION

- The goal of the HMU is to encourage energy conservation. In order to further energy conservation, the HMU will provide a rebate of 12 cents per kWh for energy savings in the first year up to a maximum of 30 percent of installed cost for retrofits of existing facilities with energy saving devices not covered under specific programs.

Hercules Municipal Utility also provides solar rebates to both residential and business customers.

CITY OF HERCULES MUNICIPAL UTILITY (HMU)

Time Period for Reporting Data*:* Fiscal Year ending 6/30/2009

Hercules Municipal Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers			154	1,997	1	$ 450			$ 450
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	13	2	9,360	84,240	45	$ 600			$ 600
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration			139	2,506	1	$ 200			$ 200
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		13	2	9,653	88,742	47	$ 1,250			$ 1,250
T&D	T&D									
Total		13	2	9,653	88,742	47	$ 1,250			$ 1,250

EE Program Portfolio TRC Test	**2.42**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Hercules Municipal Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers			154	1,997	1	$ 450			$ 450
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	13	2	9,360	84,240	45	$ 600			$ 600
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration			139	2,506	1	$ 200			$ 200
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		13	2	9,653	88,742	47	$ 1,250			$ 1,250
T&D	T&D									
Total		13	2	9,653	88,742	47	$ 1,250			$ 1,250

EE Program Portfolio TRC Test	**2.42**

Excluding T&D

CITY OF INDUSTRY

- The City of Industry established a municipal utility, Industry Public Utility Commission (IPUC), in 2001. IPUC began delivering electricity to retail customers in May 2002 and currently serves commercial and industrial customers through its electric distribution system;
- IPUC developed and installed a 2 MW combined heat and power project in 2002 that supplies a large hotel with electricity and hot water;
- Peak 2009 Customer Demand: 7.5 megawatt
- Annual 2009 Energy Use: 35 gigawatt-hours
- IPUC has supplied electric power to its retail distribution customers at rates that on average have been 25% lower than Southern California Edison's (SCE)
- Mission: IPUC strives to provide reliable and cost effective electric power to help the competitiveness of local businesses.

- **City of Industry Program Highlights**
- Pacific Palms Combined Heat and Power Project: The Project currently provides IPUC with 2 MW of local area capacity resources and supplies heat and power to the Pacific Palms resort. The Project uses both landfill and pipeline gas and continues to explore maximizing landfill gas from the nearby landfill to reduce methane emissions.
- Amonix Concentrated Solar: IPUC is engineering structural design to raise the elevation of tracking concentrated solar photovoltaic (CPV) systems and enable power generation in parking areas (dual land use). Installation of 35 kW Amonix CPV system comprised of 5 MegaModules™, along with the required drive, hydraulic, tracking control and AC/DC control subsystems is planned in 2009 at a location within the City.

Proposed Renewable Projects and Services:

- Ground Mount Solar: IPUC is developing a ground mounted 3-5 MW photovoltaic power generating facility which would be the largest installation in the LA Basin.
- Rooftop Solar: IPUC is developing a 5 MW rooftop photovoltaic power (PV) generating facility on buildings served by the utility.
- Pumped Storage: IPUC has initiated preliminary development efforts for a 50 MW pumped storage electric project located in the LA basin.

Demand Reduction Programs:

IPUC does not currently have any demand reduction management programs in place.

ISLAND ENERGY

PITTSBURG POWER COMPANY/ISLAND ENERGY YEAR 2009 ENERGY EFFICIENCY PROGRAM REPORT

- Doing business as Island Energy, the Pittsburg Power Company owns, operates and manages the electrical and gas system facilities located at Mare Island in the City of Vallejo, California.
- Island Energy supplies all retail electric and gas services to residential, commercial and industrial customers within its service territory.
- Island Energy serves 85 commercial and 261 residential customers with 439 electric and 322 gas meters.
- Customers on Mare Island are served through our looped 12-kilovolt underground facilities with a peak demand of 4.5 megawatts.
- Commercial and industrial electric loads consist of approximately 92 percent of the total electrical load and approximately 70 percent of the gas load.
- Hydroelectricity accounts for more than 40 percent of Island Energy's retail electric sales.
- Island Energy's Public Benefits Program funds all Energy Efficiency Programs, Low Income Assistance Program, Medical Support Baseline Program and Solar Incentive Program.

Island Energy Energy Efficiency Program Highlights

Electrical Substation Upgrade: Island Energy has committed $3,000,000 to upgrade its main electrical substation and backbone distribution system to improve system efficiency and to accommodate future developments. The project consists of three phases. The first phase involved replacing a 60-year-old transformer with a previously idle transformer which is newer, more efficient, and reliable. A new SF6 circuit breaker was installed to replace an old oil circuit breaker. Island Energy is beginning the second phase of installing the second 120 kV SF6 Circuit breaker at the main substation. This multiple-phased project will be completed in the next 1-2 years, subject to the progress of development on Mare Island.

Mare Island Lighting: Island Energy has worked closely with the City of Vallejo to promote the installation of energy efficient lighting throughout Mare Island. The plan has been implemented in all new residential projects. Island Energy is also working with the master developer on Mare Island, Lennar Mare Island, to retrofit street lights with LED light bulbs on the Mare Island causeway bridge.

Commercial Energy Efficiency Programs: Island Energy's Commercial Energy Efficiency Programs are designed to provide rebates for designated energy conservation measures to commercial customers. Based on studies of existing businesses and load profile on the island, commercial energy efficiency programs are developed to improve the energy efficiency of existing customer equipment and to maximize energy savings on the island.

- Energy Efficiency Advisory Services: Island Energy teams up with energy solution companies to provide free feasibility analysis of energy conservation measures upon a commercial customer's request. Customers who wish to pursue recommended measures will commission an energy solution company to produce an investment grade energy audit at the customer's expense. Island Energy offers rebates to cover up to 30% of the cost of producing the audit.
- Commercial Lighting Fixture: Island Energy offers rebates up to $10,000 for installation of energy efficient lighting fixtures and lamps. Qualified fixtures include interior linear fluorescent fixtures, compact fluorescent fixtures, interior & exterior pulse-start metal halide fixtures and interior induction fixtures. Island Energy also offers rebate for installation of linear fluorescent lamps with electronic ballasts and de-laming of un-efficient lamps/ballast and removal of unused lamp holders from existing fixtures.
- Motors & Process Improvement: Island Energy offers rebates up to $15,000 for installation of new, NEMA premium efficiency motors ranging in size of 5 to 200 hp. Commercial customers can either replace their old motors with a new motor or add a new motor to their facilities. The rebate for this program is $0.07/kWh of the first year's energy savings based on the investment grade energy audit.
- Compressed Air System: Island Energy offers commercial customers rebates up to $35,000 for improving compressed air systems by installing a new system or by redesigning and retrofitting an existing system. So far, this program is the most successful and effective energy conservation program implemented on Mare Island. It has demonstrated significant energy savings in the industrial/commercial sector. The rebate for this program is $0.07/kWh of the first year's energy savings based on the investment grade energy audit.

Residential Energy Efficiency Programs: Residential energy efficiency programs have been a continuous effort by Island Energy. The programs are funded by the Public Benefits Fund which is incorporated into monthly bills based on energy usage.

Energy Education: Island Energy educates its customers on energy saving tips, sources of energy and new technologies for renewable energy through its website and newsletters. Energy-related magazines are available at Island Energy's office.

- Home Energy Audit Service: On-site free Energy Advisory service is available upon resident's request. Trained electrical and gas technicians can provide help by pointing out what areas are not energy efficient in residential homes and offer specific strategies to help residents to reduce their energy bills.
- Residential Retail Lighting: 2009 was the third year in which Island Energy provided free energy efficient light bulbs to its residential customers. Island Energy is committed to providing up to five CFL light bulbs per year to each home on the island. Coupons for the CFL light bulbs can be redeemed in a local lumber yard store (this program also has the benefit of attracting additional foot traffic to a local business). Coupons for two extra light bulbs will be given to residential customers if they register themselves with Island Energy's website to learn more about Island Energy's energy efficiency program.

- Appliance Efficiency Program: Island Energy offers residential customers rebates for installation of Energy Star-rated appliances, including dishwashers, clothes washers, refrigerators and air conditioners. This has been the most popular program in the residential sector its inception in 2008.
- Solar Incentive Program: Island Energy provides rebates of $2.80 per installed watt towards the purchase and installation of new solar energy systems by residential customers as an encouragement to use renewable energy.

Proposed Energy Efficiency Programs and Services (2010-2011):

- Customer-Directed Program: Provide funding to allow commercial and industrial electric customers to plan and develop their own energy efficiency programs in any of the public interest categories.

Island Energy Demand Reduction Programs:

Island Energy does not have demand reduction programs at this point. As load grows and matures, the utility anticipates evaluating such programs. The customer databases described above will be used to forecast load as well as explore energy management programs.

ISLAND ENERGY

Time Period for Reporting Data*:* Calendar Year ending 12/31/2009

Island Energy		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	2	2	794	9,523	5	$ 600		$ 539	$ 1,139
HVAC	Res Cooling									
Appliances	Res Dishwashers			94	1,030	1	$ 150		$ 58	$ 208
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting		1	350	1,748	1	$ 57		$ 482	$ 539
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration			967	13,541	7	$ 150		$ 733	$ 883
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive	111	111	446,756	8,935,120	4,752	$ 35,000		$ 2,175	$ 37,175
Other	Other									
SubTotal		114	114	448,960	8,960,962	4,766	$ 35,957		$ 3,987	$ 39,944
T&D	T&D									
Total		114	114	448,960	8,960,962	4,766	$ 35,957		$ 3,987	$ 39,944

EE Program Portfolio TRC Test	**7.42**

Excluding T&D

Time Period for Forecast Data: Calendar Year ending 12/31/2010

Island Energy		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	2	2	794	9,523	5	$ 600		$ 10	$ 610
HVAC	Res Cooling									
Appliances	Res Dishwashers			94	1,030	1	$ 150		$ 1	$ 151
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting		1	350	1,748	1	$ 57		$ 2	$ 59
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration			967	13,541	7	$ 150		$ 14	$ 164
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive	111	111	446,756	8,935,120	4,752	$ 35,000		$ 9,484	$ 44,484
Other	Other									
SubTotal		114	114	448,960	8,960,962	4,766	$ 35,957		$ 9,512	$ 45,469
T&D	T&D									
Total		114	114	448,960	8,960,962	4,766	$ 35,957		$ 9,512	$ 45,469

EE Program Portfolio TRC Test	**7.11**

Excluding T&D

IMPERIAL IRRIGATION DISTRICT (IID)

- Established in 1936
- IID serves 145,916 customers
- Peak demand: 993 megawatts, July 21, 2006
- Annual energy sales are 3,316 gigawatt-hours in 2009

IID's Energy Efficiency Program Highlights

Total program expenditures of $1,918,650 in calendar year 2009 will result in savings of more than 11,284,982 kilowatt-hours annually. These investments in efficiency will also reduce peak purchases by 3,025 kilowatts. The IID service area, Imperial County and the Coachella Valley in Riverside County, has been especially hard hit by the current economic recession. Historically high unemployment rates have climbed to, at times in some of our cities, the highest in the nation. This economic recession has resulted in significantly reduced program impacts in 2009 due to reduced customer investment in energy efficiency measures.

IID's Energy Efficiency Program Objectives:

- Provide a positive impact on utility cost by stabilizing energy consumption and reducing purchases of expensive peak power.
- Insure the program portfolio is cost effective thereby relieving some of the upward pressure on rates.
- Assist customers by providing an opportunity to take charge of their energy utilization and by doing so, reduce their electricity cost.
- Provide customers the opportunity to improve the environment by conserving energy and/or acquiring renewable energy.
- Provide income qualified residential customers with rate assistance and positively impact their families by providing energy efficiency measures that reduce their dependency on subsidies.
- Provide all customers with the opportunity to participate in renewable energy (specifically photovoltaic) generation by providing attractive, cost-effective options.
- Increase the awareness of energy efficiency and utilization through effective promotion of programs and energy issues, and provide a forum for customer adoption of energy effective habits through energy education.

Current Commercial Customer Programs:

- IID's Energy Conservation Services: No cost energy audits, educational workshops, and a number of other services including rebate program administration.
- Commercial AC Maintenance Program: The Quality AC Maintenance Program has been expanded to include an early retirement component. The program delivers comprehensive HVAC maintenance and optimum operational efficiency to commercial customer's equipment.
- Energy Rewards Rebate Program: Rebates offered to commercial customers that purchase qualifying energy efficient products including lighting products, motors, HVAC equipment, and Energy Star qualified thermostats.
- Commercial Demand-Side Management Program: Offers energy analysis of large customer facilities to identify cost-effective measures which reduce peak load and energy use. This program includes performance based incentives for lighting retrofits, high efficiency HVAC, chillers, motors, VFDs, air compressors, and ice storage.
- Pumping Efficiency Program: The IID Pumping Efficiency Program offers financial incentives for pump testing and recommended repairs. The target markets for this program are irrigation pumping, golf courses, and municipal systems. Government Energy Manager (GEM): This program provides municipal governments an energy manager from IID's staff. This energy manager reports to the city manager and augments the city's staff with energy professional. The energy manager coordinates energy matters for the city, identifies energy efficiency opportunities, facilitates project implementation, and insures new construction occurring within the city addresses energy efficiency.
    - Schools/Education Program: In 2008, IID expanded the GEM program to include school districts. Partnering with one of the largest school districts in the IID service area, IID has conducted energy audits of all district schools in the area and initiated the Power Pledge program with the students and individual schools. In 2009, this school district completed construction of a new middle school and high school, both qualifying for IID new construction energy efficient design incentives.
    - Power Pledge Program: IID has implemented the Power Pledge program, which allows city residents and/or school students to pledge to reduce their energy consumption by 10% and then provides them with access to web based energy consumption tracking software to help them validate their efforts. The Power Pledge Program provides a more interactive environment for customers and provides an opportunity for young people to engage in energy efficiency infotainment.

Current Residential Customer Programs:

- IID's Inspector Energy Inspector Energy provides no cost audits of residential homes and provides homeowners with incentive proposals and information concerning IID programs. In addition, Inspector Energy provides educational workshops and a number of other services including rebate program administration.

- Energy Star® Appliance Rebate Program**:** Rebates offered to residential customers that purchase energy efficient appliances such as pool pumps with VFD and Energy Star® labeled refrigerators and room air conditioners,
- California Green Builder: IID has partnered with the Building Industry Association to deliver the California Green Builder (CGB) throughout IID's service territory. CGB provides incentives to builders to provide environmentally friendly construction. IID provides builder incentives for exceeding Title 24 by more than 15%, coordination with municipal entities through the GEM program, and promotional assistance for builders. To date, one builder has signed on to the program and five governmental entities have passed resolutions supporting CGB. This initiative has been hampered by the turn down in the building industry.
- Residential HVAC Maintenance Program: The Quality AC Maintenance Program delivers comprehensive HVAC maintenance and optimum operational efficiency, air flow and refrigerant charge, to residential customer's equipment.
- Residential HVAC Duct Testing and Sealing: The Quality AC Maintenance Program also delivers comprehensive duct testing and sealing services.
- Residential High Efficient HVAC Rebate Programs: Rebates are offered to customers installing energy efficient air conditioners and heat pumps. Program is being promoted in conjunction with Energy Star®, and is available for residential customers, replacement, new construction, and early retirement.
- Emergency Energy Assistance Program: Qualified low-income customers can receive financial assistance to avoid disconnection of their electric service due to non-payment.
- Residential Energy Assistance Program (REAP): Qualified low-income residents receive up to a 30 percent discount on their electric rate.
- Low-Income Weatherization Program: Qualifying low-income customers receive weatherization services to help minimize the effects of weather on household energy consumption. IID has partnered with SoCalGas Company to deliver weatherization services to income qualified customers.

Photovoltaic Program

- Photovoltaic Rebate Program: IID offers rebates to residential and commercial customers that install qualifying photovoltaic generation systems. In 2009, IID provided incentives for 99 PV systems that installed 1,550.51 KW. IID incentives totaled $ 3,969,856 in 2009.

Proposed IID Energy Efficiency Programs and Services: **(2010)**

Existing Programs:

- IID's Board of Directors adopted energy efficiency and demand reduction targets through 2017. The target for 2010 is 45,067 MWh.
- IID Energy will continue to use Inspector Energy for education and promotion within schools as well as promote the Power Pledge. This effort will incorporate CFL campaigns and use energy wisely promotion.

- IID Energy has expanded the residential and small commercial Quality AC Maintenance Program to include multiple verification service providers. New initiatives include increased service options for participant contractors and customers. Expected benefits include streamlined administrative processes, an instant rebate for customers via the contractors invoice, and identification and early replacement of old, inefficient air conditioning systems.

Photovoltaic Program

- Through February 1, 2010; a total of 42 applications have been received for a capacity of 2,476 KW and over $6 million in incentives.

New Programs:

- IID Energy is proceeding with implementation of a small business combined Thermal Energy Storage/Time of Use rate program.
- IID will develop and implement a large commercial lighting retrofit program in 2010 that targets large retail and office segments and will be contractor driven.
- IID has included energy efficient pool pumps to our residential appliance rebate program offering to address the 8-10k pools in the IID service area.
- IID will expand the Government Energy Manager program to include working with cities and regional government associations, such as the Coachella Valley Association of Governments, to provide demand-side management planning assistance and to incorporate aggressive outreach to residences and businesses in their communities. Outreach efforts include neighborhood energy efficiency workshops, joint facility project improvements, and more focused school events.
- IID and Southern California Gas Company are engaged in a joint effort to expand our low-income weatherization services. This arrangement is a model for other POU/IOU weatherization partnerships.

Imperial Irrigation District's 50 NegaWatt (NW) Plant

Imperial Irrigation District's (IID) DSM and Supply and Trading (S&T) groups are working together on a plan to "construct" a 50 NW plant over the next five years. These groups are pooling their resources to provide more vibrant and aggressive energy efficiency and renewable energy programs for IID's customers. This includes pooling S&T resource procurement funds together with DSM funds to increase and expand customer incentives. In this way, S&T will buy reduced load instead of acquiring energy through purchases or construction.

This is a sample of actions being considered for the initiative:

- Replacement of 6,000 old, inefficient residential central air conditioning systems.
- Retrofitting commercial lighting systems to save over 8 MW.
- Introducing and expanding an aggressive pumping program for irrigation systems and the over 8,000 residential swimming pools within the District to save over 5 MW.

- Enhancing the existing AC diagnostic and repair program to keep thousands of residential and business air conditioning systems in their most energy efficient operating condition.
- Adding Thermal Energy Storage (TES) systems to thousands of small businesses to shift load off-peak.
- Implementing a residential and business demand response program to provide over 50 MW of controlled load over the next three years.

IID is in the process of contracting with Navigant Consulting to conduct Measurement and Verification of IID energy efficiency programs.

IMPERIAL IRRIGATION DISTRICT (IID)

Time Period for Reporting Data: Calendar Year ending 12/31/2009

Imperial Irrigation District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	1,301	1,356	4,897,107	57,416,906	36,608	$ 564,965		$ 387,400	$ 952,365
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics	1	1	8,772	78,948	45	$ 17,340		$ 345	$ 17,685
HVAC	Res Heating									
Lighting	Res Lighting	149	19	106,043	954,389	485	$ 852	$ 7,323	$ 3,453	$ 11,628
Pool Pump	Res Pool Pump	59	33	547,630	5,476,304	3,225	$ 61,539		$ 25,712	$ 87,251
Refrigeration	Res Refrigeration	31	31	99,900	1,633,880	878	$ 129,854		$ 7,084	$ 136,938
HVAC	Res Shell	5	5	4,035	80,704	46	$ 388		$ 394	$ 782
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	1,122	1,126	3,690,276	37,181,370	21,452	$ 202,965		$ 181,511	$ 384,476
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	23	21	79,486	853,117	474	$ 15,120		$ 3,758	$ 18,878
Process	Non-Res Motors	2	2	11,802	177,024	93	$ 350		$ 704	$ 1,054
Process	Non-Res Pumps	48	48	374,777	3,747,768	2,209	$ 37,554		$ 18,967	$ 56,521
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other	383	383	1,465,114	20,616,352	11,915	$ 146,511		$ 104,561	$ 251,072
SubTotal		3,124	3,025	11,284,942	128,216,762	77,431	$ 1,177,438	$ 7,323	$ 733,889	$ 1,918,650
T&D	T&D									
Total		3,124	3,025	11,284,942	128,216,762	77,431	$ 1,177,438	$ 7,323	$ 733,889	$ 1,918,650

EE Program Portfolio TRC Test	**5.60**

Excluding T&D

Time Period for Forecast Data: Calendar Year ending 12/31/2010

Imperial Irrigation District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	2,276	2,373	8,567,486	100,450,844	64,046	$ 988,406		$ 677,756	$ 1,666,162
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics	2	2	15,347	138,119	80	$ 30,336		$ 603	$ 30,939
HVAC	Res Heating									
Lighting	Res Lighting	260	33	185,523	1,669,703	848	$ 1,491	$ 12,812	$ 6,041	$ 20,344
Pool Pump	Res Pool Pump	103	58	958,079	9,580,791	5,641	$ 107,662		$ 44,983	$ 152,646
Refrigeration	Res Refrigeration	55	55	174,775	2,858,472	1,536	$ 227,179		$ 12,394	$ 239,573
HVAC	Res Shell	8	8	7,060	141,192	81	$ 679		$ 689	$ 1,368
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	1,962	1,969	6,456,136	65,048,785	37,531	$ 355,087		$ 317,554	$ 672,641
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	39	37	139,061	1,492,527	829	$ 26,452		$ 6,575	$ 33,027
Process	Non-Res Motors	4	3	20,647	309,703	163	$ 612		$ 1,231	$ 1,843
Process	Non-Res Pumps	84	84	655,672	6,556,718	3,864	$ 65,701		$ 33,183	$ 98,884
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other	670	670	2,563,215	36,068,296	20,846	$ 256,321		$ 182,930	$ 439,251
SubTotal		5,465	5,292	19,743,000	224,315,150	135,466	$ 2,059,927	$ 12,812	$ 1,283,938	$ 3,356,677
T&D	T&D									
Total		5,465	5,292	19,743,000	224,315,150	135,466	$ 2,059,927	$ 12,812	$ 1,283,938	$ 3,356,677

EE Program Portfolio TRC Test	**5.60**

Excluding T&D

LASSEN MUNICIPAL UTILITY DISTRICT (LMUD)

History and Load Data

Lassen Municipal Utility District (LMUD) was established in 1988. It serves 12,500 customers. Fifty percent of energy sales are residential, with the remaining 50 percent primarily commercial with a few agricultural and industrial customers. The median residential income in Lassen is at or below the poverty level. There is little or no difference load demands for LMUD between winter and summer. It's annual energy use is 132 gigawatt-hours. It's annual power content is as follows: 2 percent geothermal, 30 percent hydro, <1 percent biomass/waste, 2 percent wind, <1 percent solar, 66 percent nonrenewable. LMUD's mission is to provide reliable, quality power to our community at the best possible price. LMUD works closely with all of the other local agencies to promote planned economic growth in our service area.

Overview of LMUD Efficiency Programs

LMUD manages a comprehensive energy efficiency incentive program for residential & commercial customers focusing on peak load reduction and energy conservation. For residential customers, rebates are offered for the installation of various energy efficiency measures. For commercial customers, rebates are available for upgraded lighting, HVAC equipment, and in cases where an analysis is performed rebates can be offered for additional equipment that reduces energy use and/or demand.

Current Programs/Services:

- Residential Rebate Program": provides rebate credits to customers who purchase and install EnergyStar® appliances and Marathon electric water heaters. LMUD also provides a residential lighting program. Rebates are offered for replacing incandescent bulbs with CFL's along with a variety of other lighting incentives.
- Custom Energy Projects: LMUD offers customized rebate programs to larger customers who have special projects that do not fit into existing rebate categories.
- "Smart*Built*" "SmartBuilt Retro": SmartBuilt targets new construction, as well as, remodeled homes to encourage homeowners and contractors to install energy saving measures such as low-e windows, upgraded insulation, energy efficient appliances and high SEER heating and cooling units.
- Energy Audits: Commercial customers may request an onsite energy audit, provided free of charge by LMUD.
- "Smart*Light*": Smart*Light* was introduced in 2008 and is LMUD's commercial lighting retrofit program. The program offers commercial customers rebates for replacing inefficient lighting

with new technology, such as removing existing T-12 fluorescent bulbs and replacing them with T-8s.

- **"**Community Projects" Program: Local non-profit entities submit projects based on the four guidelines of AB 1890. Qualifying projects are eligible for financial incentives equal to 50 percent of the project expenses (with a limit of $25,000).
- Energy Conservation Assistance Program "ECAP": ECAP is LMUD's low-income rate assistance program. The program is income based and allows between a 50% and 20% discount on customers first 1,000 kWh. The program also works with local service agencies to provide energy conservation classes to participating customers.
- Consumer Education: LMUD strives to reach each of our customers to educate them and help them reduce their energy consumption. The LMUD web site and "*Ruralite*" magazine offer current energy conservation tips and advice on how to implement energy conservation measures. Through the website and the *Ruralite* magazine, customers are encouraged to call our efficiency experts for help to determine their energy usage and identify appropriate conservation measures.

Performance Results for 2008-2009

LMUDs energy reduction target for 2008-2009 was 250,000 kWh. They exceeded their annual goal by 91%, with a total net energy reduction of 478,138 kWh.

Lassen participated in the Keep Your Cool (KYC) program implemented in 2009 as a pilot for utilities in Northern California. The program offered commercial customers, typically small to mid-sized businesses, with free upgrades to their refrigeration equipment, including door gaskets, strip curtains, and auto door closers. The KYC program contributed highly cost-effective results for the utilities who participated. The pilot (Phase I) was implemented over several months; Lassen's customers were serviced in June and July 2009, the June projects contributed net savings of 241,108 kWh in FY09.

2009-2010 Forecast

Lassen is forecasted to once again exceed their Energy Reduction Target at 312,708 kWh.

LMUD Evaluation, Measurement and Verification

For 2007-2008, LMUD did not undertake an EM&V study. The process to hire a firm to perform an EM&V study for the 2008 – 2009 performance period is currently underway and is expected to be completed by Spring of 2010. This report will assess program operations for the Keep your Cool program which provided the most significant savings.

Revision to Annual Energy Savings Targets for 2011- 2020

A recent assessment of energy savings potential for LMUD conducted by Summit Blue indicated that an appropriate 10 year goal (2011-2020) for their energy-efficiency programs would be 7,767 MWH. Taking into account current economic conditions and the demographics of the City, staff has decided to target 375 MWH per year over the next three years as a start towards that target

LASSEN MUNICIPAL UTILITY DISTRICT (LMUD)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Lassen Municipal Utility District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	4	4	9,938	99,384	55	$ 1,435		$ 1,442	$ 2,877
HVAC	Res Cooling	23	17	4,193	75,469	48	$ 3,375		$ 1,654	$ 5,029
Appliances	Res Dishwashers	1		1,716	22,308	12	$ 910		$ 330	$ 1,240
Consumer Electronics	Res Electronics									
HVAC	Res Heating	6		31,451	624,330	314	$ 65,838		$ 7,904	$ 73,742
Lighting	Res Lighting	1		674	6,062	3	$ 100		$ 77	$ 177
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	1	1	7,720	138,967	75	$ 2,300		$ 2,023	$ 4,323
HVAC	Res Shell	18	18	35,047	700,946	395	$ 27,503		$ 11,408	$ 38,911
Water Heating	Res Water Heating			1,211	18,168	10	$ 600		$ 245	$ 845
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	5	5	1,032	18,574	12	$ 4,300		$ 211	$ 4,511
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	16	16	144,048	2,269,128	1,256	$ 29,050		$ 18,068	$ 47,119
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	28	28	241,107	967,510	510		$ 15,507	$ 6,804	$ 22,310
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		102	90	478,138	4,940,848	2,692	$ 135,411	$ 15,507	$ 50,166	$ 201,084
T&D	T&D									
Total		102	90	478,138	4,940,848	2,692	$ 135,411	$ 15,507	$ 50,166	$ 201,084

EE Program Portfolio TRC Test	**1.83**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Lassen Municipal Utility District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	4	4	10,237	102,366	57	$ 1,478		$ 1,225	$ 2,703
HVAC	Res Cooling	23	17	4,193	75,469	48	$ 3,375		$ 903	$ 4,278
Appliances	Res Dishwashers	1		1,767	22,977	13	$ 937		$ 275	$ 1,212
Consumer Electronics	Res Electronics									
HVAC	Res Heating	6		31,451	624,330	314	$ 65,838		$ 7,472	$ 73,310
Lighting	Res Lighting	2		1,347	12,125	6	$ 200		$ 145	$ 345
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	1	1	7,952	143,136	78	$ 2,369		$ 1,713	$ 4,082
HVAC	Res Shell	18	18	36,099	721,975	407	$ 28,328		$ 8,641	$ 36,969
Water Heating	Res Water Heating	1	1	2,422	36,336	19	$ 1,200		$ 435	$ 1,635
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	5	5	1,032	18,574	12	$ 4,300		$ 222	$ 4,522
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	16	16	151,250	2,382,584	1,319	$ 30,503		$ 28,517	$ 59,020
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	8	8	64,929	260,545	137		$ 4,176	$ 3,118	$ 7,294
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			29	576		$ 1,200		$ 7	$ 1,207
SubTotal		84	71	312,708	4,400,993	2,411	$ 139,728	$ 4,176	$ 52,675	$ 196,578
T&D	T&D									
Total		84	71	312,708	4,400,993	2,411	$ 139,728	$ 4,176	$ 52,675	$ 196,578

EE Program Portfolio TRC Test	**1.59**

Excluding T&D

LODI ELECTRIC UTILITY (LEU)

- Established in 1910
- 28,920 customers (23,920 residential; 5,000 commercial/industrial; FY 08-09)
- Peak demand: 141 megawatts; occurs in: summer daytime (FY 08-09)
- Annual Energy Use: 452,075,554 kilowatt hours (FY 08-09)

LEU Energy Efficiency Program Highlights

Since 1998, LEU has spent more than $7.3 million on demand-side management rebates and programs designed to increase energy efficiency for the community, resulting in a 14 percent peak demand reduction and an 11 percent energy reduction.

Current (FY 08-09) Commercial/Industrial Customer Programs:

- *Lodi Commercial (G-1 & G-2) Rebate Program:* Provides rebates for small and medium-sized commercial customers who install designated energy efficiency measures, such as: attic insulation, window tinting/shade screens, programmable thermostats, ceiling fans, appliances, high efficiency lighting retrofits, and maintenance of refrigeration/HVAC equipment.

- *Lodi Commercial/Industrial (G-3 to I-1) Rebate Program:* Provides rebates of up to $20,000 to large commercial and industrial customers; the rebate is for pumps/motors, process equipment improvements, building envelope improvements, HVAC/chiller replacements, and high efficiency lighting retrofits.

Current (FY 08-09) Residential Customer Programs:

- *Lodi Appliance Rebate Program:* Provides rebates to all customers who purchase an EnergyStar ® refrigerator, dishwasher and or front-loading clothes washer.

- *Lodi Energy Efficient Home Improvement Rebate Program:* Provides rebates to customers for installing attic/wall insulation, attic fans, whole house fans, shade screens/window tinting, radiant barriers, as well as for repairing/replacing HVAC duct systems, and for installing high efficiency (14+ SEER) air conditioning units.

- *HVAC System Performance Test:* Provides a rebate for customers who utilize a select list of HVAC contractors capable of performing a high-end duct system performance test (the test measures air flow, air return and system balance).

Current (FY 08-09) Commercial and Residential Programs:

- *Lodi Energy Audit Program:* LEU offers on-line and on-site residential energy audits as well as on-site small commercial customer energy audits.

Current (FY 08-09) School (In-Classroom) Programs:

- *Lodi LivingWise Program:* Provides energy efficiency "kits" and manuals to 445 6th grade students in Lodi schools; the program is designed to teach the students the basics of energy and water conservation.
- *Lodi Solar Schoolhouse Program:* Provides teacher mini-grants and teacher training regarding solar/renewable energy resources; also via this program, we sponsor various solar fairs and events at individual school (students and teachers build solar-powered fountains, model race cars, houses, ovens, etc.).
- *Youth Energy Summit:* Provides scholarship opportunities for juniors and seniors in high school; the eligible students must participate in a two-day workshop (known as the Youth Energy Summit), then complete a community service learning project, based upon the information they garner from the Summit/training. After completing their "project," the student teams then present their findings and projects to a panel of judges, who in turn award the scholarship funds.

Current (FY 08-09) Low-Income Residential Programs:

- *Lodi C.A.R.E. Package Program:* Provides grants to very low-income customers in need of assistance paying their electric utility account; the program coordination/customer screening is performed by the Lodi Salvation Army. In order to secure a grant payment, customers must consent to in an in-home energy audit.
- *Lodi SHARE Discount Rate:* LEU provides a rate discount of 30% for qualifying residential customers on their electric utility monthly billing statement; $400,000 annually is budgeted for this rate discount from the Lodi Public Benefits Program fund.

Measurement Methodology:

Lodi utilizes KEMA Consulting 'Measure Quantification Methodology' report for various residential and small commercial rebate programs; for large commercial and industrial customer rebates/programs, the customer is required to provide to the utility an engineered energy analysis/audit detailing their projected savings.

In addition, LEU has implemented an Evaluation, Measurement & Verification (EM & V) Plan, and has completed its first *and* second year assessments of randomly selected programs and large rebates as part of the designed EM & V Plan. For the FY 08-09, projected energy savings were verified for five (5) large customer rebates and one (1) residential program (Lodi Energy Efficient Home Improvement Rebate Program) was assessed for the FY 08-09. Note: LEU retained the services of Summit Blue Consulting to assist in the creation of the aforementioned Lodi EM & V Plan,

as well as the on-site, first and second year kWh savings verification processes. LEU intends to utilize Summit Blue for similar kWh and kW verification savings in 2010.

Proposed LEU Energy Efficiency Programs and Services: (for 2010-2011)

Maintain existing programs, while possibly expending additional Public Benefit Program funds on demand-side management rebates/incentives.

LEU Demand Reduction Programs:

LEU does not currently have any demand reduction programs in place.

Economic Impacts on LEU Energy Efficiency Programs:

Based upon conversations with numerous large energy users in Lodi, it became apparent that during this reporting period, the state of the global economy (as well as the United States and California economies) had an impact on the implementation of large energy efficiency projects in Lodi. Although some projects were pursued during this time-frame, many large customers opted to wait on installing energy conservation measures; instead, choosing to maintain the status quo and to "ride out the current economic storm" until better times were achieved. Projects involving the proverbial "low-hanging fruit," such as a lighting retrofit, were still relatively popular; however, projects involving building envelope improvements or process equipment upgrades were held back until further notice.

LODI ELECTRIC UTILITY (LEU)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Lodi Electric Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	3	3	7,782	77,816	43	$ 5,600		$ 529	$ 6,129
HVAC	Res Cooling	3	3	6,210	70,194	42	$ 7,937		$ 583	$ 8,521
Appliances	Res Dishwashers	1	2	3,896	50,648	28	$ 3,125		$ 351	$ 3,476
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	7	1	4,680	42,120	22			$ 252	$ 252
Pool Pump	Res Pool Pump	1		1,120	11,200	6	$ 100		$ 76	$ 176
Refrigeration	Res Refrigeration	2	2	10,800	194,400	105	$ 7,100		$ 1,327	$ 8,427
HVAC	Res Shell	16	16	14,439	241,832	136	$ 13,514		$ 1,823	$ 15,337
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	2	1	3,999	64,421	36	$ 8,235		$ 459	$ 8,694
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting			202,320	2,225,520	1,233	$ 28,160		$ 15,454	$ 43,614
Process	Non-Res Motors									
Process	Non-Res Pumps			274	2,736	1	$ 1,620		$ 18	$ 1,638
Refrigeration	Non-Res Refrigeration	49	33	303,872	1,215,488	686	$ 11,224		$ 8,823	$ 20,047
HVAC	Non-Res Shell	3	3	3,299	49,486	28	$ 1,086		$ 349	$ 1,435
Process	Non Res Process			224,000	3,360,000	1,787	$ 6,000		$ 21,397	$ 27,397
Comprehensive	Non Res Comprehensive									
Other	Other			887,519	7,770,386	4,133	$ 52,804		$ 48,560	$ 101,364
SubTotal		86	64	1,674,210	15,376,248	8,287	$ 146,505		$ 100,000	$ 246,505
T&D	T&D									
Total		86	64	1,674,210	15,376,248	8,287	$ 146,505		$ 100,000	$ 246,505

EE Program Portfolio TRC Test	**2.50**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Lodi Electric Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	3	3	7,782	77,816	43	$ 5,600		$ 1,683	$ 7,283
HVAC	Res Cooling	3	3	6,210	70,194	42	$ 7,937		$ 1,518	$ 9,455
Appliances	Res Dishwashers	1	2	3,896	50,648	28	$ 3,125		$ 1,095	$ 4,220
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	7	1	4,680	42,120	22			$ 911	$ 911
Pool Pump	Res Pool Pump	1		1,120	11,200	6	$ 100		$ 242	$ 342
Refrigeration	Res Refrigeration	2	2	10,800	194,400	105	$ 7,100		$ 4,204	$ 11,304
HVAC	Res Shell	16	16	14,439	241,832	136	$ 13,514		$ 5,230	$ 18,743
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	2	1	3,999	64,421	36	$ 8,235		$ 1,393	$ 9,628
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting			202,320	2,225,520	1,233	$ 28,160		$ 48,128	$ 76,288
Process	Non-Res Motors									
Process	Non-Res Pumps			274	2,736	1	$ 1,620		$ 59	$ 1,679
Refrigeration	Non-Res Refrigeration	48	33	297,795	1,191,178	672	$ 11,000		$ 25,760	$ 36,760
HVAC	Non-Res Shell	3	3	3,299	49,486	28	$ 1,086		$ 1,070	$ 2,156
Process	Non Res Process			212,800	3,192,000	1,697	$ 5,700		$ 69,028	$ 74,728
Comprehensive	Non Res Comprehensive									
Other	Other			887,519	7,770,386	4,133	$ 52,804		$ 168,038	$ 220,842
SubTotal		86	64	1,656,932	15,183,939	8,184	$ 145,981		$ 328,360	$ 474,341
T&D	T&D									
Total		86	64	1,656,932	15,183,939	8,184	$ 145,981		$ 328,360	$ 474,341

EE Program Portfolio TRC Test	**1.83**

Excluding T&D

CITY OF LOMPOC

Lompoc initially implemented energy audit programs in 1981. In 1991, the programs were expanded to include energy efficiency education programs. In 2001, energy efficiency rebates and a low-income refrigerator subsidy program were added. Since then, additional programs have been added and existing programs modified to accommodate the community's needs.

Current Commercial Customer Programs:

- Commercial Lighting Rebate: the rebate for changing T12 to T8 fluorescent lighting was changed to offer a rebate that would provide for a 1.75 year payback.
- Exit Sign Rebate: A rebate of $15 to replace existing incandescent or fluorescent-lit exit signs with LED, or $30 the replace same signs with electro-luminescence signs. This rebate was first offered in 2002. (Net Annual Savings: 28,126 kilowatt-hours).

Current Commercial and Residential Customer Programs:

- Refrigerator Rebate: A $144 rebate is paid to electric customers, or landlords who rent to City Customers, to replace working refrigerators or freezers manufactured before 1992 with a new energy-efficient model. The old appliance must be recycled at the City's landfill. (Net Annual Savings [all refrigerator programs]: 85,263 kilowatt-hours.)
- Refrigerator BuyBack Program: $35 is paid to customers who recycle, at the City's landfill, any second working refrigerator or freezer. This program was first offered in May 2001.
- Clothes Washer Rebate: A $120 rebate is paid to customers who replace a working (non Energy Star®) clothes washer with a new Energy Star® model. The old clothes washer must be recycled at the City's landfill. This program was first offered in March 2003.
- Dishwasher Rebate: A $50 rebate is paid to electric customers who replace working dishwashers, which were manufactured before 1994, with an Energy Star® model. The old dishwasher must be recycled at the City's landfill. This program was first offered in March of 2003.
- Gas Conversion Payment: $100 is paid to electric customers who replace and recycle an electric water heater or clothes dryer with a gas appliance. The electric appliance must be recycled at the City's landfill. (Net Annual Savings: 12,717 kilowatt-hours).
- LED Holiday Lighting: A rebate of $4 for up to 35 light strands and $8 for larger strands is paid to utility customers who purchase LED holiday lighting. This program was first offered in October 2005.

- Renewable Resource Rebate: Any electric customer who installs a grid-tied self-generating electric system that is considered to be renewable energy will receive a rebate of $3.00 per watt. (Non profit customers will receive a rebate of $3.50 per watt.) This program was first offered in February 2004. *C*ustomized Rebate: a rebate of $.15 per watt saved is offered for any energy efficiency measure completed for any electric customer.
- Energy Audits: Lompoc provides free energy audits for all customers and an online audit for residential customers.

Current Low Income Customer Programs:

- Income Qualifying Refrigerator Purchase Program: For low-income customers, a payment of up to $600 is made toward the purchase of a new refrigerator.. The old refrigerator must be in working order; must have been manufactured before 1992; and will be recycled at the City's landfill. The customer is required to repay the City $240 over a one-year time period.
- Rate and Energy Assistance Programs: Lompoc offers a rate discount for low-income customers and a special medical needs rate. Current subsidy is $8.00 per month not to exceed electric charges.

Current Community Programs:

- Education Programs: Lompoc encourages energy conservation through school and community education programs.

Proposed City of Lompoc Energy Efficiency Programs and Services: **(for 2009-2010)**

- Evaluate existing programs to determine if incentives are attractive to customers and increase incentive levels if necessary to assure continued participation in all programs.
- Ensure that energy efficiency is part of integrated resource planning by determining and implementing the most cost-effective, reliable, and feasible energy efficiency measures. Measure and evaluate the impact of energy efficiency programs.

System upgrades:

Lompoc will continue the upgrade of all 4 kilovolts lines to 12 kilovolts distribution lines and is purchasing only low-loss transformers.

Lompoc Demand Reduction Programs:

Lompoc offers a Firm Curtailable Load Purchase Program, but no customer has utilized it since it was created. Customers who have an average peak-period demand of at least 500 kilovolt-A during each of the last six summer months may apply for this program. The customer must sign a contract for electric service for a five-year period, and will be required to reduce demand when the City requests such curtailment. The customer receives a demand payment of $6.00 per kilowatt of curtailed demand per season and $0.10 per kilowatt-hour.

ARRA Stimulus Funding: Lompoc has applied for ARRA large city ARRA funding of $165,600. One hundred thousand dollars ($100,000) will be used to retrofit existing street lighting from HPS to LED lighting. As a test, the City has installed four LED street lights and two Induction street lights in an areas on side streets off of state highways. The two lighting types will be evaluated as the project moves forward.

Commercial Lighting Retrofit: thirty thousand dollars ($30,000) of Public Benefit funding will be added to the$65,600 for rebates for commercial business to retrofit existing T12 lighting to more energy efficient lighting. Installation of occupancy sensors will be included in this program.

Economic impact: As business slows, the downturn in the economy has affected customer willingness to spend money on energy efficient appliances unless the old appliance 'breaks down' and it seems they will not purchase the most energy efficient appliance or the type of first choice but the least expensive model that will meet minimum needs. For example, last year for the three months of April, May and June fifty-four rebates in all categories were issued. This year for the same three months, twenty-three rebates were issued.

This is also evident when approaching commercial customers to discuss the retrofit of their lighting. The rebate for retrofit of lighting will pay for 85 to 95% of the cost to change the light to more energy efficiency lamps. Even though this will make the payback within 6 months or less, the business owner is reluctant to participate in the program. It is extremely more and more difficult to convince a customer that they will save money by making the suggested changes. To them the facts are that the money must be spent before a rebate is issued and they do not want to make that initial expenditure.

The other problem that is caused by the economic downturn is the amount of available businesses that exist in our service territory. Property owners are reluctant to make energy efficient improvements to a vacant building. The City continues to work with property and business owners to reduce usage while meeting the business needs.

CITY OF LOMPOC

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Lompoc		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	1,894	18,944	10	$ 4,560	$ 380	$ 133	$ 5,073
HVAC	Res Cooling									
Appliances	Res Dishwashers			549	7,134	4	$ 700	$ 140	$ 51	$ 891
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	80	13	123,638	1,265,513	690	$ 39,988		$ 8,703	$ 48,691
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	3	3	18,960	341,280	185	$ 15,900		$ 2,412	$ 18,312
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	26	20	118,198	1,300,182	721	$ 27,030		$ 9,267	$ 36,297
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	3	2	17,440	69,760	39	$ 25,070		$ 539	$ 25,609
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			111,440	334,320	185			$ 2,500	$ 2,500
SubTotal		113	40	392,120	3,337,134	1,834	$ 113,248	$ 520	$ 23,604	$ 137,372
T&D	T&D									
Total		113	40	392,120	3,337,134	1,834	$ 113,248	$ 520	$ 23,604	$ 137,372

EE Program Portfolio TRC Test	**1.81**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Lompoc		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	1,894	18,944	10	$ 4,560	$ 380	$ 132	$ 5,072
HVAC	Res Cooling									
Appliances	Res Dishwashers			549	7,134	4	$ 700	$ 140	$ 50	$ 890
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	83	14	127,347	1,303,478	711	$ 41,188		$ 9,116	$ 50,304
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	3	3	18,960	341,280	185	$ 15,900		$ 2,387	$ 18,287
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	26	20	118,198	1,300,182	721	$ 27,030		$ 9,093	$ 36,123
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	3	2	17,440	69,760	39	$ 25,070		$ 488	$ 25,558
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			111,440	334,320	185			$ 2,338	$ 2,338
SubTotal		116	40	395,829	3,375,099	1,855	$ 114,448	$ 520	$ 23,604	$ 138,572
T&D	T&D									
Total		116	40	395,829	3,375,099	1,855	$ 114,448	$ 520	$ 23,604	$ 138,572

EE Program Portfolio TRC Test	**1.82**

Excluding T&D

LOS ANGELES DEPT OF WATER & POWER (LADWP)

GENERAL DESCRIPTION OF UTILITY

- Established in 1902 to deliver water to the City of Los Angeles. Electricity distribution began in 1916.
- Serves 4 million people via 1.4 million electric and 680,000 water connections. Nearly 70% of electricity usage is by the commercial/industrial sectors and over 30% by residential customers.
- A peak demand of 6,165 MW was registered in the summer of 2006.
- Annual energy use is 24.6 million megawatt-hours.
- 8,611 employees.
- Largest municipal utility in the nation.

LADWP Energy Efficiency Program Highlights

- LADWP Energy Efficiency Program expenditures during the period beginning FY 2000-2001 through FY 2008-2009 totaled $204.3 million.
- Programs achieved peak demand reduction of 262.5 MW and 823.0 GWh of energy savings during this period.
- Average life cycle cost of these savings was $0.024/kWh.
- Savings based upon estimation methodologies approved for use by both IOU and POU for energy efficiency program reporting purposes. Savings have been adjusted annually since FY 2003-04 based on measurement and verification performed by an independent third party.

Overview of LADWP's FY 2008-2009 Energy Efficiency Programs

Commercial Customer Programs: Total Non-Residential Program expenditures: $50.0 million resulting in 25.3 MW of peak demand reduction and 151.7 GWh of annual energy savings. The rebates and rebate levels assist LADWP customers in lowering energy consumption and energy expenses while benefiting the environment. Program enhancements were made to encourage maximum achievable program participation.

- Commercial Lighting Efficiency Offer: Provides rebates for a wide variety of high efficiency lighting measures to retrofit existing buildings. Rebates levels were increased and the list of qualifying measures expanded for FY 2008-2009. Program is largely vendor-driven.

- Chiller Efficiency Program: Provides rebates to retrofit existing buildings with high-efficiency electric chillers. Expanded the list of qualifying types of chillers, and new rebate levels designed to pay the full incremental cost of new high-efficiency units.
- Refrigeration Program: Provides incentives for a variety of energy efficient refrigeration measures. Rebate measures include ice machines, solid and glass refrigerator doors, door gaskets, night covers, strip curtains, vending machine controllers, etc. To be eligible for rebates, participating customers must reserve funds and receive approval to proceed prior to purchasing and installing the qualifying refrigeration equipment.
- Custom Performance Program: Provides incentives for cost-effective energy-saving opportunities not served by existing prescriptive offerings. Program includes equipment controls, CO sensors, high efficiency technologies, and other innovative strategies. LADWP engineers evaluate the energy-saving benefits (quantity, reliability, persistence) of each submitted measure and calculate savings-based financial incentives for participating customers. Energy saving measures, equipment or systems must exceed Title 24 or minimum industry standards
- Small Business Direct Install: Program pays 100% of the installed cost, up to a maximum of $2,500, for lighting retrofits in small business customers' facilities. Program operates using SCPPA Direct Install Program contractors made available to LADWP through a participation agreement with SCPPA. Program services deliver energy savings from typically hard-to-reach small business sector.
- New Construction Incentive Program: Provides incentives and technical assistance for new construction and major remodel projects; uses prescriptive incentives for standard new construction and more aggressive, energy points-based incentives for projects receiving LEED certification.
- Financing Program: Provides low-interest loans for the installation of energy efficient equipment in existing buildings (including city facilities).
- Energy Audits: On-site energy audits for existing non-residential buildings, available free-of-charge.
- Technical Assistance: Provides technical assistance and design review for retrofit projects in existing building and new construction projects.

Residential Customer Programs: Total Residential Program expenditures: $17.6 million resulting in 25.6 MW of peak demand reduction and 135.9 GWh of annual energy savings.

- Consumer Rebate Program: Provides rebates for the purchase and installation of Energy Star rated appliances and other high-efficiency equipment, including refrigerators, air-conditioners, windows, pool pumps, etc.
- Refrigerator Recycling Program: LADWP provides free pick-up and recycling of old, inefficient refrigerators, along with free CFLs and a rebate of $35 for each recycled refrigerator.
- Compact Fluorescent Lamp Distribution: Significantly expand distribution of free CFLs to residential customers through community and City events, via community groups, and in conjunction with other energy efficiency programs.

- Home Energy Saver On-Line Audit: Computerized energy audit analyzes energy use and makes recommendations for efficiency opportunities.
- Low-Income Refrigerator Exchange Program: Provides new energy-efficient refrigerators to low-income customers in exchange for their existing inefficient older models. Three-year program goal of 50,000 refrigerators.

LADWP Energy Efficiency Measurement & Verification (M&V) Activities

LADWP has retained the services of an independent third party contractor to evaluate its energy efficiency programs. The firm has completed assessing energy efficiency projects completed in fiscal year 2006-2007 (July 1 – June 30). Projects reviewed represent a random sampling from the full spectrum of LADWP's energy efficiency program portfolio. The independent third party's M&V analysis conclude the "…energy savings for most LADWP incentive programs showed that the baseline energy savings were achieved as projected by LADWP." A redacted version of this report has been submitted to the CEC and is available.

A preliminary report has been submitted by the contractor for M&V activities for the fiscal year 2007-2008, which covered mostly non-residential programs. Additional work is planned to include measures implemented under the Residential Efficiency and other programs. The findings will be made available for review as soon as the revisions and additional M&V activities are completed.

Proposed FY 2009-2010 LADWP Energy Efficiency Programs and Services

Commercial Customer Programs: Total Non-Residential Program budget: $46.7 million resulting in a projected 35.2 MW of peak demand reduction and 199.0 GWH of annual energy savings.

- Commercial Lighting Efficiency Offer (CLEO): LADWP anticipates continued increase in program participation from customers seeking the higher rebates offered for "Super T8" High Performance (HP) and Reduced Wattage (RW) systems ($30/fixture), and qualifying T8 and T5 high bay fixtures ($100/fixture). Eligible measures and rebate amounts (increased by as much as 25 percent in prior years) under review for possible refinement.
- Chiller Efficiency Program (CEP): Rebates are available for all types of chillers (air-cooled and water-cooled). In addition, water-cooled centrifugal chillers now can be tested at either standard ARI or non-standard ARI conditions provided the cooling tower meets specified performance criteria. Higher rebate levels are based on the percentage that the chiller's Integrated Part-Load Value (IPLV) performance exceeds California's Current Title 24 requirements for chillers.
- Refrigeration Program: This program continues to offer generous rebates for the purchase and installation of high efficiency refrigeration equipment and measures. Program planning includes improved outreach to equipment vendors.
- Custom Performance Program (CPP): This program continues offering savings-based incentives for the installation of energy saving measures, equipment or systems that exceed Title 24 or minimum industry standards. Program planning includes offering higher incentives for large-

scale energy efficiency projects (annual savings of 1 GWH or more) under the Custom Plus program.

- Small Business Direct Install (SBDI) Program: Continuation of the three-year program launched in February 2008, assisting small businesses (A1 rate customers) in the City of Los Angeles to become more energy efficient. Small businesses that reduce their energy load can save money and apply that savings to grow their business and create new jobs. Qualifying customers receive a FREE lighting assessment and FREE lighting upgrade and installation (up to $2,500 in cost) from one of three authorized contractors.
- New Construction Incentive Program: Continuation of a program offering two tiers of incentives to owners who build to levels that exceed required standards of energy efficiency. These incentives are being offered to encourage property owners to build to higher levels of energy efficiency and environment responsibility. Anticipated increase in program participation due to the implementation of a new Green Building Ordinance in the City of Los Angeles.
- Air-conditioning Tune-Up & Replacement: This program under development will provide customers with HVAC tune-up services, duct test and seal, and early replacement of inefficient HVAC equipment.
- Financing Program: Ongoing low-interest loan program for the installation of energy efficient equipment in City facilities.
- Energy Audits: Continued offering of free on-site energy audits for existing non-residential buildings.
- Technical Assistance: Continued offering of technical assistance and design review for retrofit projects in existing building and new construction projects.

Residential Customer Programs: Total Residential Program budget: $40.5 million resulting in a projected 18.5 MW of peak demand reduction and 102.7 GWH of annual energy savings.

- Consumer Rebate Program: Continued offering of rebates for the purchase and installation of Energy Star appliances and other high-efficiency equipment (refrigerators, air-conditioners, windows, etc.). Program planning includes offering “Point of Sale” rebates that result in maximum influence over consumer purchase decision.
- Refrigerator Recycling: Ongoing program provides free pick-up and recycling of old, inefficient refrigerators, along with free CFLs and a new cash incentive of $35 for each recycled refrigerator.
- Low-Income Refrigerator Exchange: Ongoing program provides new energy-efficient refrigerators to low-income customers in exchange for existing inefficient older models. Program planning includes improved outreach and expansion to apartment owners.
- Compact Fluorescent Lamp (CFL) Distribution: The CFL Distribution Program which provided two free CFLs to 1.2 million residential customers through direct-to-door distribution to residences in the City of Los Angeles was completed in early 2009. This program however continues by providing free CFLs to customers through community events, via community groups, and in conjunction with other energy efficiency programs.
- CFL Manufacturer Buydown Program: Offers financial incentives upstream, to CFL manufacturers and distributors, to reduce the production costs of each CFL. CFLs are then sold

to retailers in the City of Los Angeles at reduced costs, resulting in a significantly lower-price for CFLs sold to consumers.

- Point of Sale Consumer Rebate Program: Program would provide LADWP's residential customers, instant, at-the-register rebates for the purchase of qualifying energy efficient appliances and products at participating retail establishments.
- Home Energy Saver Online Audit: Ongoing availability of web-based energy audit; analyzes energy use and makes recommendations for efficiency opportunities.

Demand Reduction and Other Programs: Total Other Program budget: $ 6.8 million resulting in a projected 171 kilowatts (KW) peak demand reduction for the fiscal year.

- Thermal Energy Storage: Incentive program for FY 2009-2010 provides incentives and technical assistance for TES systems that shift load and include energy efficient designs.

Note: FY08/09 figures have not been audited and reporting includes previous year expenditures for projects concluded during FY08/09

LADWP Demand Side Management Programs Update

Assembly Bill 2021 became law in 2007 requiring the Investor Owned Utilities (IOUs) and Publicly Owned Utilities (POUs) to identify energy efficiency potential and establish annual efficiency targets that would result in the state meeting its goal of reducing total forecasted electricity consumption by 10 percent over the next 10 years. Pursuant to the requirements of AB 2021, the Los Angeles Department of Water and Power (LADWP) developed and submitted the following Board-approved energy efficiency savings goals to the state (California Energy Commission):

FY	**06-07**	**07-08**	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**	**13-14**	**14-15**	**15-16**
GWH	**58**	**275**	**315**	**300**	**280**	**255**	**252**	**252**	**252**	**252**
MW	**12**	**50**	**58**	**57**	**55**	**53**	**53**	**53**	**53**	**53**

2006 Potential Study

An energy efficiency potential study conducted by Quantum Consulting (Now Itron) was initiated in early 2005 and completed in February 2006, the results of which eventually became the basis for implementation of efficiency programs required to meet the goals shown in the LADWP AB2021 submittal. Among the more significant recommendations of the potential study included expansion of program offerings in the following areas:

- Residential Compact Fluorescent Lamp Distribution Program
- Residential and Non-Residential HVAC Performance Program (Pilot)
- Refrigerator Early Retirement Program
- Non-Residential Custom Incentives Program

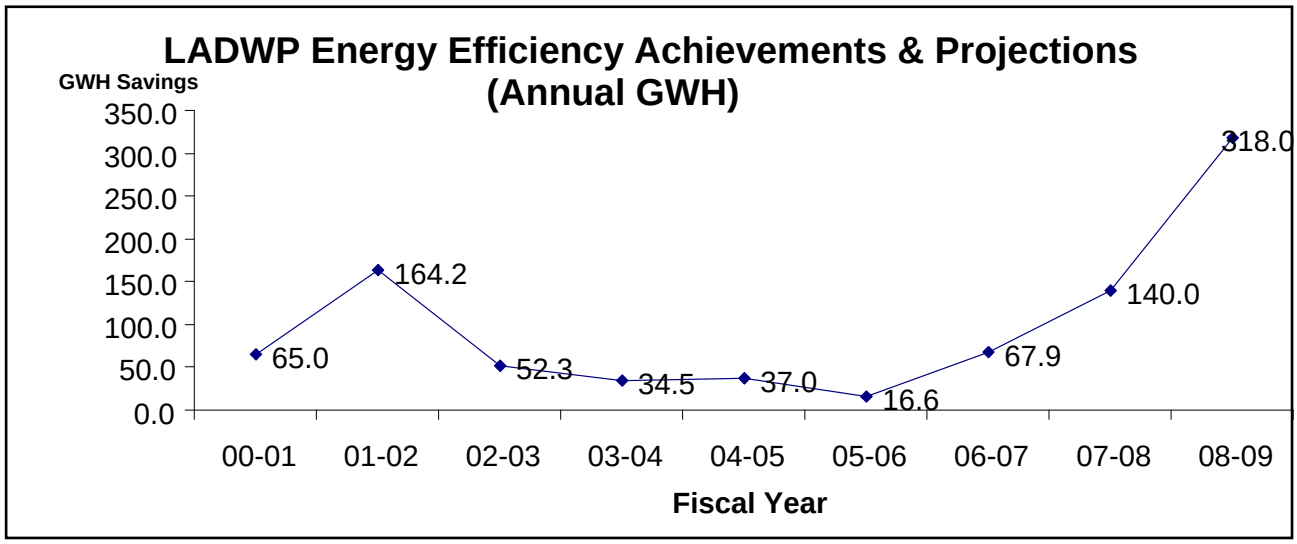
- Non-Residential New Construction Program
- Small Commercial Turnkey Program (Small Business Direct Install)
- Non-Residential Refrigeration Program
- Non-Residential Retro-Commissioning Program

These program recommendations (except for the Retro-Commissioning and HVAC Pilot Programs) were developed, launched and implemented during 2007 and 2008, in addition to continuing to offer the core programs under the Commercial Lighting Efficiency Offer (CLEO), the Chiller Efficiency Program (CEP), the Consumer Rebate Program (CRP) and expansion of the Residential Refrigerator Recycling Program to include a Low Income Refrigerator Exchange program component.

Achievements and Results – A Historical Trend and Perspective

Tracking of the energy efficiency program results starting with Fiscal Year 2000-2001 is shown by the following gross savings achievement impacts in GWH savings as well as the corresponding expenditures (in millions of dollars):

	FY 00-01	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09
Annual Gwh Savings	65.0	164.2	52.3	34.5	37.0	16.6	67.9	138.8	318.0



Energy Efficiency Programs	FY 00-01	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09
Expenditures ($M)	$12	$19	$13	$11	$10	$8	$13	$36	$67

Based on the charts, the LADWP has achieved significant increases in annual energy savings over the last several years. Savings achieved in FY 06-07 was about four times more than the previous fiscal year. The FY 07-08 more than doubled the results reported for 06-07 at 140 GWH. Adding to the upward trend, based on the more recent performance for the fiscal year, LADWP achieved energy savings amounting to 19 times FY 05-06 levels. This energy savings amount of 318 GWH represents an all-time high energy efficiency savings achievement while keeping the program expenditures well below the cost-effectiveness benchmark of 3 cents per kWH on a levelized cost basis. The current 2009-2010 fiscal year budgets a total of $92 M with a 300 GWH energy savings projection.

Potential Study 2010

As required by AB2021 load serving utilities need to identify achievable, cost-effective efficiency potential every 3 years and establish annual targets based on the results. The LADWP is in the process of implementing a new Efficiency Potential Study for June of 2010 that will evaluate the current program plans and identify new programs for implementation in order to achieve LADWP's energy efficiency goals for AB2021. A Potential Study RFP was issued in December 2009 and the LADWP received proposals from 4 bidders. Evaluations of the potential study proposals have been completed and a contract award to the most responsive bidder is expected to be sent for approval to the Board of Water and Power Commissioners on April 6, 2010. Preliminary AB2021 targets are expected to be submitted to the CEC by June followed by Board-approved potential targets by the end of July 2010.

Current and Future Program Plans

The LADWP continues its plans for development of the remaining efficiency programs identified in the potential study notably, the Retro-Commissioning program as well as an HVAC tune-Up and Early Equipment Replacement Program. Program plans are underway for a Consumer Electronics Program which will achieve energy savings in consumer electronics and appliances, specifically providing incentives to influence the manufacture and purchase of high efficiency LCD monitors, televisions and computers, both for residential and commercial applications. The LADWP is considering participating in a statewide collaborative effort with other utilities with regards to this program. Energy Efficiency staff also assesses ongoing programs to identify opportunities to make improvements that will prompt higher levels of customer participation with increased energy savings.

LADWP ARRA Grant Activities

LADWP will be receiving $ 3.5 million from the City's $ 37 million Energy Efficiency and Conservation Block Grant, to be used for the following energy efficiency measures and activities:

- Rebates for residential whole house fans
- Rebates for residential cool roofs
- Rebates for residential window shading
- Incentives for commercial building retro-commissioning

Rebates and incentives for these measures will be available in the third quarter of 2010.

LADWP has also submitted an ARRA EECBG application, requesting a total of $ 43 million for the following energy efficiency measures and activities:

- Energy Efficiency audit Program
- Direct Install Lighting Efficiency Program (targeting small and medium businesses in enterprise zones, and non-profit businesses citywide)
- Direct Install Pool Pump Replacement Program

Funding availability for this grant application is pending.

LOS ANGELES DEPT OF WATER & POWER (LADWP)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Los Angeles Dept. of Water & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	363	172	415,114	7,182,029	4,569	$ 449,000		$ 451,844	$ 900,844
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	136,052	22,263	116,262,689	1,046,364,204	529,901	$ 5,797,674		$ 162,400	$ 5,960,074
Pool Pump	Res Pool Pump	277	137	403,760	4,037,600	2,377	$ 91,320		$ 179,091	$ 270,411
Refrigeration	Res Refrigeration	2,954	2,954	18,768,299	251,146,760	133,573	$ 804,384	$ 7,505,677	$ 2,020,987	$ 10,331,049
HVAC	Res Shell	42	42	24,028	480,550	277	$ 68,260		$ 21,901	$ 90,161
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	724	724	2,503,203	45,983,549	26,496	$ 1,386,619		$ 1,268,000	$ 2,654,619
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	23,183	18,259	110,895,057	1,064,368,499	589,634	$ 2,786,935	$ 26,322,179	$ 11,949,686	$ 41,058,800
Process	Non-Res Motors	5,376	5,376	17,919,903	268,798,552	154,885	$ 2,519,157		$ 1,340,800	$ 3,859,957
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	1,124	746	7,118,779	28,982,496	16,580	$ 296,630		$ 415,000	$ 711,630
HVAC	Non-Res Shell	213	213	457,086	6,856,284	3,951	$ 155,685		$ 110,644	$ 266,329
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other	1,036	33	12,806,322	146,228,392	77,005	$ 760,977		$ 699,450	$ 1,460,427
SubTotal		171,345	50,920	287,574,239	2,870,428,915	1,539,248	$ 15,116,641	$ 33,827,856	$ 18,619,803	$ 67,564,300
T&D	T&D									
Total		171,345	50,920	287,574,239	2,870,428,915	1,539,248	$ 15,116,641	$ 33,827,856	$ 18,619,803	$ 67,564,300

EE Program Portfolio TRC Test	**3.77**

Excluding T&D

Period for Forecast Data: Fiscal Year ending 6/30/2010

Los Angeles Dept. of Water & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	1,640	1,747	3,198,207	54,316,936		$ 1,387,254		$ 787,938	$ 2,175,193
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	60,213	7,966	43,375,823	390,382,409		$ 2,712,660	$ 263,188	$ 573,106	$ 3,548,954
Pool Pump	Res Pool Pump	213	120	310,257	3,102,568		$ 83,105		$ 73,788	$ 156,893
Refrigeration	Res Refrigeration	8,709	8,709	55,843,489	922,897,371		$ 3,294,562	$ 29,838,390	$ 1,491,439	$ 34,624,391
HVAC	Res Shell	6	6	3,587	71,738		$ 10,190		$ 5,149	$ 15,339
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	1,613	1,613	8,373,626	122,472,512		$ 2,547,500	$ 2,200,000	$ 172,500	$ 4,920,000
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	29,022	24,050	144,949,880	1,484,853,405		$ 10,190,000	$ 15,285,000	$ 2,199,000	$ 27,674,000
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	1,815	589	5,004,016	58,909,279		$ 509,500		$ 595,600	$ 1,105,100
HVAC	Non-Res Shell	770	770	1,650,352	24,755,277		$ 711,540		$ 39,331	$ 750,871
Process	Non Res Process	84	84	3,212,258	48,183,872		$ 1,933,787		$ 80,121	$ 2,013,908
Comprehensive	Non Res Comprehensive	1,427	1,427	6,438,721	96,580,820		$ 3,057,000		$ 80,300	$ 3,137,300
Other	Other	6,507	6,682	29,344,316	399,746,045		$ 5,426,223		$ 1,698,865	$ 7,125,088
SubTotal		112,018	53,763	301,704,532	3,606,272,231		$ 31,863,320	$ 47,586,578	$ 7,797,138	$ 87,247,036
T&D	T&D									
Total		112,018	53,763	301,704,532	3,606,272,231		$ 31,863,320	$ 47,586,578	$ 7,797,138	$ 87,247,036

MERCED IRRIGATION DISTRICT

- For more than 75 years, the Merced Irrigation District (MID) has been in the business of generating wholesale electrical power.
- Fourteen years ago, MID determined the best way to leverage its investment in low-cost generating facilities, and to benefit Eastern Merced County communities was to develop its own electric delivery system.
- In 1996, MID created the Electric Services Department, and Foster Farms in Livingston, CA became the District's first electric customer.
- MID's electric distribution system has continued to grow with the addition of a 34-mile transmission loop and a sophisticated distribution system supporting customers in Eastern Merced County.
- MID sells electricity generated at its New Exchequer hydro power plant to PG&E under a long-term contract that expires in 2014.

MID Energy Efficiency Program Highlights

In 2000, MID-Electric Services created and implemented the Public Benefit Programs. These programs promote, assist and educate all electric customers to participate and install energy efficiency measures.

Current Commercial Customer Programs:

- Commercial Energy Retrofit Programs: Any commercial, industrial, or agricultural customer of the District is eligible to receive up to $150,000 in rebates annually. Merced Irrigation District will consider payment for conservation based on total kWh saved over one year at a rate of $0.07 or 50% of the project cost, whichever is lowest.
- Commercial New Construction Program: Incentives for the Commercial New Construction Program are also available for projects estimated to exceed Title 24 or standard practice baseline by at least 10 percent on a whole building performance basis.
- Customized Commercial Retrofit Program Effective: January 2009
- Commercial/Industrial Mechanical Equipment Retrofit Program - Effective January 1, 2009.
- Commercial/Industrial Lighting Program January 1, 2009

Current Residential Customer Programs:

- Residential Rebate Program: Implemented in 2004, this program encourages residential customers to purchase EnergyStar® labeled products, home appliances and energy-efficient compact fluorescent light bulbs.

- Appliance Recycle Program: Implemented in 2009, this program allows residential customers to receive a $35.00 rebate for recycling qualified refrigerators or freezers.
- Spruce Up Your Home Shade Tree Program: The Merced Irrigation District did not implement its tree program for 2009. However, there are plans to move forward with this program in 2011.
- Residential Energy Assistance Program (CARE): Since 2000, MID has been providing a 20 percent discount on monthly energy bills for Low-Income Families, and the Medical Baseline and Life-Support Program for those who depend on electrically powered medical equipment were implemented

Proposed MID Energy Efficiency Projects and Services:

- MID will be offering the same programs for the calendar year of 2010.

MID Investment in Renewables:

The MID Board of Directors approved a resolution to acquire 15 percent renewable resources by 2012:

- Since 2003, MID has purchased 5 megawatts of Wind-Power annually towards that goal.
- In 2008, the Merced Irrigation District launched its Solar PV Buydown Program. The amount of the rebate is based on the Estimated Performance (kilowatt-hour production) of the system, and converted to the effective annual AC generating capacity of the PV system measured inn AC watts. The rebate amount for 2008 is $2.80 per AC watt for systems up to a maximum size of 3 kilowatts (residential) and 25 kilowatts (commercial). Currently, the total amount available for rebates the first year is approximately $450,000 for all installations. Rebates are available on a first come, first served basis and are limited to $8,400/ residence and $70,000/commercial installation. Customers may apply for one incentive over the 9-year lifetime of the program.

MID Demand Reduction Programs:

MID does not currently have any demand reduction programs in place.

MERCED IRRIGATION DISTRICT

Time Period for Reporting Data: Calendar Year ending 12/31/2009

Merced Irrigation District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	6	6	14,643	146,432	81	$ 4,800		$ 4,117	$ 8,917
HVAC	Res Cooling	2		2,292	26,249	15	$ 1,060		$ 840	$ 1,900
Appliances	Res Dishwashers			864	11,232	6	$ 1,125		$ 319	$ 1,444
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	6	1	4,510	40,586	22	$ 164		$ 1,016	$ 1,180
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	4	4	24,785	446,126	242	$ 8,620	$ 1,098	$ 12,390	$ 22,108
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	3	2	1,810	27,156	15	$ 7,920		$ 781	$ 8,701
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	28	22	240,330	2,564,462	1,423	$ 36,740		$ 73,338	$ 110,078
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	6	2	19,348	77,392	43	$ 2,360		$ 2,294	$ 4,654
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other	110	110	1,227,448	18,411,720	9,707	$ 170,192			$ 170,192
SubTotal		164	148	1,536,030	21,751,355	11,554	$ 232,981	$ 1,098	$ 95,097	$ 329,176
T&D	T&D									
Total		164	148	1,536,030	21,751,355	11,554	$ 232,981	$ 1,098	$ 95,097	$ 329,176

EE Program Portfolio TRC Test	**2.16**

Excluding T&D

Period for Forecast Data: Calendar Year ending 12/31/2010

Merced Irrigation District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	6	6	14,643	146,432	81	$ 4,800		$ 3,855	$ 8,655
HVAC	Res Cooling	2		2,292	26,249	15	$ 1,060		$ 691	$ 1,751
Appliances	Res Dishwashers			864	11,232	6	$ 1,125		$ 296	$ 1,421
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	6	1	4,510	40,586	22	$ 164		$ 1,068	$ 1,232
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	4	4	24,785	446,126	242	$ 8,620	$ 1,098	$ 11,745	$ 21,463
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	3	2	1,810	27,156	15	$ 7,920		$ 715	$ 8,635
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	28	22	240,330	2,564,462	1,423	$ 36,740		$ 67,513	$ 104,253
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	6	2	19,348	77,392	43	$ 2,360		$ 2,037	$ 4,397
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other	110	110	1,227,448	18,411,720	9,707	$ 170,192		$ 484,711	$ 654,903
SubTotal		164	148	1,536,030	21,751,355	11,554	$ 232,981	$ 1,098	$ 572,631	$ 806,710
T&D	T&D									
Total		164	148	1,536,030	21,751,355	11,554	$ 232,981	$ 1,098	$ 572,631	$ 806,710

EE Program Portfolio TRC Test	**2.16**

Excluding T&D

MODESTO IRRIGATION DISTRICT

- Established in 1887, the Modesto Irrigation District (MID), located in California's Central Valley, provides electric, irrigation, and drinking water service.
- With more than 110,000 customers, 60 percent of energy sales are commercial/industrial; the remaining 40 percent are primarily residential.
- System Peak Demand: 698 MW in July 2006.
- MID's mission is to deliver superior value to irrigation, electric and domestic water customers through teamwork, technology, and innovation.

MID Energy Efficiency Program Highlights:

2009 Residential Customer Programs:

- MPower Home: Paid over $570,000 in rebates for the installation of energy efficiency measures in existing homes. Eligible measures included air conditioners, duct sealing, whole house fans, CFLs, washers, radiant barriers, insulation, and window film/screen. The peak load reduction was 524 kW and the annual energy savings was 1,710 MWH.
- LIEE / Weatherization: Paid over $200,000 in direct installation costs for energy efficiency and weatherization measures in 250 qualifying dwellings. The program also provides education, information and community outreach for low-income customers. The peak load reduction was 36 kW and annual energy savings was 213 MWH.

2009 Non-Residential Customer Programs:

- MPower Business: Paid over $508,000 in rebates for the installation of energy efficiency measures in existing commercial and industrial businesses. Eligible measures included air conditioners, lighting, refrigeration, window film/screen, motors and computing. The peak load reduction was 1,373 kW and the annual energy savings was 8,840 MWH.
- MPower Custom: Paid over $195,000 in rebates for the installation of customized energy efficiency measures in existing commercial and industrial facilities. Qualifying measures included air compressors, chiller, cooling towers, VFDs, insulation and EMS. The peak load reduction was 334 kW and the annual energy savings was 1,422 MWH.
- MPower Commercial New Construction: Paid over $227,000 in rebates for the installation of energy efficiency measures in new or renovated commercial and industrial businesses. Eligible measures included air conditioning, lighting, insulation, cooking, skylights and process cooling. The peak load reduction was 103 kW and the annual energy savings was 2,390 MWH.

2010+ Planned MID Energy Efficiency Programs and Services:

- Evaluate the appropriateness for rebate of new, energy efficiency technologies
- Ensure that energy efficiency is part of integrated resource planning by determining and implementing the most cost-effective, reliable, and feasible energy efficiency

MID Demand Reduction Program Highlights:

Since the early 1980's, MID has continuously operated demand reduction programs. Their purpose is to reduce electricity demand during peak use periods, May through September, when necessitated by operational constraints or supply shortages. Bill discounts are given for both direct load control and curtailable load reduction mechanisms. Following are program highlights for 2009:

- STEP: Bill discounts of over $330,000 for residential and commercial customers participating in the "Shave the Energy Peak" (STEP) program. STEP allows MID operators to reduce electricity demand by cycling over 14,000 air conditioners. The available peak load reduction was 13 MW.
- Interruptible Rate: Bill discounts of over $345,000 for commercial and industrial customer participants. This program allows MID operators, upon customer notification, to reduce electricity demand by requiring cessation of the curtailable portion of customer load. The available peak load reduction was 19 MW.

MID Renewable Energy Program Highlights:

On December 16, 2003 MID adopted a Renewable Portfolio Standard Policy, pursuant to Section 387 of the California Public Utilities Code. Per that policy, MID continues to generate or purchase energy from multiple, qualifying sources: small hydro, wind power and digester gas.

- Stone Drop: New investment operation and maintenance costs to continue operating an existing small hydroelectric power plant. The plant capacity is .26 MW and 2009 energy production was 129 MWH.
- High Winds 2004 Purchase Power Contract**:** New eligible renewable energy resources from the High Winds Project in Solano County, California. Purchased 25 MW of project capacity for a 10-year period, which began in 2004. The 2009 energy delivery was 61,659 MWH.
- Shiloh 2006 Purchase Power Contract: New eligible renewable energy resources from the Shiloh Project in Solano County, California. Purchased 50 MW of project capacity for a 10-year period, which began in 2006. The 2009 energy delivery was 131,986 MWH.
- Big Horn 2006 Purchase Power Contract: New eligible renewable energy resources from the Big Horn Project in Klickitat County, Washington. Purchased 25 MW of project capacity for a 20-year period, which began in 2006. The 2009 energy delivery was 64,231 MWH.
- Fiscalini: New eligible renewable energy resource located in Modesto, California. MID purchases the output from the 750 kW generating facility on an annual basis. Commercial operation commenced in June 2009. The 2009 energy delivery was 1,951 MWH.

Energy Efficiency (EE) Funding Sources

MID presently exceeds the required annual funding level for public benefit programs (2.85% of revenue - AB1890/AB995) and has for several years. Over time, low income and renewable energy programs have grown significantly and now comprise the majority of public benefit expenditures, which has led MID to fund EE from both public benefit and procurement sources. MID's 2009 EE funding from public benefits and procurement was approximately $1,901,000 and $1,505,000, respectively. Essentially, MID uses public benefit dollars for the non-incentive components of EE program costs and procurement dollars for the customer incentive component of EE program costs.

Evaluation, Measurement & Verification (EM&V) Activities

In 2009, MID made continued efforts to obtain independent, third-party review of its EE programs. MID hired Summit Blue (now Navigant) to develop the overall EM&V plan, which was posted on the website hosted by NCPA. In addition, MID's internal plan for EM&V of its EE programs is to have independent review of 1) all large rebate projects, 2) a sample of small rebate projects and 3) a sample of prescriptive programs.

Due to budget constraints in 2009, MID did not perform many of the activities outlined in the EM&V plan for its 2008 programs. However, MID did hire a CVMP qualified firm, Power Services, Inc. to perform M&V on selected 2009 projects, the scope of which encompassed process cooling, insulation, lighting, duct sealing and compressed air. In 2010, MID budgeted $55,000 and has a contract in place with Navigant to perform the work outlined in the EM&V plan for its 2009 programs.

AB2021 Goals – First Triennial Update

MID participated in the joint, POU EE potential study, which was performed by Summit Blue (now Navigant). One of the deliverables from that project was an Excel-based model tailored to its service territory. Once the model was in hand, MID staff did some preliminary testing of its sensitivity via changing values of various user-controlled inputs. Overall, MID found that its model 1) is relatively insensitive and 2) identified market potential above the level of its previously adopted goals.

Due to time constraints from compiling data for the annual SB1037 report (MID is a calendar year utility), staff did not seek Board approval of revised AB2021 targets prior to the issuance of that report. So, MID is submitting preliminary targets at this time, which are the default values prepared by Navigant. When Board approval is sought for updated targets, staff anticipates 1) presenting several scenarios and 2) the adopted numbers will differ from the preliminary ones. MID will obtain Board approval no later than May and will submit final targets via a joint POU, supplemental report.

MODESTO IRRIGATION DISTRICT

Time Period for Reporting Data: Calendar Year ending 12/31/2009

Modesto Irrigation District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	6	6	14,384	143,840	79	$ 21,700		$ 1,762	$ 23,462
HVAC	Res Cooling	159	100	147,320	2,882,277	1,845	$ 116,500	$ 16,954	$ 59,258	$ 192,712
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics			3,750	56,250	31		$ 8,983	$ 1,275	$ 10,258
HVAC	Res Heating									
Lighting	Res Lighting	387	53	295,966	2,663,694	1,422	$ 8,940	$ 55,817	$ 12,592	$ 77,349
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	162	162	1,146,692	20,640,463	11,197	$ 24,255	$ 183,357	$ 276,082	$ 483,695
HVAC	Res Shell	259	259	168,026	3,049,322	1,721	$ 401,204	$ 31,980	$ 44,183	$ 477,367
Water Heating	Res Water Heating			5,325	43,634	23	$ 50	$ 2,041	$ 883	$ 2,974
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	100	78	147,252	2,208,773	1,209	$ 40,950		$ 17,887	$ 58,837
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	1,147	1,019	6,065,279	63,438,891	35,123	$ 350,824		$ 514,157	$ 864,981
Process	Non-Res Motors			21,249	318,735	170	$ 2,450		$ 3,006	$ 5,456
Process	Non-Res Pumps	81	81	164,449	2,466,734	1,312	$ 37,555		$ 22,010	$ 59,565
Refrigeration	Non-Res Refrigeration	571	200	2,543,227	21,003,502	11,247	$ 136,982		$ 190,366	$ 327,348
HVAC	Non-Res Shell	2	2	18,822	188,224	105	$ 1,038		$ 1,508	$ 2,546
Process	Non Res Process	321	321	2,569,340	38,540,097	20,393	$ 301,599		$ 361,132	$ 662,731
Comprehensive	Non Res Comprehensive									
Other	Other	109	109	1,369,742	6,290,234	3,335	$ 60,757	$ 44,145	$ 52,141	$ 157,043
SubTotal		3,302	2,389	14,680,822	163,934,670	89,211	$ 1,504,803	$ 343,277	$ 1,558,241	$ 3,406,322
T&D	T&D									
Total		3,302	2,389	14,680,822	163,934,670	89,211	$ 1,504,803	$ 343,277	$ 1,558,241	$ 3,406,322

EE Program Portfolio TRC Test	**2.01**

Excluding T&D

Period for Forecast Data: Calendar Year ending 12/31/2010

Modesto Irrigation District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	3	3	7,463	74,633	41	$ 11,259		$ 913	$ 12,172
HVAC	Res Cooling	82	52	76,438	1,495,495	957	$ 60,447	$ 8,797	$ 30,706	$ 99,950
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics			1,946	29,186	16		$ 4,661	$ 661	$ 5,322
HVAC	Res Heating									
Lighting	Res Lighting	201	28	153,565	1,382,081	738	$ 4,639	$ 28,961	$ 6,508	$ 40,108
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	84	84	594,971	10,709,484	5,809	$ 12,585	$ 95,137	$ 143,032	$ 250,753
HVAC	Res Shell	134	134	87,182	1,582,167	893	$ 208,168	$ 16,593	$ 22,889	$ 247,650
Water Heating	Res Water Heating			2,763	22,640	12	$ 26	$ 1,059	$ 457	$ 1,542
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	52	40	76,403	1,146,041	627	$ 21,247		$ 9,253	$ 30,500
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	598	532	3,165,751	33,147,637	18,350	$ 183,386		$ 267,829	$ 451,215
Process	Non-Res Motors			11,025	165,378	88	$ 1,271		$ 1,557	$ 2,828
Process	Non-Res Pumps	42	42	85,326	1,279,886	681	$ 19,486		$ 11,396	$ 30,882
Refrigeration	Non-Res Refrigeration	296	104	1,319,575	10,897,850	5,836	$ 71,074		$ 98,547	$ 169,621
HVAC	Non-Res Shell	1	1	9,766	97,662	54	$ 539		$ 780	$ 1,319
Process	Non Res Process	166	166	1,333,124	19,996,865	10,581	$ 156,487		$ 187,000	$ 343,487
Comprehensive	Non Res Comprehensive									
Other	Other	57	57	710,702	3,263,743	1,730	$ 31,524	$ 22,905	$ 26,979	$ 81,409
SubTotal		1,716	1,243	7,636,000	85,290,747	46,415	$ 782,139	$ 178,112	$ 808,507	$ 1,768,758
T&D	T&D									
Total		1,716	1,243	7,636,000	85,290,747	46,415	$ 782,139	$ 178,112	$ 808,507	$ 1,768,758

EE Program Portfolio TRC Test	**2.01**

Excluding T&D

MORENO VALLEY UTILITY

- The City of Moreno Valley, one of the fastest growing cities in the country and incorporated in 1984, established a municipal utility in 2001. Moreno Valley Utility (MVU) began serving its first customers in February 2004. MVU serves residential, commercial, and industrial customers.
- Moreno Valley Utility currently serves approximately 5,400 customers. Residential customers have historically comprised the majority of the energy sales for MVU, however energy sales to MVU's commercial and industrial customers are growing.
- All customers' facilities are six years old or less, occupying buildings that meet Title 24 requirements. This results in a lower Energy Efficiency Potential.
- Peak Demand: 20.1 megawatt
- Annual Energy Use: 81 gigawatt-hours
- Mission: Moreno Valley Utility strives to provide reliable, economical, and safe electric distribution service to benefit the community and the City.

Moreno Valley Utility Energy Efficiency Program Highlights

In FY 08/09, Moreno Valley spent approximately $4,300 in incentives to increase energy efficiency for the community. MVU's Energy Efficiency Program has resulted in an energy savings of approximately 298,000 kilowatt-hours per year. Approximately $40,000 was spent in energy audits of city facilities and development of customer programs in energy efficiency and renewable distributed generation. The recommended HVAC, lighting and building envelope upgrades from the audit reports for the municipal facilities will be funded by Energy Efficiency and Conservation Block Grant (EECBG) the city received in late 2009.

Current Customer Programs and Projects:

- Energy Efficiency Program: Moreno Valley Electric Utility offers incentives to developers for buildings that exceed California Title 24 requirements by more than 10 percent.
- Energy Audits**:** Provided customers with a variety of recommendations for reducing energy consumption, when requested. Some of these audits were provided by community organizations that increase awareness of existing energy efficiency programs.
- Val Verde Unified School District Energy Incentive Agreement: In return for an energy efficiency incentive, Val Verde's Indian Middle School design far exceeded Title 24 requirements which resulted in an Energy Incentive Agreement with MVU. The project's energy savings are approximately 298,000 kWh, which resulted in incentives of $4300 for FY 08/09.

Proposed Energy Efficiency Projects and Services: (2009-2010)

- Residential Energy Efficiency Programs: All homes within the service territory are six years old or less, which make it difficult to offer building envelope upgrades. MVU is developing

innovative programs to encourage energy efficiency. These include direct-to-customer CFL Giveaways and Energy Star® rated electric appliance rebates.

- Assembly Bill 811: The City of Moreno Valley has signed an Implementation Agreement with the Western Riverside Council of Governments (WRCOG) in support of the Contractual Assessment Program to Finance Distributed Generation Renewable Energy Sources and Energy Efficiency Improvements for its' customers support of Assembly Bill 811. This program will allow property owners within MVU territory to obtain low interest loans for eligible renewable distributed generation projects and energy efficiency upgrade projects.
- Stater Bros. Energy Efficiency Project: Multiple energy efficiency measures (EEMs) were simulated for the new Stater Bros market (using DOE-2) which calculated an energy savings of 627,271 kWh as well as a demand reduction of 162 kW. Under MVU'S Energy Efficiency Program, this resulted in an incentive of approximately $31,000. This project will be included in next year's report.
- Ross Distribution Center Energy Efficiency Projects: MVU's largest customer is exploring projects to reduce annual energy consumption and reduce their peak demand significantly.
- Highland Fairview Corporate Park Project: Highland Fairview is proceeding with the development of a corporate park which will be served by MVU. There will be five buildings which includes a 1.8 million square feet building anchored by a Fortune 500 company. The design team for this project has expressed interest in obtaining LEED certification, and MVU is working with Highland Fairview in maximizing energy efficiency on this project. The Project is expected to be completed and energized in fourth quarter 2010.

Demand Reduction Programs:

Staff is evaluating potential technologies for future demand reduction programs, such as smart metering and thermal energy storage.

M&V:

Engineering analysis programs, such as DOE-2, are the basis for calculated energy savings and incentive calculations.

MORENO VALLEY UTILITY

Time Period for Reporting Data*:* Fiscal Year ending 6/30/2009

Moreno Valley Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive			285,000	2,850,000	1,584	$ 4,250		$ 4,000	$ 8,250
Other	Other									
SubTotal				285,000	2,850,000	1,584	$ 4,250		$ 4,000	$ 8,250
T&D	T&D									
Total				285,000	2,850,000	1,584	$ 4,250		$ 4,000	$ 8,250

EE Program Portfolio TRC Test	5.83

Excluding T&D

Time Period for Forecast Data*:* Fiscal Year ending 6/30/2010

Moreno Valley Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive			310,000	3,100,000	1,723	$ 31,000		$ 4,351	$ 35,351
Other	Other									
SubTotal				310,000	3,100,000	1,723	$ 31,000		$ 4,351	$ 35,351
T&D	T&D									
Total				310,000	3,100,000	1,723	$ 31,000		$ 4,351	$ 35,351

EE Program Portfolio TRC Test	5.83

Excluding T&D

CITY OF NEEDLES

CITY OF NEEDLES

- The City of Needles Public Utilities Department was established in 1982.
- Needles is located in Western Area Power Authority Administration control area and is not part of the CAISO grid.
- Needles has 2,969 meters, serving 2,504 residential customers, 461 commercial customers, 35 commercial demand customers and 4 master metered and municipal customers.
- Total energy sales are 57,241,260 kilowatt-hours (FY 2008-09); 46 percent is residential sales, 54 percent is commercial and the remainder is master metered and municipal sales.
- Peak demand is 19.1 megawatts
- Needles is an extreme summer peaking utility. Summer temperatures (late June through early September) can reach 130 degrees, and daytime temperatures range from minimum temperatures in the mid-90s with afternoon temperatures between 100 and 120 degrees.

City of Needles Energy Efficiency Program Highlights

On an annual basis, Needles' load factor is less than 37 percent. The Needles City Council approved Resolution No. 7-24-07 1 on July 24, 2007 adopting the provisions of California Assembly Bill 2021 – *Public Utilities Energy Efficiency.* The budget amount of $150,000.00 adopted for the program was based upon the Rocky Mountain Institute's analysis *" to identify all potentially cost -effective electricity efficiency savings and establish annual targets for energy efficiency savings and demand reduction for the next 10 - year period"*

The City of Needles' energy efficiency programs are designed to reduce the summer air conditioning loads and increase the annual load factor. In FY 2008-09, the City of Needles' energy efficiency programs reduced peak demand by 186 kilowatts and 185,959 kilowatt-hours (per Western Area Power Authority approved Integrated Resource Plan Annual Progress Report for 2009). *Note: T*he kilowatt savings are derived from the number of hours that air conditioners are used in Needles (essentially all hours when temperature is greater than 90 degrees – April through October).

Note: At FYE 6/30/2008 the total combined residential and commercial usage was 57,553,850 kilowatts hours. At FYE 6/30/09, the combined residential and commercial usage was 57,241,260 kilowatt hours, a reduction of 312,690 kilowatt hours or .05%.

The City of Needles will continue to budget $150,000 annually for the existing energy efficiency programs and will allocate additional funding if customer demand is greater than the program allocation**.** The $150,000.00 is funded by ratepayers via a line item on their electric bill (*Mandated Conservation* at $0.00338/kWh). The prerequisite for eligibility for the energy efficiency program (City pays for 14 or higher SEER rated air conditioners, evaporative coolers and refrigerators) is that the rate payer's apply for weatherization through the San Bernardino Community Action Coalition ("HEAP").

Needles budgeted $50,000 for solar programs beginning in FY 2009/10.

Current Residential Customer Programs:

- Air conditioner, evaporative cooler, refrigerator replacement with SEER 14 or higher with proof of home weatherization completed.
- **.** Air Conditioning Rebate Program: Provides installation support and financial rebates to facilitate upgrades to more efficient lighting and air conditioning systems.
- Sun Shade Program: Provides rates for the installation of residential sun shades, designed to lower house temperatures during the summers.

Proposed City of Needles Energy Efficiency Programs and Services: **(FY 2010 - 11)**

Maintain Existing Programs at current levels and monitor effectiveness for potential expansion (finances allowing).

City of Needles Demand Reduction Programs:

The City of Needles demand reduction program reduction target calls for 0.2mW for 2010.

CITY OF NEEDLES

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Needles		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	6	6	185,959	3,347,262	2,129	$ 150,000		$ 15,000	$ 165,000
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		6	6	185,959	3,347,262	2,129	$ 150,000		$ 15,000	$ 165,000
T&D	T&D									
Total		6	6	185,959	3,347,262	2,129	$ 150,000		$ 15,000	$ 165,000

EE Program Portfolio TRC Test	**2.73**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Needles		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	6	6	176,661	3,179,899	2,023	$ 142,500		$ 15,000	$ 157,500
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		6	6	176,661	3,179,899	2,023	$ 142,500		$ 15,000	$ 157,500
T&D	T&D									
Total		6	6	176,661	3,179,899	2,023	$ 142,500		$ 15,000	$ 157,500

EE Program Portfolio TRC Test	**2.72**

Excluding T&D

CITY OF PALO ALTO UTILITIES

- Established in 1900.
- The City of Palo Alto Utilities (CPAU) is the only municipal utility in California that operates city owned utility services that provide electric, natural gas and water services to its customers.
- CPAU has 29,024 electric meters.
- CPAU's annual electric load is 20 percent residential, 48 percent commercial and 32 percent industrial with a customer base of 90 percent residential, 9.3 percent commercial, and 0.7 percent industrial.
- CPAU's eligible renewable energy resources comprised 19 percent of annual energy supply in 2009. The Long-term Energy Acquisition Plan sets a target of 33 percent by 2015.
- CPAU's award winning PaloAltoGreen Program offers a voluntary 100 percent renewable energy alternative for retail customers, which added 5 percent in 2008 to the energy mix with over 20 percent of customers participating in 2008. The program received the 2008 U.S. Department of Energy award for Best Green Power program for a small utility.

CPAU Energy Efficiency Program Highlights

CPAU implemented energy efficiency programs in the 1970s. In 1996, CPAU approved a policy to fund electric, gas and water efficiency programs at one percent of revenues per year. In 1998, CPAU increased the electric public benefits program budget to approximately 3 percent of revenues, with a one-year increase of an additional 8 percent from the electric commodity purchase budget during the 2001 energy crisis. In April 2007, Palo Alto City Council approved CPAU's first Ten-year Energy Efficiency Portfolio Plan, setting aggressive energy efficiency targets and adding funding from supply funds, increasing efficiency budgets by 50 percent for electric and 100 percent for natural gas. During FY 2008 and 2009, the actual electric efficiency savings achieved exceeded the goals set in 2007.

Current Commercial Customer Programs and Services:

Commercial and Industrial Energy Efficiency Program (CIEEP): This program, which began in mid-2009, is delivered by Enovity, Inc. It provides technical services and cash incentives to identify, quantify and implement electric and natural gas efficiency projects for commercial and industrial customers. The program provides valuable professional services at no-cost audits and review for CPAU commercial and industrial customers with buildings larger than 30,000 square feet and/or greater than 50 MW maximum electric demand. Customers are then assisted through implementation and rebate application process. Specific areas of focus for CIEEP activities include: HVAC systems, process (including compressed air and steam systems), controls, domestic hot water, lighting controls and energy efficient

lighting retrofits. Typically these are implemented through control setting changes, hardware repair and installation of new equipment.

Commercial Advantage Program: Incentives offered to commercial customers for investments in efficient lighting, motors, HVAC and Custom Projects that target peak demand and energy reductions. The program was expanded in 2008 to include food service and refrigeration measures. Consultant Assistance for Resource Efficiency: Comprehensive technical assistance for commercial customers to identify efficiency measures to facilitate peak demand reduction and energy savings.

Commercial Lighting Retrofit Program (Right Lights+)*:* With the non-profit company Ecology Action, CPAU has provided since 2006 this program of assistance to small businesses in Palo Alto. These businesses receive fast, free, unbiased, expert assessment and recommendations tailored to their needs in the areas of lighting, refrigeration, and vending equipment. In 2008, this turnkey program was enhanced through a contract with National Resources Management to include refrigeration measures (primarily refrigeration gaskets) at low cost to commercial customers.

MeterLinks: Online utility data accessible for large industrial customers to enable the customers in efficient implementation of load management programs and energy usage management.

Current Residential Customer Programs and Services:

Smart Energy Programs: A comprehensive energy efficiency incentive program for residential customers. Rebates and technical assistance promote home shell improvements, and the installation of attic/roof insulation, high efficiency cooling and refrigeration equipment, appliances and lighting. In 2008 incentives were added for residential clothes washers which previously only received a rebate from the Santa Clara Valley Water District for water savings.

On-line energy audits: Working with Aclara since 2004, this on-line analysis tool allows residents to identify the ways they can reduce energy and water use.

Low-Income Assistance Programs: CPAU provides weatherization and equipment (refrigerators and furnaces) replacement to low-income residents.

Community Education Programs:

Community Energy Education: CPAU offers free residential online audits and other energy conservation and efficiency education programs to target groups in the community. Activities include hosting commercial Facility Manager Network meetings, residential energy workshops, participation in Chamber of Commerce meetings, neighborhood association events, and local fairs and special events.

Green@Home Audits: Beginning in late 2008, CPAU contracted with a local non-profit company to provide free in-home residential energy audits. The auditor will install a variety of low cost energy and water saving measures including three compact-fluorescent lamps and an electric usage monitoring device.

Building Operator Training: Training commercial facility managers and staff on retro-commissioning commercial facilities. CPAU hosted 8 well-attended classes in 2008.

Public Schools Program:

Palo Alto Unified School District has 17 schools with 10,000 students. CPAU provides annual education grants to the local schools to support teacher training programs and the development of curriculums and education projects that promote energy and water efficiency. CPAU also participates in monthly school sustainability committee meetings and makes educational presentations to classes on energy efficiency and renewable energy.

Third-Party Program Evaluation, Measurement and Verification

To meet the requirements of state law, a third party consultant (Navigant Consulting) was also contracted with to provide evaluation, measurement and verification services (EM&V) of the energy efficiency savings and demand reduction achieved during FY 2008-2009. The consultant report was completed in March 2010.

The EM&V effort consisted of two areas: process evaluation and impact evaluation. The process evaluation focused on the Residential Smart Energy program and the Commercial RightLights Plus program. The impact evaluation covered the Commercial Advantage program and the RightLights Plus program. The energy savings from these two programs combined account for over 70% of the EE program savings.

Based on the sampled customer projects, the realization rates for the Commercial Advantage Program and the RightLights Plus program were found to be 89.2% and 84.3% respectively. On a project basis, some sites have higher than 100% realization rate due to the actual operation hours being longer than estimated. Other sites have less than 100% realization rate, with various reasons attributing to the lower than projected savings:

- One Commercial Advantage customer ordered more CFL lamps than the number of fixtures, with the extra lamps being stored as spares.
- Another project site only installed three of four Variable Frequency Drives (VFD), with the installation of the fourth VFD being delayed until the building is fully occupied.
- The realization rate of 84% for the RightLights Plus program is primarily attributed to the difference in the energy savings calculation methodology. Ecology Action, the program implementer, calculated energy savings based on the energy usage of existing equipment. This calculation approach is also used by Ecology Action for a similar program in PG&E's service territory. The EM&V consultant, on the other hand, used Title 24 standards as the minimum efficiency baseline from which energy savings are calculated. This approach results in lower energy savings than the reported savings from Ecology Action.

Utility staff have reviewed the recommendations from the consultant report and either have already made or are in the process of making modifications to improve the programs and future realization rates.

Federal Government Stimulus Funds under the Energy Efficiency Community Block Grant

The Energy Efficiency Community Block Grant (EECBG) program was created by Congress in 2007 and was funded for the first time by American Recovery and Reinvestment Act (ARRA) of 2009 with an appropriation of $3.2 billion. The EECBG Program is administered by the Office of Energy Efficiency and Renewable Energy of the U.S. Department of Energy (DOE). On March 26, 2009, DOE announced the EECBG formula grant allocations, and the City of Palo Alto was eligible to receive up to $663,000. Funds were received on October 27, 2009.

The two demonstration projects developed for the EECBG application are the early replacement of High Pressure Sodium (HPS) street lights on selected streets with Light Emitting Diode (LED) streetlights and the implementation of a Home Energy Report (HER) for residential customers. The EECBG funds allocated to the LED Streetlight Project and the Home Energy Report project are $450,000 and $213,000 respectively.

Ten-Year Electric Energy Efficiency Goals Update

AB 2021 requires municipal electric utilities to identify all potentially achievable cost-effective electric efficiency savings and to establish annual targets for energy efficiency savings and demand reduction over 10 years. CPAU developed its first Ten-Year Energy Efficiency Plan in 2007 and the plan was approved by City Council in April 2007.

In April 2010, CPAU staff will recommend an updated Ten-Year EE Plan to City Council for adoption. The new recommended EE savings goals are based on updated technology and market parameters, and incorporate lessons learned in implementing programs in the past three years. The recommended EE goals are to achieve 0.6% and 0.65% annual incremental efficiency savings in FY 2011 and FY 2012 respectively, and to achieve a 10-year cumulative EE savings of 7.3% by FY 20202. These new EE goals double the previous EE goals set in the 2007 Ten-Year Plan. As part of the updated Ten-Year EE plan, staff also recommends that in addition to the $1.8 million of Public Benefit funds used annually for EE programs, CPAU will utilize up to $1.2 million per year of electric supply funds to implement electric EE programs for three years starting in FY 2011.

Future Energy Efficiency Programs: (beyond FY2008-09)

In addition to the LED streetlight and the Home Energy Report projects that are funded through the DOE's Energy Efficiency and Conservation Block Grant, CPAU is currently developing two financing programs: the Electric Efficiency Financing Program (EEFP) for businesses and the CaliforniaFIRST property tax based financing for residential efficiency and renewable energy installations. The EEFP will provide zero interest, non-secured loans to businesses who install efficient equipment, and it is targeted at businesses that rent their office space. The CaliforniaFIRST program is a joint action program with 14

counties and about 100 other cities. It will allow residents to finance efficient equipment installations and make payments through their property tax assessments.

CPAU Demand Reduction Programs:

CPAU is in the process of exploring the expansion of its volunteer demand reduction pilot program for large customers. This opportunity may be enhanced by installing advanced meters, and it is being investigated as part of the preparation of the smart grid strategic plan.

CITY OF PALO ALTO UTILITIES

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

City of Palo Alto Utilities		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	2	2	38,405	384,048	212	$ 20,390		$ 6,797	$ 27,187
HVAC	Res Cooling	2	1	6,840	123,120	79	$ 5,800		$ 3,204	$ 9,004
Appliances	Res Dishwashers	3	3	12,074	156,957	87	$ 17,150		$ 2,829	$ 19,979
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	427	89	818,637	9,222,662	4,927	$ 195,903		$ 158,406	$ 354,309
Pool Pump	Res Pool Pump	5	3	7,840	78,400	43	$ 1,750		$ 1,388	$ 3,138
Refrigeration	Res Refrigeration	71	71	447,899	8,062,186	4,373	$ 48,185		$ 143,845	$ 192,030
HVAC	Res Shell	5	5	15,344	306,881	173	$ 20,718		$ 6,123	$ 26,841
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking			1,810	21,715	12	$ 350		$ 382	$ 732
HVAC	Non-Res Cooling	7	7	926,319	9,889,412	5,265	$ 76,041		$ 167,979	$ 244,020
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	354	321	1,759,938	19,379,044	10,732	$ 156,032		$ 540,124	$ 696,155
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	65	65	629,758	3,770,540	1,988	$ 70,192		$ 136,612	$ 206,804
HVAC	Non-Res Shell									
Process	Non Res Process			717	9,318	5	$ 140		$ 152	$ 292
Comprehensive	Non Res Comprehensive	883	883	2,131	21,312	11	$ 4,200		$ 341	$ 4,541
Other	Other						$ 750			$ 750
SubTotal		1,825	1,452	4,667,711	51,425,595	27,908	$ 617,601		$ 1,168,182	$ 1,785,783
T&D	T&D									
Total		1,825	1,452	4,667,711	51,425,595	27,908	$ 617,601		$ 1,168,182	$ 1,785,783

EE Program Portfolio TRC Test	**2.45**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

City of Palo Alto Utilities		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	2	2	40,325	403,250	223	$ 21,410		$ 9,239	$ 30,648
HVAC	Res Cooling	2	2	7,182	129,276	83	$ 6,090		$ 2,962	$ 9,052
Appliances	Res Dishwashers	3	3	12,677	164,805	91	$ 18,008		$ 3,776	$ 21,783
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	448	94	859,569	9,683,795	5,173	$ 205,698		$ 221,860	$ 427,557
Pool Pump	Res Pool Pump	6	3	8,232	82,320	45	$ 1,838		$ 1,886	$ 3,723
Refrigeration	Res Refrigeration	75	75	470,294	8,465,295	4,592	$ 50,594		$ 193,943	$ 244,538
HVAC	Res Shell	6	6	16,111	322,225	182	$ 21,754		$ 7,382	$ 29,136
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking			1,900	22,801	12	$ 368		$ 522	$ 890
HVAC	Non-Res Cooling	7	7	972,635	10,383,883	5,528	$ 79,844		$ 237,899	$ 317,743
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	372	337	1,847,935	20,347,996	11,269	$ 163,833		$ 466,181	$ 630,014
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	68	68	661,246	3,959,067	2,087	$ 73,702		$ 90,704	$ 164,406
HVAC	Non-Res Shell									
Process	Non Res Process			753	9,784	5	$ 147		$ 224	$ 371
Comprehensive	Non Res Comprehensive	927	927	2,238	22,378	12	$ 4,410		$ 513	$ 4,923
Other	Other						$ 788			$ 788
SubTotal		1,917	1,524	4,901,096	53,996,875	29,303	$ 648,481		$ 1,237,091	$ 1,885,572
T&D	T&D									
Total		1,917	1,524	4,901,096	53,996,875	29,303	$ 648,481		$ 1,237,091	$ 1,885,572

EE Program Portfolio TRC Test	**2.44**

Excluding T&D

PASADENA WATER AND POWER (PWP)

Background and Goals

- Established in 1906, Pasadena Water and Power (PWP) today provides electric service to more than 63,590 metered accounts over a 23 square-mile service area.
- Peak demand: highest recorded was 316 megawatts (MW) in 2006; 287 MW in 2009.
- Annual energy use is 1,336,412 megawatt-hours
- The mission of PWP's energy efficiency programs is to promote the use of socially and environmentally responsible energy efficient measures and customer assistance programs for the benefit of all Pasadena residents and business customers.
- On September 18, 2006, the City of Pasadena adopted the *United Nations Urban Environmental Accords (*http://www.wed2005.org/pdfs/Accords_11x17.pdf*)*, calling for a 10% system demand reduction by 2012 as one of 21 environmental goals for the city.
- On December 19, 2005, the City of Pasadena adopted the Green Building Practices Ordinance requiring new standards for new construction and tenant improvements. These standards incorporate energy and water efficiency measures into the design, construction and maintenance of public and private buildings.
- On September 17, 2007, the City of Pasadena adopted the following goals: energy efficiency savings of 13.3% by 2016, and the installation of 14MW of customer-owned photovoltaic systems by 2017.

Energy Efficiency Program Goals:

- Identify cost-effective energy-saving opportunities, and provide solutions to help customers achieve reductions in their electric bills.
- Provide direct assistance to qualified customers who are unable to implement cost-saving energy efficiencies on their own.
- Introduce sustainable concepts and operational practices to customers to reduce the energy consumption and environmental impacts of buildings.
- Demonstrate and evaluate new and emerging technologies which encourage market transformation of energy efficiency and peak load reduction.

Actual (FY08/09) Energy Efficiency Program Highlights

- Increased the Public Benefit Charge (PBC) collection rate to provide additional funding in order to meet aggressive energy efficiency goals (twice that of historical levels of revenue) on 7-1-2008.

- Efficiency programs, after ramping up new programs which began in the previous year, achieved 223% of PWP's FY08/09 efficiency goal
- Total FY08/09 Public Benefit Fund program expenditures of **$5,432,638** resulted in total lifetime savings of more than 366,729 megawatt-hours (MWh), or **25,915 MWh annually**, with an average cost-effectiveness test of 2.73 TRC and 7.2 PAC, as follows:
  - Residential efficiency programs provided 1,467 equipment rebates and distributed CFL's to 15,999 households, saving 11,627 MWh per year and reducing peak load by 1.5 MW.
  - Commercial efficiency programs provided 70 rebates saving 14,288 MWh per year and reducing peak load by 3.9 MW.
- Additional PWP activities not funded by the Public Benefit Fund resulted in energy savings as follows:
    - Transmission and Distribution (T&D) system upgrades saved 177 MWh per year and reduced load by 0.02 MW
    - Water efficiency program (residential and nonresidential) rebates funded by PWP and MWD saved 513 million gallons, resulting in 4,149 MWh energy savings per year and 0.006 MW load reduction.(shown on the E3 as "Non-Res Pumps")
- Combined first year energy savings for FY08/09 activities from Public Benefit Programs, Water Conservation Programs and T&D upgrades total over **30,241 MWh**.

M&V

- Contract labor performed site verification of 10% of residential efficiency purchases and installations (verifier also left behind 3 CFL's with each customer)
- Utility staff and contracted labor performed pre-and post-installation verification of all non-residential customer projects
- Used early replacement deemed savings per the E3 Reporting Tool for prescriptive rebates
- Used data loggers and third party engineering estimates for quantifying actual energy saved on selected custom efficiency projects
- Contracted third party engineers used e-Quest, DOE 2 and engineering analysis program software, calibrated with customers actual 12-24 month billing history, to evaluate current year central plant projects
- Contracted third party engineers used DOE II-type software for evaluating completed large customer projects, including chillers, lighting and motors
- Contracted third-party engineer evaluated participant phone survey results and provided NTG and energy savings for the residential Power of 10 CFL Challenge Program.

Actual (FY08/09) Commercial Customer Programs:

- Energy Efficiency Partnering (EEP) Program: This program allowed any building technology that saves energy to qualify for a rebate. Provided an electronic processing loop to speed up rebate processing and custom rebate estimate immediately. Rewarded projects that achieved the

greater cost effective energy and peak load reductions. Offered customers an additional incentive bonus for projects that were completed and verified by December 30th 2008.

- Direct Install Emerging Technologies (DIET) Program: Provided no cost site evaluations and no cost installation of seven innovative efficient products , up to $25,000 per site. Technologies included daylight harvesting, HVAC Ultraviolet, hotel room keycard, CO2 sensors, Delta "P" pressure control valve, HVAC cycle management and diesel emergency generator heat pump.
- High Performance Building Program: Provided incentives for new or remodeled buildings which exceed Title 24 energy standards by at least 12 percent. The program matched one month's electricity savings (in dollars) for each percentage greater than Title 24 code. Pasadena is built out and redevelopment activity has been decreased with the slow economy.
- LEED Certification Program: Provided incentives for buildings certified by the U.S. Green Building Council's LEED™ Rating System as follows:
    - LEED™ Certified $15,000
    - LEED™ Silver $20,000
    - LEED™ Gold $25,000
    - LEED™ Platinum $30,000
- Technical Assistance: The Technical Assistance program provided walk-through assessments of facilities, third party reviews of DSM projects and information on appropriate efficiency technologies to business customers.
- Business Energy Efficiency Outreach & Education: Promoted PWP's commercial energy conservation and efficiency programs via events, brochures and advertising.

Actual (FY08/09) Residential Customer Programs:

- Energy Star® Incentive Program: Encouraged residential customers to buy high efficiency items including refrigerators, hard-wired lighting fixtures and ceiling fans with attached light kits.
- Power of 10 Challenge Free Compact Fluorescent Lamps (CFL's): Community campaign challenged residential customers to replace ten of their existing incandescent light bulbs with CFL's. Phase I (conducted in FY 07/08) distributed two free cfl's to all residential customers. Phase II offered $75 worth of 15 common and specialty bulbs. Customer selected the number, style and wattage of lamps needed for their home and fulfillment center shipped products directly to customer. Very successful "opt-in" program shipped over 224,000 bulbs to almost 16,000 households (participation rate over 30% of all households).
- Refrigerator Recycling: Provided free pick up and recycling of old, inefficient refrigerators and/or retired second units. Customers were mailed a coupon for three CFL's (redeemable at local community centers) and a check for $25 and $35 incentive for their old refrigerators and freezers, respectively.
- Efficient Home Cooling: Rebates provided to residential customers who installed new central air conditioners (14 SEER minimum), Energy Star® doors and windows, room air conditioners, solar attic fans, and sun shade window screens.
- Energy Use Assessments: Provided customers with the Home Energy Suite, an online self-serve energy analysis tool. If the customer needed more direct assistance, this program sent energy

conservation experts to identify energy conservation opportunities and provide customers with analyses of usage and high billing histories.

- Cool Residential Trees Rebates: Incentives for planting up to 10 energy-saving shade trees (maximum $500 per household). Provided detailed guidebook and workshops on how to locate, plant and maintain shade trees.
- Residential Programs Outreach & Education: Promoted PWP's residential conservation tips and efficiency programs at events, in brochures, direct mail pieces, workshops, and advertising in local papers.
- Pool Pump Program: Provided up to $250 for a two, four or variable speed pool pump.

Budgeted (FY09/10) Energy Efficiency Program Objectives:

- Continue implementation of cost-effective programs for all customers.
- Expected FY 09/10 program expenditures up to $7,309,000 may result in annual energy savings of 19,928 MWh and reduce peak demand by 4.7 MW. (minimum cost-effectiveness target of 2.0 TRC). The largest customers are planning aggressive efficiency projects as a result of PWP incentive programs.
- PWP expects to exceed its FY09/10 goal to reduce system-wide annual energy use by 1.3% . Cumulative FY07/08-FY09/10 savings through this current year are expected to exceed the cumulative annual goals for the three year period.
- Ensure that energy efficiency is part of integrated resource planning by determining and implementing the most cost-effective, reliable, and feasible energy efficiency measures.
- Measure and evaluate the impact and potential for energy efficiency measures and programs.

Budgeted (FY09/10) Residential Customer Programs:

- Energy Star® Incentive Program: Continue existing product menu (refrigerators, lighting fixtures).
- Residential Efficient Cooling: Continue existing product menu (central and window air conditioners, windows and skylights, solar attic fans)
- Income Qualified Refrigerator Exchange: Free pick up and recycling of old refrigerator and delivery of new high-efficient refrigerator to qualified residential customers.
- Residential Pool Pump Program: Provide rebates for efficient pool pumps and encourage timers be set to off-peak hours. Substantially saves energy and reduces peak load.
- CFL Recycling: No-cost CFL recycling at local retailers and community centers. No cost recycling bags provided at community events and community centers.
- Home Energy Reports: PWP is working with OPOWER to deliver customized energy use reports to 25,000 residential electric customers. These reports will compare the electric usage of each recipient with similar PWP households. The program is currently under development.

Budgeted (FY09/10) Commercial Customer Programs:

- Energy Efficiency Partnering Program: Features an online rebate calculator and allows any technology that saves energy to qualify for a rebate. Rewards projects that achieve the most cost effective energy and demand reductions. Participation is at a high level with the institutional sector. All public schools, the community college, municipal facilities and several large institutions are participating in this program.
- LED Street Signal Retrofit Project: Provide funds for LED replacements for 100% of municipal traffic signals, managed by Public Works Department and installed by contractors.
- Direct Install Efficiency Program (DIET): Provide free evaluations and installation of innovative efficient technologies, up to $25,000 per metered account at no cost to customer. Technologies include daylight harvesting, HVAC Ultraviolet, hotel room keycard, CO2 sensors, Delta "P" pressure control valve, HVAC cycle management and diesel emergency generator heat pump.

Budgeted (FY09/10) Renewable Energy Programs:

- Pasadena Solar Initiative began 1-1-2008 and provides performance-based incentives of $3.15/Watt for residential, $2.00/watt for business customers, and $2.60/Watt for non-profit customers through December 31, 2009.
- Studied municipal properties for photovoltaic potential. List of facilities created with highest potential. Further study will be needed to prioritize facilities and coordinate with upcoming scheduled roof replacements and efficiency measures.

PWP Demand Reduction Programs:

- Demand Response Pilot Program: Evaluate technologies and program options which provide energy savings to the customer while giving the utility the ability to reduce peak demand.
- Staff is evaluating potential technologies for future demand reduction programs, such as smart metering and thermal energy storage.
- Work in conjunction with customers, other POUs and SCPPA on joint RD&D projects.

M&V

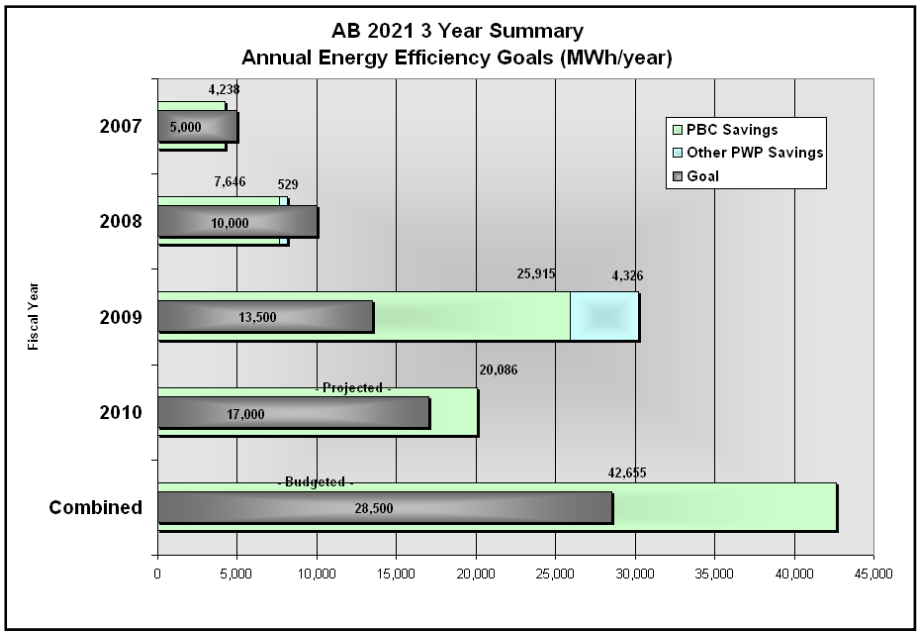
- PWP uses the KEMA/E3 Energy Efficiency Reporting Tool to calculate deemed energy savings on residential program activity.
- Contract labor performs site verification of 10% of all rebated residential efficiency purchases and installations (and leaves behind 3 CFL's)
- Refrigerator recycling and refrigerator replacement program equipment verifications are provided by ARCA, the vendor who delivers and recycles these units.
- Utility staff and contracted labor performs pre-and post-installation verification of all non-residential customer projects
- Contracted third party engineers use e-Quest, DOE 2 and engineering analysis program software calibrated to customers 12-24 months actual bill history to evaluate current year central plant projects

- DOE II-type software used for completed large customer projects, including chillers, lighting and motors
- Designing "Continuous Commissioning" demonstration projects with large institutional customers to perform facility diagnostics and measurements; submitted grant request for ARRA stimulus funds for this purpose
- Use natural replacement deemed savings per the E3 Reporting Tool for prescriptive rebates
- Use data loggers and third party engineering estimates, for quantifying actual energy saved on selected custom efficiency projects
- Program Evaluation Plan has been developed by Summit Blue Consulting. PWP is in the process of selecting a qualified vendor to provide ongoing services.
- Process Evaluation of non-residential Energy Efficiency Partnering Program has been conducted by Summit Blue Consulting
- Considering an Impact Evaluation of non-residential programs, particularly the EEP and DIET programs.

Efficiency Targets

PWP is using the "EERAM" tool provided to California's public utilities by Summit Blue Consulting to revise its next ten-year efficiency goals. Staff recommendations for FY10/11 to FY19/20 energy savings and demand reduction targets are going through the process of being adopted. City Council discussion and approval is expected in April 2010.

The proposed ten-year energy efficiency and demand reduction goals represent a 1.2% reduction of PWP's forecast electric load. This is slightly higher than the market potential determined by the model results. The goals are broken down into two implementation timeframes that align with changes in model results as well the statutory interval for adopting new ten-year goals. The proposed annual goals will provide consistency and simplicity while assisting PWP to meet the City's environmental objectives.



PASADENA WATER AND POWER (PWP)

Time Period for Reporting Data: Fiscal Year ending 6/30/09

Pasadena Water and Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	213	140	146,892	2,921,225	1,857	$ 61,505		$ 4,665	$ 66,169
Appliances	Res Dishwashers			230	2,995	2	$ 270		$ 3	$ 273
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	7,448	1,124	10,385,860	93,662,891	47,433	$ 13,589	$ 1,139,842	$ 78,491	$ 1,231,922
Pool Pump	Res Pool Pump	20	11	29,120	291,200	171	$ 5,625		$ 311	$ 5,936
Refrigeration	Res Refrigeration	154	154	973,610	17,524,980	9,321	$ 150,779	$ 66,664	$ 16,858	$ 234,301
HVAC	Res Shell	62	62	91,235	1,162,970	669	$ 33,738		$ 1,218	$ 34,956
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	926	926	6,622,186	119,199,348	68,684	$ 551,043	$ 69,295	$ 139,256	$ 759,594
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	2,949	2,949	7,430,750	74,333,460	41,311	$ 3,288,287	$ 7,371	$ 74,089	$ 3,369,747
Process	Non-Res Motors									
Process	Non-Res Pumps			4,149,234	56,429,578	29,716	$ 5		$ 50,172	$ 50,177
Refrigeration	Non-Res Refrigeration	9	9	77,727	777,270	409	$ 21,375		$ 679	$ 22,054
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			157,608	472,824	272		$ 23,250	$ 480	$ 23,730
SubTotal		11,782	5,376	30,064,452	366,778,740	199,846	$ 4,126,216	$ 1,306,422	$ 366,222	$ 5,798,859
T&D	T&D	20	20	177,000	5,310,000	3,129				
Total		11,802	5,396	30,241,452	372,088,740	202,976	$ 4,126,216	$ 1,306,422	$ 366,222	$ 5,798,859

EE Program Portfolio TRC Test	**2.68**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Pasadena Water and Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	213	140	146,892	2,921,225	1,857	$ 61,505		$ 3,935	$ 65,439
Appliances	Res Dishwashers			230	2,995	2	$ 270		$ 4	$ 274
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	74	11	103,859	936,629	474	$ 136	$ 11,398	$ 1,262	$ 12,796
Pool Pump	Res Pool Pump	20	11	29,120	291,200	171	$ 5,625		$ 392	$ 6,017
Refrigeration	Res Refrigeration	154	154	973,610	17,524,980	9,321	$ 150,779	$ 66,664	$ 23,605	$ 241,048
HVAC	Res Shell	62	62	91,235	1,162,970	669	$ 33,738		$ 1,566	$ 35,305
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	861	861	6,158,633	110,855,394	63,876	$ 512,470	$ 64,444	$ 149,317	$ 726,231
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	3,421	3,421	8,619,670	86,226,814	47,920	$ 3,814,413	$ 8,550	$ 116,143	$ 3,939,107
Process	Non-Res Motors									
Process	Non-Res Pumps			3,734,310	50,786,620	26,745	$ 5		$ 68,407	$ 68,412
Refrigeration	Non-Res Refrigeration	8	8	70,732	707,316	372	$ 19,451		$ 953	$ 20,404
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			157,608	472,824	272		$ 23,250	$ 637	$ 23,887
SubTotal		4,814	4,670	20,085,899	271,888,966	151,681	$ 4,598,391	$ 174,307	$ 366,222	$ 5,138,920
T&D	T&D	20	20	177,000	5,310,000	3,129				
Total		4,835	4,690	20,262,899	277,198,966	154,811	$ 4,598,391	$ 174,307	$ 366,222	$ 5,138,920

EE Program Portfolio TRC Test	**2.68**

Excluding T&D

PLUMAS-SIERRA RURAL ELECTRIC COOP (PSREC)

Our mission: To provide electric service with a high level of reliability for a fair and reasonable cost. PSREC is dedicated to improving the quality of life of our member-owners and our rural communities.

- Plumas-Sierra REC was established in 1937
- 7884 member-owners served (Revenue by rate class: 48% residential, 46% commercial/industrial, 6% irrigation
- Annual energy use: 160 GWh (51% com/ind, 42% res, 7% irr)
- Peak demand: 31 MW (winter hours of 5-10 AM)
- PSREC facilities include: two 69kV interconnect substations, 150 miles of transmission line, 11 distribution subs and 1200 miles of 12.47/7.2kV distribution line
- 70 employees, including our telecommunications subsidiaries

Plumas –Sierra Energy Efficiency Program Background

PSREC implemented energy efficiency programs beginning in the early 1980s. Our programs are designed to encourage members to be more energy efficient, decrease their energy demand and costs and conserve resources. PSREC uses KEMA's data for energy efficiency measure quantification.

Current Energy Efficiency Programs and Services (Calendar year 2009)

PSREC manages a comprehensive energy efficiency incentive program, helping members retrofit their homes to be more energy efficient. Generous rebates and solid technical support are available to members who purchase and install high-efficiency air and water heating systems, appliances, and lighting. The PSREC Ground Source Heat Pump Program is one of the most successful in the nation.

- Ground Source Heat Pump (GSHP) Program: Rebates and 0% interest loop leases offered for installation of ground-source heat pumps in residences and businesses.
- ENERGY STAR® Appliance Rebates: Rebates offered for the purchase of an ENERGY STAR® refrigerator, dishwasher, clothes washer or other small electronics.
- Non-essential Freezer/Fridge Retirement: Rebates offered for recycling a non-essential freezer or refrigerator.
- Marathon Water Heater Program: Discounted sales of high-efficiency electric water heaters.
- Compact Fluorescent Light Bulb Program: Discounted sales of CFLs and several events to distribute free CFLs. Additionally, rebates offered for the purchase of ENERGY STAR® CFLs from local retail locations.

- LED Holiday Light Exchange: Provide LED holiday lights for exchange with one working incandescent strand turned in.
- Custom Commercial Lighting Retrofit Rebates: Custom rebates offered to commercial businesses that retrofit existing lighting with more efficient lighting.
- Energy Efficient Equipment Discounts: Discounted sales of water heater blankets, low-flow showerheads, and ConvectAir heaters.
- Energy Audits: Free energy audits to assist members with energy conservation or troubleshooting high energy consumption in their home or business.
- Meter Lending Program: Members can borrow our WattsUp® meter to plug in 120-volt appliances and help them identify energy usage of appliances.
- Green Building Program: Semi-annual presentations to introduce contractors to new technologies for building more energy efficient homes.
- Education/Outreach: Provide energy efficiency and conservation information to interested members to help them reduce their bill, understand their energy consumption and make their home more efficient.
- Lending Library and Resource Center: Provide energy efficiency and renewable energy resources to members through a book lending library and resource center.
- Low Income Winter Rate Assistance Program: Income-qualified members can apply for a discounted rate during the heating season. In conjunction, a home energy audit is conducted to assist members with energy conservation.
- Weatherization Workshops: Provide basic information about the benefits of weatherizing, including costs/returns, and hands-on demonstrations on installing weatherization materials. Members who attend the events received their own caulking gun, a tube of caulk, spray foam sealant, a package of weather-stripping, outlet and switch gaskets, two CFLs and a tape measure.

2009 Program Summary:

Total Program Costs: $201,411
Total kW demand reduction: 140kW
Total Lifecycle kWh reduction: 2,547,357 kWh

T&D System Upgrades (Calendar year 2009)

Due to the remote nature of the PSREC system and the substantial distribution system necessary to reach all our rural members, PSREC is subject to significant system operational losses (~17,520 MWh/year). Investment in construction upgrades yields efficiency savings from reduction in system peak losses. In 2009, PSREC's system upgrades provided a load reduction of >26kW.

Analysis in Variation of Goals and Results (Calendar year 2009)

Historically, approximately 70% of our GSHP installations are in newly constructed homes. This is due to the fact that we have robust outreach and education to encourage custom home contractors to incorporate GSHPs in their construction plans. Additionally, installing a GSHP in new construction is

significantly more cost-effective due to the fact that retrofitting interior ducting can be very expensive. Unfortunately, building permits for new homes in our area declined by approximately 85% from 2008 to 2009. Due to the economic downturn and slow down of new construction, our forecasted goals have been significantly impacted for our GSHP Program, and thus for our overall energy efficiency goals. In our peak year 2007 we had 24 GSHPs installed in newly constructed homes and 11 retrofits, and in 2009 we only had 3 installed in new homes with only 6 total installations. The construction decline has been devastating to our community, as well as to our energy efficiency potential objectives. We hope to see the market recover next year and would anticipate our dedicated contractor network to again assist us in encouraging the installation of GSHPs. Additionally, our GSHP program energy savings estimates have been reviewed through EM&V efforts and the results have significantly impacted our savings.

The E3 model has limitations in how we report coincident peak demand savings since we had to use PG& E's load profile as a default. It is important to note that PSREC is unique in that our peak demand occurs during the winter hours of 5-10 AM. Therefore, it is most cost-effective for PSREC to concentrate on programs that reduce demand in the winter.

In 2009 we conducted an in-house lighting retrofit for a total estimated annual energy savings of 19,770 kWh. A Custom Rebate for an energy efficient lighting retrofit was provided to one local church with an estimated annual energy savings of 5,000 kWh.

Proposed PSREC Energy Efficiency Programs and Services (for 2010)

- Maintain or accelerate existing programs.
- Continue to target businesses with large lighting loads to provide incentives for lighting retrofits.
- Begin developing a test case program for Cold Climate Heat Pumps.
- Expand Holiday LED light program to allow members to receive rebates for Holiday LED lights purchased at any retail store.
- Evaluate and implement new energy efficiency programs and technologies, as applicable.

American Reinvestment and Recovery Act of 2009

The ARRA anticipated jump-starting a recessionary economy; unfortunately, this hasn't been the case for Rural Electric Cooperatives who are not eligible for any of the formula based energy efficiency and conservation block grants.

Planned EM&V Efforts (for 2010)

PSREC's GSHP Program constitutes the largest component of our residential energy efficiency programs, and is the top priority for Evaluation, Measurement, and Verification (EM&V) activities. PSREC initiated an engineering review to verify the energy savings attributable to GSHP systems in 2009. In 2010, we initiated a comprehensive EM&V review of the GSHP program through Efficiency Services Group and anticipate delivery of the report in late February.

PLUMAS-SIERRA RURAL ELECTRIC COOP (PSREC)

Time Period for Reporting Data: Calendar Year ending 12/31/2009

Plumas Sierra Rural Electric Coop		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	4	4	10,181	101,808	56	$ 2,100		$ 17,209	$ 19,309
HVAC	Res Cooling									
Appliances	Res Dishwashers			1,394	18,127	10	$ 900		$ 8,545	$ 9,445
Consumer Electronics	Res Electronics			172	1,548	1	$ 100		$ 2,030	$ 2,130
HVAC	Res Heating	9	1	48,348	1,450,440	730	$ 30,940		$ 25,393	$ 56,333
Lighting	Res Lighting	117	20	75,015	661,477	353	$ 5,016		$ 3,213	$ 8,228
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	3	3	16,819	302,746	164	$ 6,500		$ 22,441	$ 28,941
HVAC	Res Shell									
Water Heating	Res Water Heating	1	1	6,925	103,872	56	$ 8,946		$ 4,113	$ 13,059
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	5	5	21,635	237,987	132	$ 10,172		$ 1,444	$ 11,616
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			50,944	152,832	84			$ 52,351	$ 52,351
SubTotal		140	35	231,434	3,030,837	1,587	$ 64,673		$ 136,738	$ 201,411
T&D	T&D	26	26	58,000	2,320,000	1,291				
Total		166	61	289,434	5,350,837	2,878	$ 64,673		$ 136,738	$ 201,411

EE Program Portfolio TRC Test	**0.89**

Excluding T&D

Time Period for Forecast Data: Calendar Year ending 12/31/2010

Plumas Sierra Rural Electric Coop		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	6	6	14,544	145,440	80	$ 3,000		$ 17,542	$ 20,542
HVAC	Res Cooling									
Appliances	Res Dishwashers	1	1	2,640	34,320	19	$ 2,000		$ 8,637	$ 10,637
Consumer Electronics	Res Electronics			344	3,096	2	$ 200		$ 2,038	$ 2,238
HVAC	Res Heating	18	2				$ 92,820			$ 92,820
Lighting	Res Lighting	80	13	49,660	433,804	232	$ 3,658		$ 3,502	$ 7,160
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	6	6	36,516	657,288	357	$ 10,750		$ 24,272	$ 35,022
HVAC	Res Shell									
Water Heating	Res Water Heating	2	2	9,492	142,380	77	$ 13,214		$ 4,424	$ 17,639
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	2	2	4,000	44,000	24	$ 250		$ 1,161	$ 1,411
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other			50,944	152,832	84			$ 52,618	$ 52,618
SubTotal		115	31	168,140	1,613,160	875	$ 125,892		$ 114,193	$ 240,085
T&D	T&D	518	518	36,500	1,460,000	812				
Total		633	549	204,640	3,073,160	1,687	$ 125,892		$ 114,193	$ 240,085

EE Program Portfolio TRC Test	**0.33**

Excluding T&D

PORT OF OAKLAND

- *150-200* customers, 100 percent are commercial
- Peak demand – 13 megawatts
- Annual energy use: 83 gigawatt-hours

Port of Oakland Energy Efficiency Program Highlights

Current Commercial Programs:

- Energy Audits: The Port is currently conducting an Energy Audit program that will result in recommendations of five major energy saving retrofit/improvement projects that could be undertaken to effectively support load reduction and the more efficient use of energy in the area. The proposed energy efficiency projects will be prioritized by highest to lowest energy savings. Rebates will be provided for the energy efficiency projects completed based on the energy audit recommendations, and up to 100 percent of the total energy audit cost.
- Energy Saving Measures Exceeding Title 24 Standards: Port will provide a rebate for any new facility constructed within the Port by its electricity customers that exceed the title 24 standards in energy saving measures. Eligible facility must reduce energy usage by a minimum of 10% compared to the standard title 24 facility. This rebate will pay for a % of the cost difference between a standard and an upgraded title 24 equipment (such as HVAC units) and material.
- Energy Saving Equipment Retrofits/Improvements Rebates: The Port has implemented a program that provides generous rebates and solid technical support for the installation of new energy efficient equipment/improvements by our commercial customers. Under our program, the eligible projects must reduce energy usage by a minimum of 20 percent, to be eligible for a rebate of the equipment cost differential (up to a 90 percent rebate for energy saving of 90 percent or more).
- Lighting Retrofit: A program providing rebates for the installation of energy efficient lighting that reduces annual energy usage by at least 35 percent in commercial facilities. This rebate is based on a single flat incentive rate of $0.05 per annual kilowatt-hours saved.
- Energy Saving / Efficiency Research, Development, and Demonstration Programs: Port electricity customers that do research, development and demonstrate new energy saving/efficiency programs are entitled to a rebate up to 20% of the cost of a project based on availability of funds. To qualify for a rebate under this program all Energy Savings/Efficiency Research, Development and Demonstration Programs must be based on environmental friendly natural resources (or waste products).

- Photovoltaic (PV) Power Generating Systems In Accordance with Senate Bill 1 (SB1): Beginning January 1, 2008, this rebate will reimburse new solar energy generating facilities a one-time flat

rate of $ 3.50 per watt (Alternating Current) of installed capacity. In the event the new solar facility generates more than the electric customer's monthly electric consumption, then the Port will purchase the excess solar electric power from said facility at the same rate the Port sells power to said facility. In addition, the new solar energy generating facilities must obtain Port approval and must comply with all regulatory requirements prior to the construction of the facility. This rebate is subjected to 7% annual reduction per SB1.

- Other Renewable (or Green) Energy Programs: Beginning January 1, 2008, this rebate will reimburse new clean wind energy generating facilities that generates over 7.5 kilowatts a onetime flat rate of $ 1.50 per watt (alternating current) of installed capacity and if the facility generates less than 7.5 kilowatts then the rebate will be a onetime flat rate of $ 2.50 per watt (alternating current) of installed capacity. In the event the new wind power facility generates more than the electric customer's monthly electric consumption, then the Port will purchase the excess electric power from said facility at the same rate the Port sells electric power to said facility. In addition, the new wind power energy generating facilities must obtain Port approval and must comply with all regulatory requirements prior to the construction of the facility. All other renewable generation that qualifies under this program are given a maximum rebate of 20% of the construction cost of the generating facility, based on the availability of funds.

Proposed Port of Oakland Energy Efficiency Programs and Services: **(for 2009-2010)**

- Maintain existing programs at current levels.

Port of Oakland Demand Reduction Programs: The Port of Oakland does not currently have any demand reduction programs in place.

PORT OF OAKLAND

Time Period for Reporting Data: Fiscal Year ending 6/30/09.

No energy efficiency rebates provided in FY 2008-2009.

RANCHO CUCAMONGA MUNICIPAL UTILITY

- The City of Rancho Cucamonga established the Rancho Cucamonga Municipal Utility (RCMU) in 2001 to provide safe, reliable and cost-effective service to retail customers that were building new facilities located in the designated service territory.
- RCMU began serving commercial and industrial customers in 2003.
- RCMU receives wholesale power through its 66/12kV substation.
- RCMU serves approximately 460 non-residential meters.
- Peak demand for the utility is 14.5 megawatts and annual energy sales are 62,600 megawatt-hours.

Rancho Cucamonga Energy Efficiency Program Highlights

In fiscal year 2008/2009, the utility spent approximately $27,000 in rebate incentives to increase energy efficiency. The annual energy efficiency savings were 13,000 kilowatt-hours. Those savings were three percent of the projected savings. This appears to reflect market saturation and customers' reluctance to invest in energy efficiency programs during this economic uncertainty.

Energy Efficiency Program Goals:

- Design and install distribution facilities that reduce system losses.
- Provide information and analysis to RCMU customers that allow them to make informed decisions about reducing energy consumption.
- Prioritize energy efficiency technologies and opportunities.
- Provide direct assistance to qualified customers who are unable to otherwise implement cost-effective and approved savings energy efficiencies.

System Design

- Customers are served through a looped 12,000 volts underground facilities with larger gauge ASCR conductors to improve system reliability and reduce system losses.
- RCMU evaluates circuit load performance to optimize performance and reduce system losses.
- RCMU purchases and installs efficient transformers to reduce system losses.
- All street lights are high pressure sodium lamps.
- All signal lights and crosswalks use LED energy saving bulbs.

Commercial Customer Programs:

- Energy Audits: City offers free, customized energy audits including lighting assessment, HVAC (Heating, Ventilation and Air Conditioning) assessment, equipment assessment and a review of energy usage. Specific cost-effective recommendations to improve energy efficiency and reduce energy use are provided. Through June 30, 2009, energy audits were completed for 60% of the utility's customers.
- Commercial Lighting Rebate: A rebate of $0.05 per kWh is offered for energy efficiency lighting and upgrades.
- HVAC Tune-up Rebate: Customers are offered a rebate up to $300.00 for HVAC tune-up. Through June 30, 2009, the City has diagnosed and verified the proper HVAC tune-up requirements for 32% of its customers.
- Time-of Use Rates Program: All customers loads exceeding 200 kilowatts demand receive time-of-use pricing bills; enabling them to reduce their energy costs through the time management of their energy usage.
- Customized Energy Programs: Measures include sunscreens, window film, and cool roofs.

Commercial Customer Education Programs:

- Energy Usage and Demand Analysis: The Utility will review energy usage and demand data at customer facilities to identify opportunities for the customer to lower costs.

Renewable Energy Programs:

- Solar Incentive Program: Solar Rebate Program provides performance-based incentives of $2.60 per installed watt rebate up to a total of $25,000 towards the purchase and installation of a solar energy system.

Rancho Cucamonga Demand Reduction Programs:

- City-Load Reduction Program – involves City facilities that have installed or modified emergency back-up generation systems.

RANCHO CUCAMONGA MUNICIPAL UTILITY

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Rancho Cucamonga Municipa Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	1	1	1,363	24,538	15	$ 21,300		$ 812	$ 22,112
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	4	4	9,877	47,192	28	$ 2,887		$ 1,312	$ 4,199
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration			362	1,450	1	$ 540		$ 35	$ 575
HVAC	Non-Res Shell			1,116	11,160	7	$ 57		$ 340	$ 397
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		4	5	12,719	84,340	50	$ 24,784		$ 2,500	$ 27,284
T&D	T&D									
Total		4	5	12,719	84,340	50	$ 24,784		$ 2,500	$ 27,284

EE Program Portfolio TRC Test	**1.14**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Rancho Cucamonga Municipa Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	2	2	4,930	88,743	54	$ 77,034		$ 2,820	$ 79,854
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	13	14	35,723	170,677	101	$ 10,439		$ 4,554	$ 14,994
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration			1,311	5,243	3	$ 1,953		$ 123	$ 2,076
HVAC	Non-Res Shell			4,036	40,362	27	$ 207		$ 1,544	$ 1,752
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		16	17	46,000	305,026	185	$ 89,634		$ 9,042	$ 98,676
T&D	T&D									
Total		16	17	46,000	305,026	185	$ 89,634		$ 9,042	$ 98,676

EE Program Portfolio TRC Test	**1.18**

Excluding T&D

REDDING ELECTRIC UTILITY (REU)

Energy Efficiency Program Performance and Forecast

Redding Electric Utility (REU) spent $2.4 million on its Public Benefits Program (PBP) in Fiscal Year (FY) 2009. Of this amount, more than two-thirds or $1.6 million was spent on REU's energy efficiency improvement programs. $1.4 million of the energy efficiency-related expenditures was used directly for utility-sponsored rebates and incentives for REU's customers' purchases and installations of energy efficient equipment and the improvement of our community.

In summary, during FY2009 REU achieved a net annual energy savings of 2.3 Gigawatt-hours (GWh) and reduced our system's net coincident peak demand by 1.5 megawatts (MW) at a combined cost of $1.6 million. Based on the results of the state-approved E3 computer model to evaluate energy efficiency program cost effectiveness, this translates into an overall energy efficiency program Total Resource Cost for REU of 2.10. According to the E3 model, this would suggest that for every $1 spent on our energy efficiency programs, REU, our customers, and society as a whole, received slightly more than $2 in value or benefit.

The FY 2009 program resulted in slightly less energy savings than forecast in 2007 largely due to economic conditions including four large commercial account closures during FY 2008 and FY 2009, and one of the state's highest unemployment rates existing in Redding and Shasta County. These conditions continued to slow the use of REU's lighting rebate program that was originally forecast to provide nearly 1 GWh of annual energy savings. To offset this program shortfall, REU participated in the Keep Your Cool Program as part of a regional effort to improve energy efficiency in the small commercial and food service refrigeration markets. REU has employed Efficiency Services Group from Portland, Oregon, to provide third-party evaluation, measurement, and verification (EM&V) services on REU's newest (and largest) energy saving program during FY 2009 in the commercial refrigeration sector. The EM&V findings showed a statistically significant sampling to confirm 100 percent of the installations were completed as documented by REU and the installer, Humitech, in the Keep Your Cool Program. This Program's deemed savings of 734 MWh accounted for approximately 30 percent of REU's total net annual energy savings in the 2009 period.

Since 1998, REU has spent more than $12 million in numerous rebate and incentive programs to increase the energy efficiency in the Redding community. These programs have raised customer awareness of energy efficiency with the installation of high efficiency measures and through increased education. REU continues to offer rebates for many energy efficient products and measures that meet utility-defined criteria and specifications including: air-conditioning equipment, household appliances, lighting, and pumps/motors.

To date, the most successful incentive program for REU has been the high efficiency air-conditioning equipment. The program has been used by roughly 400 to 500 customers per year in each of the last six years, and has served to reduce customers' energy use by a combined 15 GWh. More important, the installations of high efficiency units have reduced REU's peak demand by more than 6 MW.

REU's other programs, such as the ENERGY STAR®-approved Appliance rebate programs, have been highly utilized by customers to reduce utility bills and save energy. However, their impact has been less dramatic and far less valuable for the utility. Specifically, such programs serve to reduce overall energy usage more than peak demand. By definition, any program that reduces energy use by a greater percentage than it reduces peak demand serves to reduce the system load factor. Such a reduction in utility system load factor is, ironically, a reduction in utility system efficiency.

Therefore, while many energy efficiency programs are largely successful in reducing utility customer energy use, unless there are sufficient incentives and programs available to reduce peak demand by a like amount or more, these efficiency programs will serve to reduce utility systems' operating efficiency and increase utilities' operating costs and rates.

Serving the peak demand is essentially the most costly load – both economically and environmentally – for summer peaking electric utilities to serve. Therefore, reducing this peak should be the most critical aspect of electric utility operations. Unfortunately, there continues to be a perception in some quarters that any and all kilowatt-hours saved are of equal value.

Any utility operator can tell you that is not the case. For example, reducing the energy consumption of Redding's streetlight service by 5,000 kWh (0.5 MW) from 8PM to 6AM is far less valuable to our utility's operation than shaving 5,000 kWh and 1.0 MW from 1PM to 6PM. The fact that on-peak energy has a greater amount of embedded source energy has been recognized over the last decade by state legislators and regulators -- as most clearly demonstrated by the California Energy Commission's adoption and application of the Time Dependent Valuation (TDV) to the state's Title-24 building code.

REU would submit that similar treatment be afforded to the consideration or valuation of energy efficiency programs such that not every kWh saved is of equal value. The legislatively mandated loading order for cost-effective resource procurement addresses this with peak load reduction being placed at the top of the list.

Electric utilities typically incur large fixed costs to pay for the capital investments necessary to build the generation, transmission, and distribution infrastructure required to provide reliable electric service to all of their customers. If electric utilities continue to reduce customers' energy consumption at a cost that is greater than the variable operating cost avoided, they will be serving fewer kilowatt-hours of energy to their customers at a higher per unit cost, and ultimately will be required to raise rates to pay for the utilities' fixed costs.

While REU's energy efficiency programs have been very successful in reducing energy consumption for customers over the past 10 or more years, our programs have not been as successful in reducing peak demand. Since 1998, REU's annual load factor has decreased from

44 percent to as low as 38 percent this past year. This has occurred as our current efficiency programs have served to shave more energy from the shoulder and off-peak hours than they have from the on-peak period.

This causes "peakier" peaks and deeper valleys in the utility's load profile, and requires fixed costs to be spread over a smaller base. Beyond the costly on-peak service requirements, the deep valleys can also make it difficult to accept wind energy, which is often produced in large quantities during off-peak periods.

To improve REU's operating efficiency and to continue to provide cost-effective efficiency improvements in our system, the utility has begun the implementation of a thermal energy storage (TES) program that is primarily focused on the five ton, direct expansion air-conditioning (DX-AC) market. This relatively small-scale application of TES technology is provided with the addition of the Ice Bear TES unit to qualified AC units. REU anticipates expenditures of approximately $1 million in the next 12 to 18 months in the purchase and deployment of the first 50 units under this TES program.

The Ice Bears serve to reduce the applicable AC systems' peak demand on REU's electric system by diverting the vapor/gas refrigerant in the DX unit away from the compressor, and into a coil that runs through the system's ice block during the peak period. By relying on the temperature differential in the ice to condense liquid, rather than the mechanically-driven compressor, the compressor does not run during the utility-defined on-peak period, and the AC load is reduced by 95 percent for as much as six hours per day.

Further, because the TES compressor is used during off-peak hours to re-freeze the storage system's water and make the ice that will later be used to provide cooling, the utility "shifts" the load from on-peak to off-peak hours – thereby allowing the utility to sell energy to our customers at a time of the day that is less expensive to generate or purchase for their use.

With this nighttime operation, the compressor will typically run more efficiently than the same compressor running during the hottest hours of the day. Therefore, the customer will see a reduced amount of energy consumption (efficiency improvement) to provide a higher level of cooling comfort, and the utility will see reduced operating costs as our load profile is flattened (operating efficiency/load factor improvement) – a true win-win solution for all parties.

This continued focus on peak load reduction will be increasingly important for REU because more than half of its demand is driven by air-conditioner load. With the required use of the new refrigerant R-410A in DX/AC units, the new AC units being installed in California will be at least 15 to 20 percent less efficient than older units that use R-22 when the temperatures exceed 105 to 115°F. Therefore, even though appliance standards require high SEER unit installation, these new units using R-410A will perform less efficiently at peak load times than older units with lower SEER ratings because the new refrigerant's performance degrades substantially when ambient temperatures reach levels that regularly occur in Redding.

While REU's high-efficiency air-conditioner incentive program has been one of, if not its most successful program to-date, we will be less likely to see significant long-term peak load reduction benefits because

of the reduced efficacy and performance of the new refrigerant at high ambient temperatures. Therefore, REU is turning to the TES load-shifting technology that will allow the utility to cost-effectively sell energy to provide air-conditioning comfort to our customers, and reduce operating costs for both the individual customer and to the community as a whole in the City of Redding.

In a related energy efficiency program development, the City of Redding received an allocation of $892,700 from the Department of Energy's Energy Efficiency Community Block Grant Program. REU has developed and is implementing a whole house-based, deep energy retrofit/weatherization program for income qualified customers. Part of this Program has been the creation of a training program for local contractors in association with the Shasta Builders Exchange to create a green workforce that is capable of providing high quality Home Performance Contracting services in our Community. With the training phase complete for more than 40 contractors, REU has begun to implement the retrofit program and deploy these contractors to specific, income qualified homes for auditing and remediation services that improve the energy efficiency, safety and indoor air quality for the occupants.

Lastly, REU has used the California Publicly-Owned Utility Energy Efficiency Resource Assessment Model (CalEERAM) as developed by Navigant Consulting (formerly Summit Blue) to develop a 10-year forecast of the market potential for energy efficiency savings in Redding, as required by State law. REU revised the original model prepared by Navigant to adjust for removal of a few measures (e.g. residential CFLs and torchieres) that are not included in the utility's current or proposed rebate offerings. The net effect of these changes was to reduce the 2011 forecast by approximately 20 percent from the original Navigant model and be more in-line with REU's recent experience and rebate program performance. REU is finding that a combination of reduced disposable income for both residential and commercial customers, and the increasing saturation(s) of high efficiency appliances and other measures in our service territory has slowed the participation and use of REU's programs.

As part of this 10-year forecast tool, Redding also developed and included a forecast of the continued implementation of TES in its service territory that provides a greater reduction in peak demand. REU firmly believes this overall electric system efficiency improvement program will produce benefits for its community, the state as a whole, and our global environment. This forecast shows that energy savings will grow over time, but REU's focus on peak load reduction through load shifting technology will cause our system's peak demand to grow more slowly than the rate at which our energy requirements are reduced -- to provide the associated long-term system efficiency improvements, cost reductions, and environmental benefits for its customers.

REDDING ELECTRIC UTILITY (REU)

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Redding Electric Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	41	41	98,384	983,840	544	$ 4,913		$ 6,240	$ 11,153
HVAC	Res Cooling	299	254	265,235	4,773,107	3,051	$ 508,781		$ 52,535	$ 561,315
Appliances	Res Dishwashers	7	7	21,082	274,061	151	$ 12,657		$ 1,590	$ 14,247
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	99	13	76,706	702,894	375	$ 7,160		$ 3,175	$ 10,335
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	5	5	31,490	566,827	307	$ 21,475		$ 2,795	$ 24,270
HVAC	Res Shell	972	972	687,044	13,769,174	7,769	$ 696,292		$ 160,966	$ 857,259
Water Heating	Res Water Heating	1	1	3,301	49,512	27	$ 1,929		$ 244	$ 2,173
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	22	47	13,342	200,136	310	$ 84,487	$ 33,910	$ 13,310	$ 131,707
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	66	50	299,125	2,188,045	1,213	$ 39,954		$ 11,158	$ 51,113
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	304	82	734,009	2,959,172	1,634		$ 46,050	$ 18,839	$ 64,889
HVAC	Non-Res Shell	8	8	67,691	676,913	377	$ 3,306		$ 3,183	$ 6,489
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		1,823	1,481	2,297,409	27,143,681	15,757	$ 1,380,954	$ 79,960	$ 274,035	$ 1,734,949
T&D	T&D									
Total		1,823	1,481	2,297,409	27,143,681	15,757	$ 1,380,954	$ 79,960	$ 274,035	$ 1,734,949

EE Program Portfolio TRC Test	**2.12**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Redding Electric Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	41	41	98,384	983,840	544	$ 4,913		$ 6,240	$ 11,153
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Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	5	5	31,490	566,827	307	$ 21,475		$ 2,795	$ 24,270
HVAC	Res Shell	972	972	687,044	13,769,174	7,769	$ 696,292		$ 160,966	$ 857,259
Water Heating	Res Water Heating	1	1	3,301	49,512	27	$ 1,929		$ 244	$ 2,173
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	22	47	13,342	200,136	310	$ 84,487	$ 33,910	$ 13,310	$ 131,707
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HVAC	Non-Res Shell	8	8	67,691	676,913	377	$ 3,306		$ 3,183	$ 6,489
Process	Non Res Process									
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SubTotal		1,823	1,481	2,297,409	27,143,681	15,757	$ 1,380,954	$ 79,960	$ 274,035	$ 1,734,949
T&D	T&D									
Total		1,823	1,481	2,297,409	27,143,681	15,757	$ 1,380,954	$ 79,960	$ 274,035	$ 1,734,949

EE Program Portfolio TRC Test	**2.12**

Excluding T&D

RIVERSIDE PUBLIC UTILITIES

- Riverside Public Utilities (RPU) was established in 1895
- Over 106,000 electric and 64,000 water customers
- Population over 300,000
- Peak demand hit system high of 609 megawatts in August 2007
- Annual energy use is approximately 2,700 gigawatt-hours
- RPU employs just under 600 full-time employees

Introduction

Riverside Public Utilities is committed to the highest quality water and electric services at the lowest possible rates to benefit the community. RPU is also dedicated to its energy and water efficiency efforts, demand reduction, and resource conservation. In addition to the previously mentioned responsibilities, Riverside Public Utilities plays an important role in the execution of the Green Action Plan (GAP). The first plan, a 38 point initiative, used these guidelines to highlight seven vital areas: Energy, Greenhouse Gas Emissions, Waste Reduction, Urban Design, Urban Nature, Transportation, and Water. After completing the first action plan, the State's Department of Conservation selected Riverside as the first "Emerald City." The designation is part of a pilot project that is designed to serve as a template for other communities. The City's new Green Action Plan includes the original seven focus areas and an eighth dedicated to creating a "Healthy Community." From the focus areas 18 new goals were created and form a working document. Both action plans can be found at www.greenriverside.com.

Background

Riverside is committed to meeting the annual energy efficiency (EE) and conservation goals it has established through Assembly Bill 2021 (AB2021) for energy and demand reduction by 2016. The reduction goal of 240,038 megawatt-hours (MWh) across 10 years was established in 2006. Across the last few years, Riverside has been able to review past E3 submissions and locate areas of energy savings which had not previously been reported. Some of these areas include large scale new construction projects, refrigerator recycling efforts, direct install of lighting for small businesses, and other efficiency programs. These omissions account for over ten million additional kilowatt hour (kWh) savings not previously captured or reported. Specifically, the revised annual energy savings officially reported for FY'06-07 is now 13,109,259 kWh and for FY'07-08 the total is 10,682,305 kWh.

RPU has seen a significant reduction in program participation due to the national recession. Riverside County has the second highest unemployment rate in the country, next to Detroit. According to a recent American Public Power Association (APPA) report dated Dec. 8, 2009, "The current economic downturn has underscored the need for communities to engage in strong economic development activities, both with current and potential customers. Businesses both large and small served by public power are feeling the effects of tighter credit, reduced consumer spending, higher unemployment, and the potential of increased energy and environmental costs."

- The City is experiencing record unemployment currently at 15% (per EDD, January 2010 data.) This figure is 2.0% over the statewide unemployment figure and California has the 5th highest unemployment in the nation.
- The real estate market has been severely impacted with property values decreasing nearly 40% from the 2007 peak. In addition, the region's foreclosure rates are some of the highest in the nation. This real estate crisis has resulted in the homeowner's inability to participate in energy-efficiency home improvement measures.
- RPU has seen a drop in revenues as well as overall energy use. Energy sales and forecasts have seen a decrease of approximately 8 percent over the last two years.
- RPU's low-income program (SHARE) participation levels have nearly doubled over the last two years requiring additional unprecedented funding levels.

In response RPU is focusing new programs on direct installation, which interests cash-strapped businesses and residents. These new programs will include direct installation of programmable thermostats for small businesses, installation of VendingMisers for any business with cold drink vending machines, and the extension of the small business lighting program. RPU is also adding a Whole House Rebate Program for residential customers. The utility will continue to research and develop new cost-effective programs that yield energy savings to achieve the goals set forth by AB2021.

RPU Energy Efficiency Program Highlights

Total program expenditures of over $6,000,000 in FY 2008-2009 resulted in savings of more than 16,000,000 kilowatt hours (kWh) annually or 205,155,182 kWh lifetime. Since FY 2001-2002, total program cost for all energy efficiency programs is more than $54,000,000 resulting in greater than 160 GWh reductions.

RPU Energy Efficiency Program Objectives

- Work collaboratively with city departments to support common economic and business development goals and promote public outreach.
- Explore new opportunities to increase Energy Efficiency Program awareness.
- Implement energy efficiency measures at various city facilities to demonstrate new technologies in a responsible and cost-effective manner.
- Introduce and encourage latest energy technologies to advance market transformation.
- Evaluate program effectiveness, the needs of the customer and revise guidelines to increase participation.

- Increase current School Education Program efforts with additional funding.
- Expand awareness of "green power" by educating customers on the benefits of reducing the use of traditional electric generation and how it can reduce harmful effects on the environment.
- Support energy efficiency research and development efforts of large commercial and industrial customers.
- Economic development focused on business attraction, expansion, and retention including a focus on 'green jobs.'

Current Commercial Customer Programs

- Air Conditioning Rebate for Replacement and/or New Units: Offers incentives for replacement or installation of heating, ventilating and air conditioning units with high-efficiency equipment. The incentive is intended to close the gap in cost between new standard HVAC equipment and high-efficiency equipment. Incentive amounts are based on the unit's Seasonal Energy Efficiency Ratio rating as defined by California Title 24 codes.

- New Construction: Offers non-residential customers technical assistance during the design and planning stages of new additions to maximize energy efficiency and energy savings by exceeding California's Title 24 state standards.

- Custom Energy Efficiency Technology Grant Program: Supports businesses, non-profit organizations, educational institutions or groups of customers working in collaboration for research, development, and effective use of innovative energy technologies. Grant funding supports projects related to the efficient and innovative use of energy that are not covered under our existing non-residential programs.

- Energy Innovations Grant for Post-Secondary Educational Institutions: This program is for the funding of research, development and demonstration programs for the public interest to advance science or technology in electric-related projects in the institutions of higher education within the city of Riverside.

- Energy Efficiency Incentives for Lighting: Offers incentives for replacing older inefficient lighting with high-efficiency units. The incentive is offered to close the gap between standard lighting equipment and high-efficiency equipment.

- Technical Assistance Program: Offers all non-residential customers a comprehensive energy audit using a software program designed specifically for businesses. Demand rate and time-of-use customers can receive the services of a technical assistance consultant in addition to the audit.

- Energy Management Systems Assistance Program: Provides incentives for energy management system upgrades for non-residential customers. RPU offers cost sharing incentives to assist the customer in technology purchases that provide energy savings. The incentive is the cost sharing of half of the project based on overall customer load.

- Shade Tree Planting for Cooling Efficiency: Provides incentives to non-residential customers to plant shade trees around their business or organization to help save on summer cooling costs. Program is based on the American Public Power Associations "Tree Power" program. Customers receive a rebate check from RPU for up to $25 per tree toward their cost to purchase up to five trees annually.

- Energy Education Campaign - Residential, Business: Energy information is provided to all residential and business classes; small and large commercials customers on energy conservation and demand reduction. Onsite energy audits are also available.

- Thermal Energy Storage and Feasibility Study Incentives: Incentives are provided to close the gap in cost between standard heating, ventilating and air conditioning equipment and new cooling technologies such as thermal energy storage. The incentive amount of $200 per kilowatt is based on the on-peak kilowatt demand savings. Funding for 50 percent or up to $5,000 is also available for a study to analyze the feasibility of installing a system. A feasibility study is required before a customer entering into the agreement development phase of the program.

- Customer Directed Funding: Customers who enter into multi-year, energy service agreements with RPU can direct a portion of their Public Benefit Funds directly to their specific needs. Customer directed funds can be used for a variety of energy conservation and assistance programs that promote renewable resources, and research and development.

- Auto Meter Reading: This program provides a tool to non-residential customers that monitor the electric load on 15-minute intervals. The program allows non-residential customers the ability to view usage patterns via the internet.

- Efficient Motors: Incentives for the replacement or purchase of new premium motors for non-residential customers.

- Performance Based Incentives: Provide rebates to those customers who can demonstrate a kWh savings based on an energy-efficiency measures implemented in their business that is not already provided through a standard rebate program.

- Commercial Photovoltaic Incentive: This rebate is to encourage the installation of photovoltaic panels. Rebates are provided to customers who install PV on their business to reduce peak load. Rebates are $3 per watt up to 50 percent of the project cost, not to exceed the appropriate cap starting at $50,000 and going up to $500,000 depending on the customer size.

Current Residential Customer Programs

- Air Conditioning Rebates for New or Replacement Units: Offers incentives for replacement or installation of central heating, ventilating and air conditioning units and/or room units

with high-efficiency equipment. The incentive is intended to close the gap in cost between standard HVAC equipment and high-efficiency equipment. Incentive amounts are based on the unit's Seasonal Energy Efficiency Ratio rating as defined by California Title 24 codes.

- Energy Star® Appliance Rebates: In conjunction with the Department of Energy, this program offers rebates to customers who purchase appliances or equipment carrying the "Energy Star®" label.

- Refrigerator Purchase Rebate: Provides incentives for the purchase of new high-efficiency Energy Star®-rated refrigerators that use 20 percent to 50 percent less electricity than standard units of comparable size.

- Online Home Energy Analysis: Generates an analysis of home energy that identifies energy efficiency measures and savings. Customers complete the survey online and can view the results instantly. The Web also provides conservation information.

- Refrigerator/Freezer Recycling: This program provides for recycling of old operating inefficient refrigerators and/or stand-alone freezers that are taken to a recycling facility for processing.

- Shade Tree Planting for Cooling Efficiency: Incentives for residential customers to plant shade trees around their home to help save on summer cooling costs. Customers receive rebates of up to $25 per tree for the purchase of up to five trees annually. In addition, a free shade tree coupon comes on the back of the March bill. The coupon can be redeemed for one tree worth up to $25.

- Pool Saver Swimming Pool Pump Incentive: This program offers swimming pool owners a $5 credit on their monthly electric bill for setting their pool pump timers to operate off-peak hours.

- Low-Income Assistance: Credits up to $150 toward electric deposit or bill payment assistance for qualified low-income applicants annually.

- We Care Program: Provides disabled, seniors, and/or low-income residents free home energy efficient/weatherization product installation.

- Weatherization Incentive Rebate: This program provides a whole house approach to improving home energy efficiency with rebates on attic insulation, duct insulation, duct testing/sealing, window replacement, window shading, whole house fans, programmable thermostats and evaporative coolers.

- Residential Photovoltaic Incentive: This rebate is to encourage the installation of photovoltaic panels. Rebates are provided to customers who install PV on their home to reduce peak load. Rebates are $3 per watt up to 50 percent of the project cost, not to exceed $25,000, whichever is less.

- Low Income Refrigerator Giveaway: Provides qualifying residents with a new Energy Star refrigerator while recycling the old efficient machine.

Photovoltaic Efforts (Solar)

RPU has been actively promoting residential and commercial participation in its renewable energy programs. In support of Senate Bill 1 (SB1) RPU has allocated a budget of $2.5 million annually for the next ten years to expand customer installed systems. During the last year there were more than 30 residential installations totaling more than 180kW and three non-residential systems also generating more than 180kW of renewable solar energy.

- Photovoltaic (PV) Projects: RPU has a goal of installing 20 megawatts of local photovoltaic by 2020. The following are some of the completed projects through the end of 2009. Including residential and commercial PV installations, more than 1.3 megawatts of local PV power has been installed by the end of 2009.
    - Utilities Operations Center Carport
    - La Sierra Metrolink Station Carport
    - Autumn Ridge Apartments – Phases 1 and 2
    - Oak Tree Apartments
    - Three local City Pool Changing Facilities
    - Janet Goeske Senior Center Carport
    - City Hall 7th Floor Patio Structure
    - Orange Terrace Community Park

Schools

School Education Program: RPU supports public and private schools with a variety of energy and water-related curriculum that includes field trips and classroom presentations. To date, more than 35,000 students have been reached. (The water portion of this program is provided by water operation funds, which are not included in this budget).

Proposed RPU Energy Efficiency Programs and Services: (for 2009-2010)

RPU plans to maintain the current level of programs and services to its customers. A few additions will be made to some existing programs including:

- Double Rebates for HID Replacement
- LED Security Wall-packs
- Small Business Direct Install – Lighting
- VendingMisers Direct Install
- Commercial Thermostat Direct Install
- Residential Triple Rebates for Weatherization
- Residential 'Whole House' Rebate

Evaluation, Measurement, and Verification (EM&V)

Like many other SCPPA members, Riverside Public Utilities recently selected Summit Blue (now Navigant Consulting) to provide an evaluation, measurement and verification study of its energy-efficiency programs. This study is expected to evaluate RPU's residential and commercial rebate processes, program portfolio, the cost-effectiveness of the programs and the methods of reporting energy savings in compliance with the law. The EM&V report will also include a review of RPU's marketing materials, an assessment of the database tracking systems and a recommendation to complete an impact evaluation. The impact evaluation will consist of customer telephone surveys, onsite inspections, verifications that might include metering efforts and a thorough analysis of program effectiveness.

In addition to the efforts provided by Summit Blue, RPU consistently performs the following in support of EM&V activities:

- An onsite inspection rate of no less than 10 percent for all residential program participants, performed by RPU staff and contractors.
- A pre- and post-inspection of most commercial rebate participants, including a review of historical energy usage and energy-saving calculations.
- Audits and installations performed by third-party contractors for RPU direct install programs have high inspection rates that are performed by consultant.
- Refrigerator/Freezer Recycling program administered by Appliance Recycling Centers of America (ARCA) assures proper inspection when the contractor is picking up old refrigeration equipment.

RPU will continue current EM&V efforts for its energy-efficiency programs while working with Summit Blue to streamline the inspection processes, improve reporting and tracking efforts, and enhance overall program effectiveness.

Stimulus Opportunities

According to the Energy Efficiency Community Block Grant (EECBG) guidelines of the American Recovery and Reinvestment Act (ARRA), the City of Riverside was allocated $2,850,600 under the formula set by federal law. Using the city's Green Action Plan (GAP), adopted by Riverside City Council in 2007 as its guiding document, Riverside's stimulus strategy focuses on six key areas: Goals and Objectives, Implementation, Agency Partnerships/Impacts, Sharing and Coordination of Information, Program Sustainability, and Transparency and Accountability. The following projects were submitted under the grant for the EECBG funding through ARRA:

- Energy Efficiency Retrofits – retrofits included boiler and water pump replacement; heating, ventilating and air conditioning unit upgrades; and building automation for Riverside City Hall.

- Foreclosed Home – Green Rehab Program will offer a "whole house" approach to energy efficiency on foreclosed, vacant and blighted homes purchased by the city for low-income homebuyers.

- Personal Computer Management Software Rebate – a pilot program for all city PCs which then makes funds available for businesses and non-profit organizations. RPU will continue this program after the stimulus funding has been expended.

- Update Marketplace and University Avenue Specific Plans – stimulus money will be used to further goals including job creation, improving local air quality, lowering greenhouse gas emissions and foster long-term sustainability.

- Greenhouse Gas Community Inventory – URS Corporation will complete a community GHG emissions baseline to compliment a previously funded government facilities study.

- Solar Trash/Recycling Compactors –a program to install over 30 units to reduce energy consumption and vehicle miles traveled.

- PV Electric Vehicle Charging Station – project will use a photovoltaic charging system to charge 12 golf carts, off-setting expensive peak power and providing green renewable energy.

- Street Lighting Retrofit LED – a program to expand existing program and provide funding for approximately 200 additional energy-efficient light-emitting diode (LED) streetlights.

- Lighted Street Retrofit – design to install approximately 1,000 “Diamond Grade 3 (DG3)” street name signs to reduce maintenance costs and energy use, as well as serve as a model for future non-illuminated street name sign standards.

RPU and the City of Riverside will continue to look for ARRA stimulus, competitive bid, and grant opportunities to further enhance its energy-efficiency and demand side management programs.

RIVERSIDE PUBLIC UTILITIES

Time Period for Reporting Data: Fiscal Year ending 6/30/09

Riverside Public Utilities		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	8	8	18,305	183,048	105	$ 59,175		$ 1,245	$ 60,420
HVAC	Res Cooling	650	678	2,050,769	61,261,803	39,011	$ 478,908		$ 745,100	$ 1,224,008
Appliances	Res Dishwashers	5	4	14,592	189,696	109	$ 38,000		$ 1,319	$ 39,319
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	6,605	894	4,884,800	43,963,200	22,264		$ 540,080	$ 246,383	$ 786,463
Pool Pump	Res Pool Pump	14	3	20,280	202,800	119	$ 4,641		$ 1,469	$ 6,110
Refrigeration	Res Refrigeration	105	105	718,578	12,934,411	6,879	$ 295,400	$ 82,830	$ 84,702	$ 462,932
HVAC	Res Shell	210	210	261,349	3,509,656	2,020	$ 74,800	$ 64,439	$ 25,107	$ 164,345
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	189	212	429,304	8,343,668	4,808	$ 181,550		$ 68,261	$ 249,811
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	770	770	3,850,400	38,504,000	21,398	$ 240,650		$ 260,468	$ 501,118
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive	716	716	3,577,768	35,777,680	18,841	$ 223,611		$ 210,447	$ 434,057
Other	Other			225,997	285,220	167		$ 308,642	$ 2,148	$ 310,790
SubTotal		9,271	3,600	16,052,142	205,155,182	115,722	$ 1,596,735	$ 995,991	$ 1,646,648	$ 4,239,373
T&D	T&D									
Total		9,271	3,600	16,052,142	205,155,182	115,722	$ 1,596,735	$ 995,991	$ 1,646,648	$ 4,239,373

EE Program Portfolio TRC Test	**4.20**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/10

Riverside Public Utilities		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	6	6	13,920	139,200	80	$ 45,000		$ 1,070	$ 46,070
HVAC	Res Cooling	466	495	1,291,755	38,557,367	24,562	$ 354,336		$ 530,337	$ 884,673
Appliances	Res Dishwashers	3	3	9,600	124,800	72	$ 25,000		$ 981	$ 25,981
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump	14	3	20,800	208,000	122	$ 4,760		$ 1,704	$ 6,464
Refrigeration	Res Refrigeration	62	62	425,640	7,661,520	4,075	$ 220,000	$ 49,500	$ 56,719	$ 326,219
HVAC	Res Shell	39	39	60,728	1,214,560	699	$ 61,500		$ 10,287	$ 71,787
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	3,295	111	3,530,916	40,773,732	22,750	$ 96,000	$ 300,000	$ 320,762	$ 716,762
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	640	640	3,200,000	32,000,000	17,784	$ 200,000		$ 244,720	$ 444,720
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive	1,520	1,520	8,800,000	72,000,000	37,916	$ 350,000	$ 350,000	$ 480,067	$ 1,180,067
Other	Other			114	114			$ 176	$ 1	$ 177
SubTotal		6,046	2,879	17,353,473	192,679,293	108,061	$ 1,356,596	$ 699,676	$ 1,646,648	$ 3,702,920
T&D	T&D									
Total		6,046	2,879	17,353,473	192,679,293	108,061	$ 1,356,596	$ 699,676	$ 1,646,648	$ 3,702,920

EE Program Portfolio TRC Test	**4.48**

Excluding T&D

ROSEVILLE ELECTRIC (RE)

- Established in 1912
- 51,828 customers (45,478 residential and 6,349 businesses). Roseville Electric projects an average 1,009 new meters annually for the next 10 years.
- Peak demand – 325.15 megawatts; summer afternoon peak.
- Annual energy use: 1,233 gigawatt-hours (FY09).
- 127 employees

ROSEVILLE ELECTRIC ENERGY EFFICIENCY PROGRAM HIGHLIGHTS:

- RE began offering energy efficiency programs in the early 1980's.
- From 2001 to 2009 these programs have resulted in peak demand reductions of 15.6 MW and cumulative energy savings of over 104,000 MWh.
- Total expenditures for energy efficiency programs during fiscal year ending June 30, 2009: $2,641,412.

TIME PERIOD FOR PROGRAM PERFORMANCE DATA—Fiscal year ending June 30, 2009

CURRENT RE ENERGY EFFICIENCY PROGRAMS AND SERVICES (FISCAL YEAR 2008-2009)

Residential Retrofit Programs

- Energy Efficiency Incentives and Support Programs: RE offers comprehensive technical support and incentives to facilitate installation of incrementally higher-efficiency cooling and heating equipment, envelope measures, appliances, and lighting for residential customers. Incentives are also offered for refrigerator recycling.
- Energy Audits: A free comprehensive online audit is available for residential customers.

Non-Residential Retrofit Programs

- The Two-Five-O Small Commercial Lighting Program: Over 100 customers participated in the "Two Five-O" lighting retrofit program. The installed measures have resulted in an annual peak demand and energy reduction of over 450KW and 2,000,000 kWh.
- Municipal Facilities: Continued a 10-Year Plan to upgrade the efficiency of municipal facilities beyond code requirements during renovations and capital improvement projects**.**
- School Facilities: Assisted local schools with T12 to T8, T12 to T5, and HID to HIF lighting retrofits. Additionally, incentives for upgrades to more efficient HVAC units were provided.

- Mid-size and Large Non-Residential Program: Offered incentives to implement energy efficient measures that reduced peak loads and energy consumption; these include lighting, HVAC, and chiller programs.
- Custom Incentives: The Customized Program is designed to provide rebates to mid-size and large business customers who install peak load reducing energy efficiency measures where the work is outside the regular program requirements.
    - Waste Water Treatment Plants: The City Waste Water Treatment Plants are converting from chlorine disinfecting systems to Ultra Violet Light (UV) disinfecting systems. RE has worked with the City to install high efficiency UV lighting systems and has provided incentives for the high efficiency units. The 1st system was completed this report year; the 2nd system will be complete in spring 2010. The demand reduction for each system is approximately 500kW.
    - Chillers: Despite the limited opportunities for high efficiency chiller replacement projects in Roseville, RE assisted a large industrial customer with incentives to replace an older less efficient chiller with a new high efficiency chiller. This project resulted in relatively constant 150 kW demand reduction, with significant kWh reductions, with a .92 load factor customer.

New Construction Programs

- Residential New Construction Program: RE provides incentives to residential builders to exceed Title 24. The Preferred Homes energy efficiency and the BEST Homes energy efficiency and roof-top solar electric programs are popular among local builders. In fiscal year 2008-2009, over 30% of all new single family participated in the residential new construction programs.
- Business New Construction Program: The business new construction program provides assistance in bringing energy efficiency into the design and construction of the facility. The goal is to control peak load and reduce overall energy use. The program includes lighting, mechanical, envelope and whole-building measures.

Educational Programs and Community Outreach

- Utility Exploration Center: RE and other City departments participate in educational programs at the new "Utility Exploration Center", which opened in December 2007. This facility is an educational resource for the community that emphasizes energy and water efficiency and conservation as well as recycling solid waste.
    - LivingWise: The utilities serving the City of Roseville support the LivingWise program, which is an educational program that goes into schools to teach the students the importance of energy efficiency and water conservation.
    - Community Events**:** RE participates in numerous community events to promote energy efficiency and increase program participation. These events include Downtown Tuesday Nights, Holiday Tree Lighting, Earth Day, and several educational workshops at the Utility Exploration Center.

Rates and Low Income Assistance Programs:

- Low Income Rate Assistance: A rate discount is provided to qualifying low-income seniors, low-income customers with special medical needs and very low-income customers.
- Low Income Energy Efficiency: Residents in the low income rate assistance program are eligible for a free Energy Star refrigerator. As a requirement of the program, the participant's current refrigerator must be older than 10 years. All of the vintage refrigerators are recycled, which helps RE remove less efficient refrigerators from our service territory.
- Large General Service rates are time-of-use to encourage energy conservation during peak periods.

PROPOSED ENERGY EFFICIENCY PROGRAMS (FISCAL YEAR 2009-2010)

- Reduce the number of residential programs that do not have a TRC greater than 1.0. This includes dishwashers, windows, insulation, sunscreens, and CFLs.
- Focus on increasing participation in the residential and small business air conditioner replacement programs.
- Continue to evaluate and modify the Small Business Lighting program to increase customer participation.
- Ensure participation in the Preferred and BEST Homes programs reaches the 30% projection. Residential new construction is expected to continue at a significantly reduced level. However, the builders that are active in Roseville, continue to participate in these programs.
- Promote the new construction program for businesses so that all new buildings will surpass Title 24 by a minimum of 10 percent.
- Investigate new energy efficient strategies.
- Create a refrigerator recycling incentive program that employs a state certified refrigerator recycling company.
- Continue to promote our Customized Program to our large customers.
- Assist Placer County with the implementation of the AB811 program. AB811 authorized cities to finance energy efficiency and solar installations on developed residential and business properties via liens against property.

ENERGY EFFICIENCY PROGRAM EXPENDITURES

Fiscal Year 2009

- RE spent $5,435,381 or 3.44% of total revenues on Public Benefits programs (Low-Income Assistance, Energy Efficiency and Demand-Side Management, Research, Development and Demonstration, and Renewable Energy Technology and Resource Programs).
- As part of the dollars spent on Public Benefits programs, $2,641,412 or 1.67% of total revenue was spent on Energy Efficiency programs. This amount includes $928,109 that was used to procure energy savings through energy efficiency programs, which reduced electrical supply costs.

Proposed 2010

- RE plans to spend $4,347,676 or 3.16% of total revenues on Public Benefits programs.
- As part of the dollars spent on Public Benefits programs, $2,447,538 or 1.78% of total revenue will be spent on Energy Efficiency programs. This amount includes $431,892 that will be used to procure energy savings through energy efficiency programs, which reduced electrical supply costs.

EVALUATION, MEASUREMENT AND VERIFICATION

Fiscal Year 2009

- Completed EM&V plan December 2008.
- Submitted EM&V report for the residential retrofit HVAC, residential new construction HVAC and Commercial Custom programs.
- Reviewed the EM&V procedures for all RE commercial and residential energy efficiency programs.

Proposed 2010

- RE is has completed an evaluation of the Small Commercial Lighting Retrofit, Commercial and Industrial HiBay Lighting Retrofit and LivingWise Efficiency Education Programs.

ECONOMIC DOWNTURN

- Roseville Electric continues to be negatively impacted by the ongoing recession. Energy sales for fiscal year 2009 have decreased more than 1.0% over fiscal year 2008, and are projected to decrease an additional 2.5% in fiscal year 2010 over fiscal year 2009, as a result of residential and commercial vacancies, and reduced per meter energy consumption. Major construction projects in Roseville have been placed on hold during the recession, eliminating previously projected growth.
- Major and Key account business customers are actively inquiring about energy conservation strategies as well as energy efficiency improvements. CIP and deferred maintenance budgets are being reduced, requiring RE staff to provide additional customer assistance during the project evaluation and analysis. Many locations have retained their leased spaces but staff has been reduced, thereby reducing energy loads. Commercial occupancy rates are at all time lows.
- RE has worked hard to find projects like the Waste Water Treatment Plants and Chiller projects, but there are a limited number of large savings projects in the City. Without these projects, Roseville would not have met the AB2021 energy efficiency goals. Once the second Waste Water Treatment Plant is completed, RE does not anticipate any other large projects in the near future.

AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA) OF 2009

- The City of Roseville was awarded $1,073,700 from the Department of Energy. The City Manager has approved disbursement of these funds in the following manner:
    - $923,700 – Small Business Energy Efficiency
    - $100,000 – City owned facility onsite audit
    - $50,000 – LED streetlight pilot project

  In January 2010, the City Council will authorize City staff to accept the funds and commence with the launch of the above mentioned programs.

- On December 21, 2009 the City of Roseville submitted responses to three RFP's, requesting more than $8 million in ARRA funding. The proposals were submitted to the CEC, which received ARRA funds for the California State Energy Program from the U.S. Department of Energy. The RFPs included Comprehensive Residential Building Retrofits, Commercial Energy Efficiency Building Retrofits and Municipal Energy Efficiency Building Retrofits. Funding was not provided to the City, however.

ROSEVILLE ELECTRIC (RE)

Time Period for Reporting Data: Fiscal Year ending 6/30/09

Roseville Electric		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	5	5	12,505	125,048	69	$ 13,475		$ 3,727	$ 17,202
HVAC	Res Cooling	535	490	745,552	15,516,885	9,920	$ 577,474		$ 268,750	$ 846,224
Appliances	Res Dishwashers	3	4	10,598	137,779	76	$ 1,925		$ 3,121	$ 5,046
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	4	1	37,442	370,909	198	$ 3,385		$ 17,669	$ 21,054
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	64	64	324,710	5,844,776	3,171	$ 39,250	$ 63,252	$ 37,315	$ 139,817
HVAC	Res Shell	31	31	30,546	404,576	228	$ 23,150		$ 3,602	$ 26,752
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	511	502	2,748,259	41,197,089	22,923	$ 384,465		$ 116,632	$ 501,097
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	1,200	1,124	4,653,911	59,046,578	32,742	$ 891,250		$ 190,015	$ 1,081,264
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell	3	3	20,585	208,341	116	$ 2,383		$ 574	$ 2,957
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		2,357	2,223	8,584,107	122,851,981	69,443	$ 1,936,756	$ 63,252	$ 641,403	$ 2,641,412
T&D	T&D									
Total		2,357	2,223	8,584,107	122,851,981	69,443	$ 1,936,756	$ 63,252	$ 641,403	$ 2,641,412

EE Program Portfolio TRC Test	**3.89**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/10

Roseville Electric		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	482	441	670,997	13,965,196	8,928	$ 519,727		$ 85,472	$ 605,199
Appliances	Res Dishwashers	2	2	5,299	68,890	38	$ 963		$ 422	$ 1,384
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	122	122	623,443	11,221,971	6,087	$ 75,360	$ 121,444	$ 68,683	$ 265,487
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	480	472	2,583,363	38,725,263	21,548	$ 361,397		$ 237,014	$ 598,411
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	936	877	3,630,051	46,056,331	25,539	$ 695,175		$ 281,883	$ 977,057
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		2,022	1,914	7,513,153	110,037,651	62,140	$ 1,652,621	$ 121,444	$ 673,474	$ 2,447,538
T&D	T&D									
Total		2,022	1,914	7,513,153	110,037,651	62,140	$ 1,652,621	$ 121,444	$ 673,474	$ 2,447,538

EE Program Portfolio TRC Test	**4.36**

Excluding T&D

SACRAMENTO MUNICIPAL UTILITY DISTRICT (SMUD)

SMUD Profile (2008)[15]

- Total Customers (year-end): 592,490
- Annual Energy Sales to Customers: 10,916,750 kWh (thousands)
- Record Net System Peak Demand – 1 hour: 3,280,000 kW (July 24, 2006)

SMUD Energy-Efficiency Program Highlights

- SMUD has been continuously operating energy-conservation, load management, and energy-efficiency programs since 1976.
- In 2007, the SMUD Board of Directors approved a significant expansion in annual savings goals for its energy-efficiency resources, from approximately 0.6% of annual sales to an annual average of approximately 1.5% over the following decade. The expanded goals were part of the Board's vision to "empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region." SMUD is presently in the midst of redesigning its energy-efficiency portfolio to expand existing programs, plan and implement new programs, and develop and implement a broader marketing and engagement plan that will meet these expanded goals and the Board's vision.
- For 2009, SMUD spent $32.8 million for residential and commercial energy-efficiency programs, compared to an adjusted budget of $33.2 million.[16] All expenditures are public-goods funded. These programs are delivered 25.8 megawatts (MW) of peak-load reduction and 148.0 million kilowatt-hours (GWh) of annual energy savings, compared to annual goals of 26.0 MW and 127.0 GWh.
- For 2010 residential and commercial energy-efficiency programs, SMUD has budgeted $34.8 million in PG funds.[2] These programs are projected to deliver 24.5 MW of peak-load reduction and 143 GWh of annual energy savings.

[15] SMUD 2008 Annual Report, front inside cover and p. 21.

[16] Includes market research, planning, M&V, and emerging technologies R&D.

SMUD 2010 Energy-Efficiency Programs

Commercial/Industrial Retrofit Programs

Commercial/industrial energy efficiency retrofit programs for existing buildings and facilities are budgeted for $9.2 million, with goals of 9.1 of peak-load reduction and 48.7 GWh in annual energy savings.

- Customized Energy Efficiency Incentives: Promotes the installation of energy-efficient equipment controls and processes at all commercial and industrial customer facilities. Provides incentives to contractors and/or customers to promote efficient practices for the following measures: lighting and controls, HVAC and refrigeration equipment and controls, and process improvements.
- Express Efficiency Incentives: Provides prescriptive incentives to participating qualified contractors for high-efficiency equipment across a variety of end-uses: lighting, HVAC, refrigeration, food-service equipment, and office-network PC power-management software. Incentives are targeted to the contractor/supplier in an effort to stimulate the market for energy-efficient equipment and services, and are designed to cover a significant portion of the incremental cost of the high-efficiency equipment.
- Retrocommissioning (RCx): Designed to garner cost-effective energy savings and reductions in peak demand by fine-tuning energy control systems and ensuring that major energy-using equipment is operating at design efficiency levels. The RCx program is intended to reduce overall building energy consumption through low-cost/no-cost operational improvements and on-site training of building operators. A secondary goal is to guide the customer toward more far-reaching improvements that may become evident in the course of the commissioning process.
- Prescriptive Lighting: Promotes the installation of energy-efficient lighting equipment and controls in commercial and industrial customer facilities by providing financial incentives to contractors who install efficient lighting and controls.
- Distributor Incentives: Promotes the installation of energy-efficient packaged-HVAC equipment and premium motors. Provides incentives to manufacturers and distributors to encourage warehouse stocking and marketing of premium-efficiency motors and high-efficiency packaged-HVAC units. These incentives are paid per sale of energy-efficient packaged-HVAC unit and per sale of premium-efficiency motor.
- Large Public Buildings Energy Service Agreements: In this pilot program, SMUD will execute energy-service agreements with owners of large public buildings to provide and fully finance energy-efficiency upgrades. Work will be performed by implementation contractors under contract to SMUD. Financing and the scope of work will be structured to guarantee the customer a cash-neutral or cash-positive position for the duration of the payback period. SMUD will recoup all program costs from the customer. The program may be extended to other large commercial customers in the future.

Residential Programs

Residential energy-efficiency programs for existing homes are budgeted for $13.3 million, with goals of 12.7 MW of peak-load reduction and 75.8 GWh in annual energy savings.

- Shade Trees: Provides free shade trees to SMUD customers. Implemented through the community-based non-profit Sacramento Tree Foundation (STF). STF foresters review tree selection and site locations with customers, who plant the trees.
- Equipment Efficiency: Provides rebates and/or SMUD financing for qualifying (Energy Star, Consortium for Energy Efficiency, and/or other high-efficiency) efficiency improvements to homes' building shells and equipment. Improvements include central air conditioners and heat pumps, duct sealing, windows, attic and wall insulation, insulated siding, solar domestic water heaters, and cool roofs. Two new program components will likely be added in 2010: Quality Installation for new or replacement HVAC, involving at a minimum tightly sealed ducts and correct sizing; and Quality Maintenance for existing HVAC, involving duct sealing and replacement, corrections to refrigerant charge and air flow, and other HVAC-performance improvements.
- Whole-House Performance: Participating contractors use building-science principles and diagnostic equipment to evaluate the current performance of the whole house, and then recommend comprehensive improvements that will yield an optimal combination of savings and comfort for homeowners. Once the homeowner selects the improvements that fit their needs and budget, participating contractors will do the work or enlist other professionals to have the job done. In 2009, the focus has been to develop and educate the contractor base from which to launch a more comprehensive program in 2010.
- Appliance Efficiency: Provides rebates for qualifying (Energy Star or Consortium for Energy Efficiency-listed) appliances: clothes washers, dishwashers, and room air-conditioners. Included in this program are two previously separate programs. Refrigerator/Freezer Recycling provides rebates for the free pick-up and environmental recycling of old refrigerators and freezers. Pool Efficiency provides educational information to customers on the benefits of installing high-efficiency, variable-speed pumps and motors, and encourages customers to operate pool equipment during off-peak hours. Pool Efficiency also focuses on educating the pool-contractor community on practices for retrofit and new-pool installations that maximize pumping efficiency and minimize energy use and peak demand.
- Home Electronics: This program has multiple implementation components: *Education*—Educate consumers on ways to reduce usage by the increasing proliferation of electronic devices in homes that consume energy even when turned off. *Collaboration*—SMUD, collaborating with other utilities, regional and national advocacy organizations, and the U.S. EPA, will influence electronics standards-setting, and will design and deploy program and best-practices guidelines to coordinate impacts of other developing home-electronics programs. *Incentives*—SMUD has implemented an upstream OEM- and retail-incentive program that can be replicated by utilities across the nation.
- Retail Lighting: Brings a variety of Energy Star lighting products, at reduced prices, to local hardware, grocery, drug, discount, big-box, and home-improvement retailers. Implemented

through agreements with manufacturers and retailers that involve cost buy-downs, marketing, and/or advertising by SMUD and/or manufacturer and retailer partners.

- Multi-Family (Apartment and Condominium) Retrofit: This program is designed to capture some of the significant energy-savings potential in existing apartments and condominiums and their common areas not addressed by current SMUD programs. The foundation of the program is developing business relationships among the key players affecting the multi-family (MF) market segment, for the sole purpose of maximizing the efficiency of MF energy use, and offering rebates and financing to help buy down the higher cost of efficiency improvements. The program targets, builds, and fosters relationships with property managers and owners of MF rental property, owners of condominiums, property-management associations, condo-homeowners associations, vendors, and service providers.
- Residential Advisory Service: Provides on-site energy audits of homes, on-line energy audits, and telephone assistance for customers, with recommendations to reduce their homes' energy use (and bills). Recommendations include practices and home-improvement projects that will increase the energy efficiency of their dwellings.
- PowerCost Monitor (Home Energy-Use Display): Will provide residential customers an idea of how their energy use actions influence their electric bills in real time by providing an in-home, real-time, energy use display unit that customers can purchase for a discounted price and install themselves to assist them in making smart energy use choices. This program is considered a bridge program until full deployment of Automated Metering is completed over the next several years.
- Home Electricity Reports: A scientifically designed program to measure the impact of sending electricity-usage reports to residential customers. The reports compare the customer's monthly usage to that of the previous year and to 100 neighbors in similar-size homes. The reports are customized to each house and provide energy tips to assist the customer in making behavior changes that reduce their energy use.

New-Construction Programs

New construction programs are budgeted for $3.4 million, with goals of 2.2 MW of peak-load reduction and 6.8 GWh in annual energy savings.

- Residential New Construction: Provides incentives to builders to build homes that exceed the Title 24 energy-efficiency standards by 20 percent or more. A separate but integrated Solar Smart Energy Homes component provides incentives and marketing support to builders to build homes that include PV and have net electricity consumption that is 60 percent lower than typical new homes.
- Savings by Design: Provides incentives to builders and their design teams to design new commercial and industrial buildings 10-30 percent more energy efficient than required by Title 24 (or typical new construction in the case of Title 24-exempt buildings and processes).

Demand-Reduction Programs

- Peak Corp (Residential Air Conditioner Load Management): Customers volunteer to allow SMUD to install a radio-controlled cycling device on their central air conditioners, and to send a radio signal that switches or cycles off their air conditioners during an electric-system emergency.
- Voluntary Emergency Load Curtailment: Calls on commercial and industrial participants to reduce their electrical use by a pre-determined amount. There is no obligation and no penalty if the business is unable to respond to SMUD's request to reduce usage.
- Curtailment Agreements: Agreements in place with largest industrial customers to reduce usage on an on-call basis to help manage system peak loads.

Measurement and Verification Plans

In concert with its commitment to significantly ramp up energy-efficiency activities over the next decade, SMUD has established a framework to develop yearly measurement and verification (M&V) action plans. SMUD is planning M&V activities for all of its major programs, scheduled at fixed intervals (two to four years apart), with the intention of evaluating all programs on a continued cyclical basis through 2017. For methodological approaches needed to perform specific types of evaluations, SMUD will be guided by the CPUC's "California Evaluation Framework" (June 2004) and "California Energy Efficiency Evaluation Protocols" (April 2006).

SMUD is planning to allocate approximately 2% of its total energy-efficiency budget towards impact- and persistence-focused M&V studies. These studies will be conducted primarily through the use of third-party contractors, with management and oversight by SMUD's Business Planning Department.

SMUD has awarded or is in the process of awarding contracts for consultants to perform evaluations of the following programs in 2010:

Residential—

- Multi-Family Retrofit
- Appliance Efficiency
- Retail Lighting
- Solar Smart Homes

Commercial—

- Savings By Design
- Prescriptive Lighting

SACRAMENTO MUNICIPAL UTILITY DISTRICT (SMUD)

Time Period for Reporting Data: Calendar year ending 12/31/09

Sacramento Municpal Utility District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	113	113	282,690	4,240,350	1,717	$ 134,700		$ 511,367	$ 646,067
HVAC	Res Cooling	3,060	3,060	4,568,254	68,523,811	27,752	$ 1,967,300		$ 2,304,780	$ 4,272,080
Appliances	Res Dishwashers	14	14	35,380	530,700	215	$ 12,815		$ 205,802	$ 218,617
Consumer Electronics	Res Electronics	638	638	6,378,500	63,785,000	25,833	$ 1,017,623		$ 675,745	$ 1,693,368
HVAC	Res Heating			909,046	16,362,827	6,627	$ 356,600		$ 116,390	$ 472,990
Lighting	Res Lighting	5,551	5,551	43,027,700	357,129,910	144,638	$ 2,198,368		$ 1,827,264	$ 4,025,632
Pool Pump	Res Pool Pump	361	361	7,110	106,650	43	$ 3,500		$ 223	$ 3,723
Refrigeration	Res Refrigeration	583	583	4,424,550	21,185,549	8,580	$ 256,180		$ 495,776	$ 751,956
HVAC	Res Shell	66	66	211,450	4,229,000	1,713	$ 25,321		$ 6,642	$ 31,963
Water Heating	Res Water Heating	18	18	112,870	2,257,400	914	$ 58,000		$ 8,194	$ 66,194
Comprehensive	Res Comprehensive	2,100	2,100	19,050,000	135,690,000	54,954	$ 4,399,032		$ 2,090,387	$ 6,489,419
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	2,345	2,345	8,870,547	133,058,211	53,889	$ 748,886		$ 1,225,355	$ 1,974,241
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	5,033	5,033	30,015,520	120,062,079	48,625	$ 3,829,535		$ 2,655,401	$ 6,484,937
Process	Non-Res Motors	410	410	733,333	11,000,000	4,455	$ 124,521		$ 118,515	$ 243,036
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	96	96	681,515	6,815,149	2,760	$ 15,078		$ 44,206	$ 59,284
HVAC	Non-Res Shell									
Process	Non Res Process	836	836	5,509,085	55,090,846	22,312	$ 62,691		$ 267,844	$ 330,535
Comprehensive	Non Res Comprehensive	4,500	4,500	23,210,000	209,330,443	84,779	$ 1,670,969		$ 2,796,128	$ 4,467,097
Other	Other								$ 821,000	$ 821,000
SubTotal		25,724	25,724	148,027,550	1,209,397,924	489,806	$ 16,881,120		$ 16,171,020	$ 33,052,140
T&D	T&D									
Total		25,724	25,724	148,027,550	1,209,397,924	489,806	$ 16,881,120		$ 16,171,020	$ 33,052,140

EE Program Portfolio TRC Test	**2.51**

Excluding T&D

Time Period for Forecast Data: Calendar year ending 12/31/10

Sacramento Municpal Utility District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	80	80	183,664	2,754,959	1,116	$ 60,603		$ 42,845	$ 103,448
HVAC	Res Cooling	2,740	2,740	3,027,091	45,406,358	18,390	$ 2,260,738		$ 2,102,997	$ 4,363,736
Appliances	Res Dishwashers	15	15	33,857	507,856	206	$ 8,492		$ 22,584	$ 31,076
Consumer Electronics	Res Electronics	1,600	1,600	12,200,000	122,000,000	49,410	$ 1,800,000		$ 1,043,180	$ 2,843,180
HVAC	Res Heating			847,112	15,248,013	6,175	$ 414,094		$ 132,102	$ 546,196
Lighting	Res Lighting	5,900	5,900	48,000,000	398,400,000	161,352	$ 2,400,000		$ 2,408,828	$ 4,808,828
Pool Pump	Res Pool Pump	589	589							
Refrigeration	Res Refrigeration	710	710	4,960,855	19,843,420	8,037			$ 1,400,452	$ 1,400,452
HVAC	Res Shell	56	56	205,000	4,100,000	1,661	$ 20,703		$ 8,386	$ 29,089
Water Heating	Res Water Heating	9	9	110,000	2,200,000	891	$ 70,369		$ 8,908	$ 79,278
Comprehensive	Res Comprehensive	1,700	1,700	17,200,500	85,901,500	34,790	$ 2,767,500		$ 3,361,275	$ 6,128,775
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	2,220	2,220	4,017,902	60,268,536	24,409	$ 821,436		$ 1,239,034	$ 2,060,470
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	4,900	4,900	28,266,300	113,065,199	45,791	$ 2,965,406		$ 3,237,309	$ 6,202,715
Process	Non-Res Motors	150	150	800,000	12,000,000	4,860	$ 35,000		$ 53,590	$ 88,590
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	123	123	504,294	5,042,939	2,042	$ 25,097		$ 83,501	$ 108,598
HVAC	Non-Res Shell									
Process	Non Res Process	478	478	4,190,542	41,905,416	16,972	$ 107,266		$ 440,145	$ 547,411
Comprehensive	Non Res Comprehensive	3,278	3,278	17,420,962	157,119,250	63,633	$ 1,312,295		$ 2,739,040	$ 4,051,335
Other	Other								$ 983,303	$ 983,303
SubTotal		24,549	24,549	141,968,078	1,085,763,445	439,734	$ 15,069,000		$ 19,307,478	$ 34,376,478
T&D	T&D									
Total		24,549	24,549	141,968,078	1,085,763,445	439,734	$ 15,069,000		$ 19,307,478	$ 34,376,478

EE Program Portfolio TRC Test	**1.92**

Excluding T&D

CITY OF SHASTA LAKE

History and Load Data

The City incorporated in 1993 which included an electric enterprise formally known as the Shasta Dam Area Public Utility District which was established in 1945. The City is a load serving entity and distribution provider. The City owns and operates two small solar installations, the largest is 10 kilowatts and both are located on City facilities. The City provides retail electric service to customers located within the City's corporate limits, as well as certain adjacent areas and serves approximately 4,453 retail customers (meters), of which 4,100 are residential. Residential users account for approximately twenty-two percent of annual retail sales. Shasta Lake has thirteen industrial customers with retail sales representing 71 percent of total retail sales. The City's power and energy requirements are greatly influenced by residential customers, with year-to-year variations in peak demand and energy sales representative, in part, of the effect of local weather conditions on the residential class usage patterns. Peak demand was 33.7 megawatts on July 28, 2009, at 6 pm. Annual energy use is 190.1 gigawatt-hours

Overview of Shasta Lake Energy Efficiency Programs

The City of Shasta Lake manages a comprehensive energy efficiency incentive program for residential & commercial customers focusing on peak load reduction and energy conservation. For residential customers, rebates are offered for the installation of various energy efficiency measures. For commercial customers, rebates are available for upgraded lighting, HVAC equipment, and in cases where an analysis is performed rebates can be offered for additional equipment that reduces energy use and/or demand.

Residential Customer Programs:

- Energy Efficiency Hotline: A toll free line is available for customers to answer questions and provide information on energy efficiency and energy savings-related matters.
- Free Energy Audits:. On-site energy audits by Shasta Lake energy specialists are available to residential customers. Energy efficiency measures are recommended based on each audit and the city personnel follow up with additional visits to answer questions and make additional recommendations, if requested

- Rebate Program: Comprehensive technical support and incentives to facilitate installation of higher efficiency cooling and refrigeration equipment, envelope measures, appliances, and lighting for residential customers.
- Weatherization Incentives: Shasta Lake provides financial incentives for homeowners who invest in weatherization measures.

Commercial/Industrial Customer, Schools and Public Facilities Programs:

- Free Energy Audits: Shasta Lake offers free, on-site energy audits for both commercial and industrial customers. Energy efficiency recommendations and follow-up visits support implementation of recommended energy efficiency measures. Rebates are available for energy efficiency upgrades identified in these audits. Verification services, to ensure appropriate installation of recommended measures is also provided.

Shasta Lake Demand Reduction Programs:

For the past several months, Tantalus remote-read meters have been rolled out to nearly all customers. It is anticipated that this remote meter reading system would allow the City to implement an interruptible load program, time of use metering and other such programs.

Performance Results for 2008-2009

Shasta Lake's AB2021 Energy Reduction Target for FY07-FY09 was 157,000 kWh annually. In FY09, they exceeded their annual goal by 121%, with a total net energy reduction of 285,755 kWh.

Shasta Lake's AB2021 Demand Reduction Target for FY07-FY09 was 14 kW annually. In FY09, they surpassed their annual goal, with a total demand reduction of 71 kW.

Shasta Lake participated in the Keep Your Cool (KYC) program implemented through ESG and Humitech in 2009 as a pilot for utilities in Northern California. The program offered commercial customers, typically small to mid-sized businesses, with free upgrades to their refrigeration equipment, including door gaskets, strip curtains, and auto door closers. The KYC program contributed highly cost-effective results for the utilities who participated. The pilot (Phase I) was implemented over several months; Shasta Lake customers were serviced in May 2009 and the 8 projects contributed net savings of 175,491 kWh and 20.06 kW in FY09.

2009-2010 Forecast

In 2009-2010, Shasta Lake is forecasted to exceed their AB2021 Energy and Demand Reduction Targets. They will offer residential and commercial rebates and participate in another round of KYC projects. Their net annual kWh reduction forecast for FY10 is 38% greater than their annual energy reduction goal. Their expected participation in Phase II (which occurred in Q4 2009) will contribute net savings of 49,433 kWh and 6.02 kW in FY10. The positive impact of the KYC program on program cost effectiveness can be seen in both the FY09 results (TRC 1.83) and the FY10 forecast (TRC 1.76).

Shasta Lake Evaluation, Measurement and Verification for 2008/2009

Because of its performance in 2007/2008 which produced substantially less energy savings than its AB2021 target, Shasta Lake did not conduct a study of its programs for that period and instead focused on working towards implementing programs that achieved the energy savings goals that it adopted in 2007. The process to hire a firm to perform an EM&V study for the 2008-2009 performance period is currently underway and is expected to be complete by early Spring of 2010.

Update to Annual Energy Savings Targets for 2011-2020

A recent assessment of energy savings potential in Shasta Lake conducted by Summit Blue indicated that an appropriate 10 year goal (2011-2020) for their energy-efficiency programs would be 7,719 MWH. Taking into account current economic conditions and the demographics of the City, staff has decided to target 300 MWH per year over the next three years as a start towards that target.

CITY OF SHASTA LAKE

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Shasta Lake		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	2,424	24,240	13	$ 750		$ 766	$ 1,516
HVAC	Res Cooling	13	10	10,252	179,539	111	$ 7,560		$ 8,427	$ 15,987
Appliances	Res Dishwashers			726	9,438	5	$ 275		$ 304	$ 579
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	3		2,101	18,907	10	$ 546		$ 527	$ 1,073
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	1	1	3,840	69,120	37	$ 1,700		$ 2,186	$ 3,886
HVAC	Res Shell	11	11	12,936	227,335	128	$ 10,218		$ 7,965	$ 18,183
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	22	19	77,985	1,247,757	691	$ 5,743		$ 4,181	$ 9,924
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	20	20	175,492	702,746	370		$ 10,496	$ 15,994	$ 26,490
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		71	62	285,755	2,479,081	1,368	$ 26,792	$ 10,496	$ 40,350	$ 77,638
T&D	T&D									
Total		71	62	285,755	2,479,081	1,368	$ 26,792	$ 10,496	$ 40,350	$ 77,638

EE Program Portfolio TRC Test	**1.83**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Shasta Lake		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	2,497	24,967	14	$ 773		$ 502	$ 1,275
HVAC	Res Cooling	14	10	10,559	184,925	115	$ 7,787		$ 3,719	$ 11,506
Appliances	Res Dishwashers			748	9,721	5	$ 283		$ 195	$ 479
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	2		1,576	14,180	8	$ 410		$ 285	$ 695
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	1	1	3,955	71,194	39	$ 1,751		$ 1,432	$ 3,183
HVAC	Res Shell	12	12	13,324	234,155	132	$ 10,525		$ 4,709	$ 15,233
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	27	22	93,582	1,497,308	830	$ 6,892		$ 30,110	$ 37,002
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	6	6	52,648	210,824	111		$ 3,149	$ 4,240	$ 7,388
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		62	52	178,888	2,247,274	1,253	$ 28,419	$ 3,149	$ 45,192	$ 76,760
T&D	T&D									
Total		62	52	178,888	2,247,274	1,253	$ 28,419	$ 3,149	$ 45,192	$ 76,760

EE Program Portfolio TRC Test	**1.76**

Excluding T&D

SILICON VALLEY POWER

SILICON VALLEY POWER, CITY OF SANTA CLARA (SVP)

- Established in 1896
- 51,240 customers; 84.8% are residential customers but only 8.6% of power sales are residential. 87.6% of sales are to the 1,925 industrial customers. SVP projects an average increase of 0.68% annually in sales.
- Peak demand: 489.9 megawatts in 2008; 75.9% load factor.
- Annual energy use: 2,858 gigawatt-hours in 2008.
- SVP owns power generation facilities. Has invested in joint ventures that produce electric power and trades on the open market. 30.1% of its power comes from geothermal, wind, and other eligible renewable sources.
- The City of Santa Clara employs 144 in the Electric Department (SVP).
- SVP mission: To ensure the citizens, organizations and businesses of Santa Clara a low-cost, reliable and stable source of electric power.

SVP Energy Efficiency Program Highlights:

SVP's Public Benefit Programs are separated into residential and business programs, with the majority of funding toward the business sector since that is the customer class that represents 90.6% of the sales. Total program expenditures are about $6 million per year. Savings of more than 165 million kilowatt hours were achieved in the first year of the program in 1998. Total program cost for energy efficiency programs in fiscal year 2008-2009 was $6,601,078 ($7,631,240 on all public benefit programs), resulting in 2,854 kW net demand reduction and 39,627,773 MWh net reductions. Since 1998, total program costs for all public benefit programs were $56,548,094, resulting in over 241.6 million kWh in cumulative first year savings.

SVP's goals and objectives for implementation of energy efficiency programs include:

- cost-effective programs to lower energy use
- programs that create value to for the community and meet all applicable legal requirements.
- programs that assist Divisions and City Departments in achieving optimal energy efficiency at City facilities and assist in implementing new energy related technologies for the benefit of the City and community

- programs to support renewable power generation that increase resource diversity and minimize adverse environmental impacts from electric generation and operation of the electric system.
- programs that support emerging technologies
- programs that assist low-income residents in paying their electric bills and installing energy efficient appliances and other measures.
- determination of the best energy programs to offer Santa Clara customers by collecting input from community organizations, businesses and other City departments.

Current Commercial Customer Programs:

- Business Audits: Free energy efficiency audits to business customers.
- Rebates: A comprehensive portfolio of energy efficiency rebates (for purchase and installation of energy efficient lighting, motors, air conditioners, motion sensors, programmable thermostats, new construction, and customized energy-efficiency installations).
- Compressed Air Management Program (CAMP): Provides assistance to large commercial and industrial facilities to assist them in upgrading poorly functioning and inefficient compressed air systems.
- Retrocommissioning (RCx): Provides commissioning and retro commissioning services to data centers, commercial buildings, educational facilities, and hotels.
- "Keep Your Cool" Program: Provides service through a third party to repair or replace broken refrigeration door gaskets and to install new strip curtains for businesses in Santa Clara.
- Express Refrigeration Program: This program will deliver energy efficiency measures such as refrigeration controls, motors, and LED lights at no cost to customers with commercial refrigeration equipment. The target market will be small businesses such as mini markets and restaurants.
- Data Center Optimization Program (DCOP): This program will target small data centers under 10,000 square feet within existing office or other buildings. The program will deliver an assessment of all electric end uses such as facility site infrastructure loads (cooling, fans, pumps, lighting, and uninterruptible power supplies), network equipment, storage, and servers. The program scope includes comprehensive facility assessments, reports, project management service during implementation, financial incentives for energy reductions, and savings verification services.
- Business Energy Information: Management information on energy usage through 15-minute interval meters, Itron's 'EEM Suite' software, training, and other sources.
- Energy Innovation Program: This program encourages businesses to demonstrate new products and product applications not yet commercially viable in today's marketplace, install energy efficient technologies not generally known or widely accepted, yet show potential for successful market growth, successfully apply energy efficiency solutions in new ways, or introduce energy efficiency into industries or businesses that are resistant to adopting new technologies or practices.

- LEED Rebate for Energy Efficient Building Design: If your building meets LEED criteria and exceeds Title 24 energy requirements by at least 10 percent, you can get a rebate of up to $47,500.
- Business Solar Photovoltaic Rebate: Provides financial incentives for the installation of solar systems at business sites. Businesses can receive rebates starting at $3.00 per output watt up to a total of $300,000 per customer for systems up to 100 kW. The former rebate was $2.50 per watt for a maximum of $125,000 or a 50kW system. Businesses installing systems between 100kW and 1 MW are eligible for a Performance Based Incentive of $0.40 per kWh. Businesses are required to complete an energy audit in order to receive a rebate, as is the case with the statewide California Solar Initiative.

Current Residential Customer Programs:

- Residential In-Home Energy Audits and Education: Through this technical support program SVP staff provides on-site audit analysis, energy efficiency recommendations and distributes energy saving items (four compact fluorescent lights, "lime lites," and programmable thermostats). The Solar Explorer and the SVP information booth participate in major city events, providing education on energy efficiency and solar electric generation systems. In collaboration with the Santa Clara Police Department, compact fluorescent light bulbs (CFL's) and educational materials are distributed to residents participating in the National “Night Out” Program in August.
- Residential Appliance Rebates: Rebates encourage residents to purchase and install ENERGY STAR® labeled refrigerators or window AC units and recycle their old units.
- Energy Star Ceiling Fan Rebates: Provides a rebate of $35 per fan (up to three fans per residence) for the installation of Energy Star ceiling fans.
- Energy Efficient Pool Pump Rebates: Provides a rebate to replace an existing pool pump and motor with a new high efficiency two-speed or a new high efficiency variable speed motor.
- Solar Attic Fan Rebates: This program encourages customers to cool the attic space with a solar attic fan. By reducing the attic temperature, the insulation is more effective at stopping heat from entering the home, thereby reducing the need to cool the living space.
- Residential Attic Insulation Rebates: These rebates encourage the installation of attic insulation by providing incentives for both single-family and multi-family units. All homes are inspected to ensure installation has been completed.
- Neighborhood Solar Program: SVP customers have the option to pay into a special fund to support the installation of solar electric systems at non-profit community buildings. The third installation will be located at the Bill Wilson Center and is scheduled for completion in April 2009. Industrial customers provided $10,000 of the funding for this installation.
- SVP Plug-ins Catalog: Energy-efficient product catalogs are delivered four times per year to residents. Monthly promotions are available to customers who order on the web. The printing of catalogs and fulfillment of customer orders is done by Energy Federation, Inc.
- Rate Assistance Program: Qualified low-income customers receive a discount on their electric bill (low-income program).

- Refrigerator & Room Air Conditioner Recycling: Rebate for recycling old refrigerators and room air conditioners.
- Residential Solar Photovoltaic Rebate*:* Provides significant financial incentive to residential customers for installation of solar systems. Customers receiving the rebate are required to also complete an energy audit, as is the case with the statewide California Solar Initiative. The rebate is currently at $4.50 per watt, up to a maximum system size of 10 kW.

Current Community Programs:

- Public Facilities' Energy Efficiency Program: SVP provides technical assistance and financial incentives for the expansion, remodel, and new construction of City of Santa Clara buildings. Included in this program are higher levels of rebates for qualifying equipment, energy management assistance, and a small budget for retro commissioning.

Time Period for Reporting Data: Fiscal Year ending 6/30/09.

Proposed Energy Efficiency Programs and Services: **(for 2009-2010)**

(Continuation of Existing Programs):

Commercial Customer Program:

- Small Business Efficiency Services Program
- Business Audits
- Business Energy Information
- Business Rebates
- Compressed Air Management Program (CAMP)
- Data Center Optimization Program (DCOP)
- Energy Innovation Program
- LEED Rebate for Energy Efficient Building Design
- Business Solar Photovoltaic Rebate

Residential Customer Programs:

- Residential In-Home Energy Audits, Education, and Hot Line
- Residential Appliance Rebates
- Residential Insulation Rebates
- Neighborhood Solar Program
- SVP Plug-ins Catalog
- Rate Assistance Program
- Low-Income Refrigerator Replacements
- Refrigerator & Room Air Conditioner Recycling

Community Programs

- Public Facilities' Energy Efficiency Program

(Modifications to Existing Energy Efficiency Programs and New Programs)

Business Customer Programs:

- EnergySmart Program: This program will incorporate the measures that were previously funded under the "Keep Your Cool" and "Express Refrigeration" programs when those programs expire in late 2009. The new program will be managed by a single contractor to provide a more seamless interaction with the customer rather than dealing with separate programs managed by two contractors.
- Laboratory Energy Management Program: This program focuses on the unique needs of energy-intensive laboratory space. The program provides recommendations for energy savings, technical analysis and rebates for energy efficiency retrofit projects.
- Enhanced Automation Initiative: This program is focused on hardware and software upgrades to building controls systems to bring buildings up to optimum performance.
- Vending Miser Installation Program: This is a direct install program to install Vending Miser occupancy sensors on cold drink machines to reduce energy consumption by 36-56% when the area is not occupied for periods of time.
- Retrocommissioning (RCx): This program has been modified to include a cost-sharing component for the detailed retro commissioning study. The initial scoping study will remain free to the customer.

Residential Customer Programs*:*

- Low-Income Refrigerator Replacements: Replaces old, energy-wasting refrigerators for eligible low-income residents with new, energy-saving appliances. SVP has offered this popular program in the past and will bring it back in FY 2009-2010.
- Expanded Appliance Rebates: SVP will add rebates for Energy Star electric water heaters once they become available in the marketplace. Availability is projected at Fall 2009.

Energy Efficiency Conservation Block Grant (EECBG) Programs:

The City of Santa Clara was awarded $1,180,900 in stimulus funds under the EECBG funding opportunity. These programs will be administered under the municipal electric utility, Silicon Valley Power, and will be spent on the following programs:

- Retrocommissioning of City Facilities
- LED Pedestrian Signal Retrofits
- A Photovoltaic System on a park facility at Henry Schmidt Park
- LED Lighting retrofits at various locations around the City of Santa Clara
- A Low Income Weatherization Program

Demand Reduction:

SVP has a load factor of 75.9%, primarily due to a large percentage of sales to large high tech firms that operate three daily shifts daily, 365 days per year. Because of the relatively mild climate, residential customers often do not have air conditioning, and do not have the peak in energy usage that occurs in other parts of the state.

Due to this very high load factor, SVP's demand response program is a voluntary load-shedding program called the "Power Reduction Pool". Through a voluntary arrangement, participating customers reduce their load by at least 200 kW during system emergencies. The communication network of customers and SVP staff for these shutdowns is tested at least once per year. In addition, one industrial customer is on an interruptible rate. This customer is interrupted for both economic and system emergency conditions.

Evaluation, Measurement & Verification (EM&V):

Silicon Valley Power contracted with Summit Blue Consulting, LLC to create an EM&V plan, which was delivered in Fall 2008. Resulting from that plan, SVP contracted with Summit Blue to perform the evaluation of its FY 2007-2008 energy efficiency programs, which was completed in January 2009. Summit Blue is currently evaluating SVP's FY 2008-2009 energy efficiency programs. Results of this evaluation should be available in February 2010. While performing the evaluation, Summit Blue Consulting identified a data entry error where a demand savings was entered for a single air side economizer project. SVP corrected this error in its database and the corrected information is reflected in the tables below.

SILICON VALLEY POWER

Time Period for Reporting Data: Fiscal Year ending 6/30/09

Silicon Valley Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	7	7	16,016	160,160	89	$ 7,000		$ 220	$ 7,220
HVAC	Res Cooling	8	1	12,650	134,675	78	$ 9,110	$ 259	$ 27,194	$ 36,563
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics			175	701		$ 100		$ 2,511	$ 2,611
HVAC	Res Heating									
Lighting	Res Lighting	172	42	139,133	1,250,885	668	$ 581	$ 10,100	$ 128,431	$ 139,112
Pool Pump	Res Pool Pump	4	2	5,600	56,000	31	$ 1,000		$ 1,892	$ 2,892
Refrigeration	Res Refrigeration	122	122	850,969	14,542,698	7,879	$ 30,660		$ 103,468	$ 134,128
HVAC	Res Shell	9	9	6,763	135,264	76	$ 13,225		$ 9,181	$ 22,406
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking			1,971	23,654	12	$ 300		$ 66	$ 366
HVAC	Non-Res Cooling	514	42	21,367,619	422,819,049	235,121	$ 1,758,475		$ 1,119,456	$ 2,877,931
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	677	641	2,875,402	36,793,202	20,366	$ 233,908	$ 695	$ 351,770	$ 586,373
Process	Non-Res Motors	1	1	3,765,741	56,486,114	30,039	$ 488,549		$ 161,138	$ 649,687
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	973	960	3,033,578	59,661,969	31,498	$ 61,521	$ 374,532	$ 143,995	$ 580,048
HVAC	Non-Res Shell									
Process	Non Res Process	269	269	6,025,835	101,359,518	53,698	$ 630,337		$ 236,529	$ 866,865
Comprehensive	Non Res Comprehensive	86	86	1,113,830	20,769,456	11,161	$ 335,018		$ 55,485	$ 390,503
Other	Other	12	12	412,491	1,978,397	1,046	$ 55,690	$ 39,793	$ 208,888	$ 304,371
SubTotal		2,854	2,194	39,627,773	716,171,743	391,764	$ 3,625,475	$ 425,379	$ 2,550,224	$ 6,601,078
T&D	T&D									
Total		2,854	2,194	39,627,773	716,171,743	391,764	$ 3,625,475	$ 425,379	$ 2,550,224	$ 6,601,078

EE Program Portfolio TRC Test	**5.60**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/10

Silicon Valley Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	4	4	10,410	104,104	58	$ 4,550		$ 548	$ 5,098
HVAC	Res Cooling	8	1	12,650	134,675	78	$ 9,110	$ 259	$ 709	$ 10,079
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	34	8	27,827	250,177	134	$ 116	$ 2,020	$ 1,317	$ 3,454
Pool Pump	Res Pool Pump	4	2	5,600	56,000	31	$ 1,000		$ 295	$ 1,295
Refrigeration	Res Refrigeration	122	122	850,969	14,542,698	7,879	$ 30,660		$ 76,582	$ 107,242
HVAC	Res Shell	9	9	6,763	135,264	76	$ 13,225		$ 712	$ 13,937
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking			1,971	23,654	12	$ 300		$ 125	$ 425
HVAC	Non-Res Cooling	309	25	12,820,571	253,691,429	141,073	$ 1,055,085		$ 1,335,940	$ 2,391,025
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	677	641	2,875,402	36,793,202	20,366	$ 233,908	$ 695	$ 193,753	$ 428,357
Process	Non-Res Motors	1	1	3,765,741	56,486,114	30,039	$ 488,549		$ 297,456	$ 786,005
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	827	816	2,578,541	50,712,674	26,773	$ 52,293	$ 318,352	$ 267,053	$ 637,698
HVAC	Non-Res Shell									
Process	Non Res Process	135	135	3,012,918	50,679,759	26,849	$ 315,168		$ 266,880	$ 582,048
Comprehensive	Non Res Comprehensive	77	77	1,002,447	18,692,510	10,044	$ 301,517		$ 98,435	$ 399,951
Other	Other	12	12	412,491	1,978,397	1,046	$ 55,690	$ 39,793	$ 10,418	$ 105,901
SubTotal		2,219	1,854	27,384,301	484,280,659	264,460	$ 2,561,172	$ 361,119	$ 2,550,224	$ 5,472,515
T&D	T&D									
Total		2,219	1,854	27,384,301	484,280,659	264,460	$ 2,561,172	$ 361,119	$ 2,550,224	$ 5,472,515

EE Program Portfolio TRC Test	**4.39**

Excluding T&D

TRINITY PUBLIC UTILITY DISTRICT

- Created in 1982 as a result of the Trinity River Division Act of 1955, in which Congress provided mitigation for the economic devastation to the local economy resulting from the Act.
- The Congressional mitigation provides the TPUD enough low cost and clean hydroelectric power to meet its entire load for the next several decades, but forbids the TPUD from selling any of the energy it does not need to meet load.
- Serves small economically depressed area in northern California consisting of nearly 7,000 meters in mountainous terrain covering an area the size of Vermont.
- TPUD is comprised of nine small substations serving 560 miles of distribution line.
- TPUD has a peak coincident demand of less than 20 megawatts, which may occur in winter or summer.
- More than 60 percent of TPUD's load is residential and only two customers have a peak demand of more than 150 kilowatts.

TPUD Energy Efficiency Program Highlights

Since FY 2000 through FY 2009 TPUD public benefits expenditures on energy efficiency total approximately $321,000 and have resulted in kilowatt-hours savings of more than 157,000 kilowatt-hours.

Current TPUD Energy Efficiency Programs:

- Weatherization Program: Provides incentives for installation of cost-effective weatherization measures including insulation and energy efficient windows in electrically heated homes for all new buildings and major remodels, about 30 per year.

Proposed TPUD Energy Efficiency Programs and Services: **(for 2009-10)**

- Maintain existing programs at current levels.

TPUD Demand Reduction Programs:

TPUD does not have much of an air conditioning load and measures the demand of only one of its customers, none of the TPUD's power costs is dependent on demand and therefore the TPUD has no plans to implement a demand reduction program.

TRINITY PUBLIC UTILITY DISTRICT

Time Period for Reporting Data: Fiscal year ending 6/30/2009

Trinity Public Utility District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell			14,828	192,764	117	$ 32,133			$ 32,133
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal				14,828	192,764	117	$ 32,133			$ 32,133
T&D	T&D									
Total				14,828	192,764	117	$ 32,133			$ 32,133

EE Program Portfolio TRC Test	0.02

Excluding T&D

Time Period for Forecast Data: Fiscal year ending 6/30/2010

Trinity Public Utility District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell			14,125	183,625	112	$ 35,500			$ 35,500
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting									
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal				14,125	183,625	112	$ 35,500			$ 35,500
T&D	T&D									
Total				14,125	183,625	112	$ 35,500			$ 35,500

EE Program Portfolio TRC Test	0.02

Excluding T&D

TRUCKEE DONNER PUBLIC UTILITY DISTRICT

- Established in 1927
- 13,154 customers, 88 percent are residential
- TDPUD projects an average growth rate of 1 percent per year, for the next 10 years
- 2009 Peak demand – 35.9 megawatts (winter peaking)
- 2009 Energy Use – 146.9 gigawatt-hours

TDPUD Energy Efficiency Program Highlights

- In 2009, the Truckee Donner Public Utility District (TDPUD) continued to make significant investments in our Public Benefits and energy efficiency programs. This includes increasing Public Benefit and energy efficiency spending to ~4.5% of gross electric sales in calendar year 2009 with a calendar year 2010 budget of ~4.5% of gross electric sales. In 2009, the TDPUD's energy efficiency results included a first year energy savings of almost 2.5% of gross electric sales with a TRC of over 5.
- In 2009, the TDPUD developed 7 new energy efficiency programs (for a total of 16) that expanded our offerings to businesses and income qualified customers and continued to serve our residential base. The TDPUD targeted the most cost-effective programs and partnered with local agencies, businesses, and community groups to effectively implement programs. The TDPUD is seeing increasing acceptance of the economic and community benefits of energy efficiency investments.
- The economic crisis during 2009 had a major impact on our energy efficiency programs as customers struggled to make ends meet. On the positive side, the TDPUD's 'save energy, save money' message had much more traction with our customers. However, the customer's ability to make the investments necessary to implement cost effective energy efficiency projects was diminished. This was particularly true with our commercial and small business customers. To address this, the TDPUD focused on direct-install and give-a-way programs. The American Recovery and Reinvestment Act of 2009 (ARRA) was one opportunity to address the economic crisis but, due to the design and implementation of the stimulus money, the TDPUD was precluded from participating in a meaningful way. This was due to the fact that the majority of the money was distributed to cities and counties (of which the TDPUD is neither) and the competitive opportunities through the California Energy Commission's State Energy Program and the Department of Energy were not designed for smaller utilities grant applications.
- The TDPUD updated our 10-year energy efficiency targets in early 2010 as part of the SB1037/AB 2021 requirement. For the period from 2011 through 2020, the new energy savings target is: 19,880 MWh (~1.1% per year). This is a significant increase from the first energy

savings targets, established in 2007, of 10,1014MWh (~.67% per year). The new aggressive targets take into account the TDPUD's strong past energy efficiency results. However, the new targets also recognize that past results were heavily influenced by lighting programs which the TDPUD is beginning to saturate and which, unfortunately, are being unfairly discounted by the regulatory bodies.

2009 Highlights Include:

- Implemented programs with the potential to reduce electric usage by almost 2.5% in the first year. The District was able to achieve this performance through a combination of cost-effective measures (mostly lighting), effective program management, and leveraging the District's position within the community.
- Created an Evaluation, Measurement, & Verification (EM&V) Plan for calendar year 2009 programs and completed the final EM&V report within 2-months of calendar year 2009 end. The EM&V report concluded: Net Annual kWh Savings of 3,575,636 kWh, Net Lifecycle kWh Savings of 34,528,706 kWh, Net Peak kW Savings of 898 kW, and a TRC of 5.06.
- Effectively delivered programs for a cost of less than one quarter of the District's power purchase costs and a fraction of the customer's rate.
- Developed a new income qualified program, Energy Saving Program (ESP), targeting residential energy efficiency and weatherization measures. This innovative new program provided a one-time bill credit for the customers largest bill in the last 12-months (up to $200) but also required that the customer participate in a free energy survey of their home and that they agree to install energy conservation measures provided for free at the time of the survey (CFL's, piping/water heater insulation, door sweeps, etc.). To implement the program, the TDPUD partnered with a local non-profit (Family Resource Center) to do the outreach and qualification for the program and worked with the Sierra Green Building Association (SIGBA) to conduct the residential energy surveys. ESP was very successful in providing immediate assistance during the economic crisis, enabled the customer to reduce energy usage over time, and strengthened the TDPUD's relationship with our low-income customers and the overall community.
- Significant investments in community outreach, communications, and marketing are tapping increasing interest in energy efficiency programs. As an example, the TDPUD's recent LED (Light Emitting Diode) Holiday Light Program achieved ~6 percent customer participation over a 4-week period and all of the customers came to the TDPUD office where they were educated, provided with free CFL's, and given information on other energy efficiency opportunities.

2009 Commercial Customer Programs

- 'Keep Your Cool' Commercial Refrigeration Program: This direct-install program was developed by the Northern California Power Agency (NCPA) for their member utilities and targets cost-effective commercial refrigeration measures (door gaskets and closers). This program was oversubscribed in the first-round and the TDPUD added additional budget to this program in 2009 to meet robust customer demand.

- Commercial LED Exit Sign Retrofit Program: This direct-install program was developed by the TDPUD to retrofit existing incandescent and fluorescent exit signs using high-efficiency LED exit sign retrofit kits. The combination of low retrofit cost and ease of installation created a very cost effective program.
- Commercial Energy Audits: TDPUD offers free on-site energy audits conducted by a TDPUD Energy Specialist for commercial customers that provide specific recommendations on cost-effective energy improvements to manage and reduce energy use and load.
- Commercial Energy Conservation Rebate Program: TDPUD provides a comprehensive commercial energy efficiency incentive program; focusing on peak load reduction and energy savings. Generous rebates and technical support are available to commercial customers to promote the installation of energy efficiency measures. This includes an appliance efficiency program for clothes washers, dishwashers and refrigerators; a building efficiency program that includes building envelope and forced-air distribution system leak testing and mitigation; a lighting efficiency program that includes any and all high efficiency lighting measures; space heating system efficiency program including ground source heat pumps and a water heating efficiency program including the purchase of energy efficient electric water heaters and solar water heater tanks.
- Solar PV Program: TDPUD offers financial incentives to commercial customers who incorporate solar PV technologies into their businesses (SB-1). This program is fully subscribed into 2011.

2009 Business Partnership Programs (Green Partners)

- Retail: TDPUD encourage restaurants to install energy-efficient lighting and other energy efficiency measures. The District also works with and encourages local hardware and grocery stores to market, sell and install energy-efficient products and services.
- Restaurant: Encourage restaurants to install energy-efficient lighting, cooking, dishwashing, and heating, ventilation and air conditioning equipment.
- Hospitality: Encourage hotels, motels, and resorts to implement LEED design principles and energy-efficient lighting, controls, HVAC, water heating, pool/spa, restaurant, renewable energy and green building technologies.

2009 Residential Customer Programs

- Developed a new income qualified program, Energy Saving Program (ESP), targeting residential energy efficiency and weatherization measures (see 2009 Highlights above).
- Residential Green Partners: This new 2009 program was focused primarily on screw-in lighting with a goal to determine which types of lighting (beyond standard spiral 60-watt equivalent CFL's) are used most in our community and to provide free samples of this lighting for our customers. Based on data from over 300 customers and over 3000 screw-in lights (over 20 types ranging from can lights to globes to flame tips to outdoor lights to dimmables). Based on the data collected, the TDPUD is now handing out, in addition to 12-packs of 60-watt equivalent CFL's, the following lights: 40-watt equivalent globes (G25's), 50-watt equivalent R20's, 65-watt equivalent floods (R30's), 65-watt equivalent dimmable floods (DR30's), 90-watt equivalent

outdoor floods (PAR30's), and 100-watt equivalent CFL's. This program is in addition to the rebate program that the TDPUD has for high-efficiency lighting.

- Portable/Take Home Energy Meters: Using the 'Kill-A-Watt' portable energy meters, this new 2009 program allows customers to sign out a watt meter for a 2-week period to measure the energy use of their residential plug loads (from refrigerators to electronics). The TDPUD then helps the customer understand the data and identify cost-effective energy efficiency opportunities.
- Residential Energy Audits: TDPUD offers free on-site energy audits, conducted by a TDPUD Energy Specialist, that provide specific recommendations on cost-effective energy improvements to manage and reduce energy load and provided savings.
- Residential Energy Conservation Rebate Program: TDPUD provides a comprehensive residential energy efficiency incentive program, focusing on peak load reduction and energy savings. Generous rebates and technical support are available to residential customers to promote the installation of energy efficiency measures. This includes an appliance efficiency program for clothes washers, dishwashers and refrigerators; building efficiency program includes building envelope and forced-air distribution system leak testing and mitigation; residential CFL's efficiency program including a multi-family unit CFL light bulb give away; space heating system efficiency program includes ground source heat pumps and the water heating efficiency program includes the purchase of energy efficient electric water heaters and solar water heater tanks.
- Low-Income Weatherization: In addition to the new ESP program described above in the 2009 highlights, the TDPUD provides home energy weatherization services to low-income residential customers along with targeting this customer base for lighting and other give-a-ways by working with local non-profits and agencies.
- Solar PV Program: TDPUD offers financial incentives to residential customers who incorporate solar PV technologies into their homes (SB-1). This program is fully subscribed into 2011.

2009 Community Programs

- Energy Conservation & Efficiency Workshops: TDPUD staff offered numerous energy conservation and efficiency seminars and workshops in 2009.
- Million CFL Program: The Million CFL program is a 10-year program starting in 2008 designed to provide incentives and CFL give-a-ways that will result in significant lighting efficiency savings. All CFL give-a-ways are done face-to-face allowing for education of the customer and promotion of other programs.
- LED Holiday Light Swap Program: The District began an LED (light emitting diode) Holiday Light swap program in 2007. The program involves giving District customers up to three strands of LED holiday lights in exchange for their old inefficient holiday lighting. In 2009, this cost-effective program served ~6% of our customer base in a 4-week period. In additional, all of these customers visited our Conservation Department to participate in the program where the TDPUD educated them on the many other energy savings opportunities and handed out free CFL's.

- Green Building Education/Installer: TDPUD has partnered with the local Sierra Green Building Association and the Town of Truckee Green Building Committee to design and implement green building education and training programs for the Truckee-Tahoe communities**.**
- Green Buildings Tour: TDPUD works with the Sierra Green Building Association and local groups to provide tours of buildings in the community that incorporate green building design features**.**

2009 Education Programs - Public Schools & Community:

- Energy Education: A TDPUD personnel gives presentations on energy topics to local schools each year.
- "Living Wise" Resource Efficiency Program: TDPUD collaborates with the 6th grade staff at the local middle school to provide the curriculum and resources for the "Living Wise" Resource Efficiency program.
- Green Building Symposium: TDPUD helps organize and conducts a presentation at the Truckee Home Show's Green Building Symposium.

2009 TDPUD Website

The TDPUD continues to improve our website and conservation/energy efficiency pages that are an on-line resources to our customers regarding programs, rebates, application information, and local resources. The TDPUD is going to upgrade its website in 2010 with a Power of Conservation focus and an on-line energy efficiency competition. There will be many new enhancements added to the website that will go a long way in promoting energy efficiency, conservation and renewables.

2009 TDPUD Demand Reduction Programs

The TDPUD does not currently have any demand reduction programs in place since there is very little air conditioning load and the TDPUD high demand time is winter. However, many of our energy efficiency programs address our unique load profile.

2009 TDPUD Water Conservation Programs:

The TDPUD serves both water and electric power services to our customers. In fact, the TDPUD's largest electric customer is the TDPUD Water Department and we fully understand the links between water conservation and energy savings for both ourselves and our customers. Current water conservation programs include:

- TDPUD Water Wise Demonstration Garden: TDPUD began installing residential water meters in 2009 and will begin billing water by usage in 2010. For many customers, water usage is driven by landscaping and irrigation. To help our customers manage their irrigation use, TDPUD developed a water wise demonstration garden at our main headquarters to educate our customers on techniques to maintain beautiful landscaping and save water. The garden includes almost 100 native and drought tolerant plants along replacing our traditional lawn with a variety of native bunch grasses that can use 80% less water.

- Commercial Water Conservation Rebate Program: TDPUD offers rebates to commercial customers for the installation of water-saving measures including water-efficient clothes washers. Additional water-efficient investments including low-flush toilets; waterless urinals and other water saving devices may soon be eligible for this rebate.
- Residential Water Conservation Rebate Program: TDPUD offers financial rebates to residential customers for the installation of water-saving measures including water-efficient clothes washers. TDPUD also hands out for free low-flow showerheads and sink aerators. New for 2009 was a Customer Leak Repair Rebate Program that incents customers to repair leaks on the customer-side of the meter. Additional water-efficient investments including low-flush toilets and other water saving devices will soon be eligible for this rebate.

Landscape Water Conservation Workshops: TDPUD partnered with local nurseries to conduct landscape water conservation workshops for the community.

TRUCKEE DONNER PUBLIC UTILITY DISTRICT

Time Period for Reporting Data: Calendar year ending 12/31/2009

Truckee Donner Public Utility District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	23	23	54,622	546,224	302	$ 23,883		$ 3,700	$ 27,584
HVAC	Res Cooling									
Appliances	Res Dishwashers	3	3	8,892	115,596	64	$ 15,180		$ 798	$ 15,978
Cons Elect's	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	2,795	491	1,757,506	15,082,697	8,052	$ 97,860		$ 104,403	$ 202,263
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	9	9	57,362	1,032,516	560	$ 22,407		$ 3,732	$ 26,139
HVAC	Res Shell	9	9	3,611	63,988	36	$ 5,932		$ 660	$ 6,591
Water Heating	Res Water Heating	25	25	68,973	794,600	434	$ 7,875		$ 15,503	$ 23,378
Comprehen	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	337	337	1,559,519	16,371,876	9,054	$ 99,181		$ 89,234	$ 188,415
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	8		65,151	521,210	275	$ 46,150		$ 40,865	$ 87,015
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehen	Non Res Comprehensive									
Other	Other									
SubTotal		3,210	898	3,575,636	34,528,706	18,776	$ 318,467		$ 258,896	$ 577,363
T&D	T&D									
Total		3,210	898	3,575,636	34,528,706	18,776	$ 318,467		$ 258,896	$ 577,363

EE Program Portfolio TRC Test	**5.06**

Excluding T&D

Time Period for Forecast Data: Calendar year ending 12/31/2010

Truckee Donner Public Utility District		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	19	19	45,760	457,600	253	$ 20,240		$ 3,640	$ 23,880
HVAC	Res Cooling			120	3,000	2	$ 3,000			$ 3,000
Appliances	Res Dishwashers	3	4	8,640	112,320	62	$ 15,180		$ 917	$ 16,097
Cons Elect's	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	2,250	496	1,653,183	14,654,517	7,823	$ 84,454		$ 104,403	$ 188,857
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	9	9	54,306	977,508	530	$ 23,115		$ 3,674	$ 26,789
HVAC	Res Shell	18	18	6,831	113,467	64	$ 12,802		$ 660	$ 13,461
Water Heating	Res Water Heating	54	54	71,495	1,072,425	604	$ 17,456		$ 15,503	$ 32,959
Comprehen	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	229	229	1,121,062	12,390,806	6,836	$ 96,849		$ 89,234	$ 186,084
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	9		70,363	562,906	297	$ 49,842		$ 40,865	$ 90,707
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehen	Non Res Comprehensive									
Other	Other									
SubTotal		2,590	828	3,031,760	30,344,549	16,472	$ 322,938		$ 258,896	$ 581,834
T&D	T&D									
Total		2,590	828	3,031,760	30,344,549	16,472	$ 322,938		$ 258,896	$ 581,834

EE Program Portfolio TRC Test	**4.31**

Excluding T&D

TURLOCK IRRIGATION DISTRICT

Established in 1887, the Turlock Irrigation District (TID) was the first publicly owned irrigation district in the state and is one of only four in California today that also provides electric retail energy directly to homes, farms and businesses. Organized under the Wright Act, the District operates under the provisions of the California Water Code as a special district. TID is also an independent control area and is governed by a five member board of Directors.

Since 1923, TID has been providing safe, affordable and reliable electricity to a growing retail customer base that now numbers in the excess of 99,000 residential, farm, commercial, industrial and municipal accounts in an electric service area that encompasses 662 square-miles in portions of Stanislaus, Merced, Tuolumne and Mariposa counties.

TID provides Irrigation water to more than 5,800 growers in a 307 square-mile service area that incorporates 149,500 acres of Central Valley farmland. The District has been delivering irrigation water to growers since completing its gravity-fed water conveyance system of canals and laterals in 1900.

TID SYSTEM OVERVIEW:

- 99,453 customers
- 72% are residential
- Peak demand 493 MW (2009 Summer Peak)
- 2009 energy use: 1,989 gigawatt-hours

TID ENERGY EFFICIENCY PROGRAM HIGHLIGHTS:

The TID Board of Directors adopted an aggressive 10-year plan to promote energy conservation by assisting customers with efficiency projects. For 2009, the goal was to conserve 12,592 megawatt-hours of electricity. TID was able to surpass the annual goal for a third consecutive year.

TID continues to help customers achieve energy savings through the implementation and promotion of a variety of programs that provide rebate opportunities for all rate classes to encourage customers to conserve energy. A significant portion of the energy efficiency measures were implemented by industrial and commercial customers. TID provides a variety of options for businesses that are looking to make changes in their existing systems by making upgrades or retrofitting their existing facility. Rebates are available that address areas such as lighting, compressed air systems, refrigeration systems, motors, gaskets, chillers and many other systems components.

CURRENT TID ENERGY EFFICIENCY PROGRAMS

Commercial, Industrial and Agricultural Customer Programs

- Meter Manager***:*** TID offers an on-line energy management tool for business customers so they can monitor their energy usage and utilize that information to more efficiently manage their energy consumption simply by logging into a secure web site.
- Energy Audits: TID offers free on-site energy audits to commercial, industrial and agricultural customers who have concerns, questions or an interest in implementing measures to manage their energy usage and reduce consumption.
- Commercial, Industrial, Agricultural Energy Efficiency Rebates**:** TID offers rebates along with comprehensive technical support for all commercial, industrial and agricultural customers to promote the purchase and installation of commercial equipment and systems that support and enhance load reduction.
- Keep Your Cool Program: Energy efficiency retrofits of new gaskets, strip curtains and door closers.

Residential Customer Programs

- Residential Energy Audits**:** TID provides free in-home energy audits to customers who would like to learn how to reduce their energy use.
- Residential Rebate Programs: TID offers customers rebates for purchasing and installing:
    - Energy Star Refrigerator
    - Energy Star Room AC
    - Energy Star Clothes Washer
    - Whole House Fan
    - Shade Screens
- Shade Tree Rebate: TID provides rebates for up to 3 trees per year that are planted to provide shade.
- Air Conditioner Replacement Rebate: TID provides a rebate for replacement of an existing air conditioner or heat pump, with a new energy efficient model.
- Refrigerator Recycling: TID will pay customers to get rid of an old refrigerator or freezer and TID's contracted recycler will pick up and recycle the unit for free.
- CFL Rebate Program: TID provides a rebate for the purchase and installation of CFLs.
- New Construction Rebate: TID offers a rebate to home builders for exceeding Title 24 energy standards.
- "Energy Wise" Education Program: Provides energy saving education and kits to 6th grade students in the TID service territory.
- Education Specialist: Outreach education provided to schools and community groups.

Time Period for Reporting Data: Calendar Year ending 12/31/09

EXTERNAL MEASUREMENT & VERIFICATION OF SAVINGS

In 2009, TID underwent an independent evaluation measurement and verification of their energy efficiency programs reported energy and demand savings. The 2008 program was evaluated and the findings concluded with verification of 98% of the reported savings. TID will continue to use this evaluation process on an annual basis.

PROPOSED NEW ENERGY EFFICIENCY PROGRAMS (2010):

- TID will continue to expand our rebate programs to ensure that all cost-effective energy efficiency is achieved. TID is evaluating and expanding program offerings until all cost-effective energy efficiency is achieved in our service territory.

MODIFICATIONS TO EXISITING ENERGY EFFICIENCY PROGRAMS: (2010)

- All programs are evaluated annually to ensure they meet program objectives.

ASSISTANCE PROGRAMS:

- TID CARES Program: An energy assistance program for qualified customers to receive a discount on their monthly energy bills. The CARES program reduces the monthly customer charge of $11 to $2, a savings $9, and provides a 15% discount on the first 800 kWh energy charges.
- Medical Rate Assistance: The District provides a 50% discount on the first 500-kWh energy charges for customers who use additional energy due to life-support equipment or a medical condition.
- Weatherization: TID has contracted with organizations within our community to provide weatherization services for families who meet the income qualification guidelines. The program enables families to reduce their energy bills by making their homes more energy efficient.

TID DEMAND SIDE PROGRAMS:

While TID does not have a formal program in place, a communication structure exists with large customers to meet demand reduction needs as necessary.

TID RENEWABLE ENERGY PROGRAM HIGHLIGHTS:

- Tuolumne Wind Project: TID invested in a 136.6 megawatt wind facility in 2008. With this purchase it puts TID ahead of its Renewable Energy goal; with approximately 28% of load being served with eligible renewable energy.
- Fuel Cell Project: TID installed the largest fuel cell in California partnering with the City of Turlock's Regional Water Quality Control Facility.
- Solar: TID has interconnected 1,819 kW and paid $5,462,483 in rebates.

- Small Hydroelectric: TID was the first in California to construct small-scale hydroelectric power plants using its own canal system and those of neighboring irrigation districts that were not in the retail electric business. Combined, the eight plants constructed beginning in the mid 1970's provides a total of 20 megawatts of electricity. TID also owns and operates a 5 megawatt hydroelectric power plant at La Grange Dam on the Tuolumne River.
- Geothermal: In 1984, TID acquired an interest in a geothermal power plant in the Geysers Steam Field located in California's Lake County. The project has a capacity of generating 6.8 megawatts.

TURLOCK IRRIGATION DISTRICT

Time Period for Reporting Data: Calendar Year ending 12/31/2009

TID		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	7	7	17,098	170,984	94	$ 25,795		$ 753	$ 26,548
HVAC	Res Cooling	67	67	49,572	619,502	396	$ 42,486		$ 3,230	$ 45,716
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	53	53	425,485	3,829,361	2,044	$ 1,140	$ 59,676	$ 15,979	$ 76,796
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	33	33	263,728	2,518,400	1,366	$ 51,627		$ 10,755	$ 62,382
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive			14,787	295,740	167	$ 19,982		$ 1,514	$ 21,496
Process	Non-Res Cooking									
HVAC	Non-Res Cooling			126,599	1,898,985	1,057	$ 6,330		$ 8,779	$ 15,109
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	818	818	8,953,383	98,487,213	54,547	$ 454,480		$ 435,914	$ 890,394
Process	Non-Res Motors	86	86	1,108,399	16,625,985	8,842	$ 42,437		$ 72,787	$ 115,225
Process	Non-Res Pumps			40,203	603,045	321	$ 2,010		$ 2,640	$ 4,650
Refrigeration	Non-Res Refrigeration	229	229	2,010,634	9,357,548	4,933	$ 18,366	$ 93,611	$ 35,407	$ 147,384
HVAC	Non-Res Shell									
Process	Non Res Process	6	6	43,773	656,595	361	$ 2,189		$ 2,997	$ 5,185
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		1,299	1,299	13,053,661	135,063,358	74,129	$ 666,842	$ 153,287	$ 590,756	$ 1,410,885
T&D	T&D									
Total		1,299	1,299	13,053,661	135,063,358	74,129	$ 666,842	$ 153,287	$ 590,756	$ 1,410,885

EE Program Portfolio TRC Test	**3.61**

Excluding T&D

Time Period for Forecast Data: Calendar Year ending 12/31/2010

TID		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	2	2	21,592	215,918		$ 37,085		$ 1,083	$ 38,169
HVAC	Res Cooling	22	22	62,599	782,305		$ 61,082		$ 4,644	$ 65,726
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting	18	18	440,354	3,963,184		$ 1,639	$ 85,797	$ 22,974	$ 110,409
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	11	11	333,035	3,180,230		$ 74,223		$ 15,463	$ 89,686
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive			18,673	373,459		$ 28,729		$ 2,176	$ 30,905
Process	Non-Res Cooking									
HVAC	Non-Res Cooling			127,895	1,918,427		$ 9,101		$ 12,621	$ 21,722
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	270	270	9,045,050	99,495,550		$ 653,405		$ 626,712	$ 1,280,117
Process	Non-Res Motors	28	28	1,119,747	16,796,206		$ 61,012		$ 104,646	$ 165,658
Process	Non-Res Pumps			40,615	609,219		$ 2,890		$ 3,796	$ 6,686
Refrigeration	Non-Res Refrigeration	76	76	2,031,219	9,453,353		$ 26,404	$ 134,584	$ 50,905	$ 211,893
HVAC	Non-Res Shell									
Process	Non Res Process	2	2	44,221	663,317		$ 3,147		$ 4,308	$ 7,455
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		429	429	13,285,000	137,451,170		$ 958,716	$ 220,381	$ 849,328	$ 2,028,425
T&D	T&D									
Total		429	429	13,285,000	137,451,170		$ 958,716	$ 220,381	$ 849,328	$ 2,028,425

UKIAH PUBLIC UTILITY

History and Load Data

- The City of Ukiah is Mendocino County's only customer-owned electric utility.
- The City supplies electricity to Ukiah's 16,000 plus residents and businesses.
- Peak demand: 36 megawatts – July 2006
- Annual energy use: 117,000 megawatt-hours
- Power content (4th quarter 2008): Geothermal 42 percent, small hydro 11 percent, large hydro 20 percent, Natural gas 13 percent, Nuclear 1 percent, Coal 13 percent. [53 percent eligible renewable]
- Renewable generation and hydropower provide over 70 percent of Ukiah's power needs

City of Ukiah Energy Efficiency Program Overview

Ukiah manages a comprehensive energy efficiency incentive program for residential & commercial customers focusing on peak load reduction and energy conservation. For residential customers, rebates are offered for the installation of various energy efficiency measures. For commercial customers, rebates are available for upgraded lighting, HVAC equipment, and in cases where an analysis is performed rebates can be offered for additional equipment that reduces energy use and/or demand.

Residential Programs:

- Energy Efficiency Hotline: A toll free line with Ukiah personnel is available for our customers to answer questions and provide information on energy efficiency related matters.
- Energy Audits: On-site energy audits by Ukiah energy specialists are available to residential customers. Energy efficiency measures are recommended based on each audit and the Ukiah personnel follow up with additional visits to answer questions and make additional recommendations, if requested.
- Appliance Rebates: Ukiah provides rebates for the purchase of several EnergyStar® appliances.
- Residential Heat Pump and Efficient Air Conditioning Rebates: Ukiah offers rebates for residential and small business customers who install high performance heat pumps or air-conditioners that exceed current state requirement.
- Residential Lighting Rebates: Ukiah offers rebates to homeowners who install compact florescent lamps (CFLs).
- Weatherization Incentives: Ukiah provides financial incentives for homeowners who invest in weatherization measures.

Commercial and Industrial Programs:

- Energy Audits and Rebates: This program offers complementary, on-site energy audits for both commercial and industrial customers. Energy efficiency recommendations and follow up visits support implementation of recommended energy efficiency measures. Rebates are available for energy efficiency upgrades identified in these audits.
- Commercial Lighting: This program engages local lighting and electrical contractors to promote and install energy efficient lighting upgrades using technical assistance and financial incentives available from Healdsburg.
- Keep Your Cool: This limited time offer provides a free, no obligation check of commercial coolers and refrigerators. The Bay Area Gasket Guy (BAGG) looks at the condition of door gaskets, strip curtains and door closers. If BAGG finds that the current door gaskets are in need of replacement, new gaskets will be manufactured and installed for each cooler/freezer with air leaks at no charge to the customer.

Public Facilities and Schools:

- Energy Audits: Complementary on-site energy audits as requested for all public facilities. Energy efficiency recommendations and audit follow up visits support implementation of recommended energy efficiency measures. Rebates are available for energy efficiency upgrades identified in these audits.

Performance Results for 2008-2009

Ukiah's AB2021 Energy Reduction Target for FY07-FY09 was 197,900 kWh annually. In FY09, they exceeded their annual goal by 179%, with a total net energy reduction of 552,727 kWh.

Ukiah's AB2021 Demand Reduction Target for FY07-FY09 was 19.50 kW annually. In FY09, they surpassed their annual goal, with a total demand reduction of 88 kW.

Ukiah participated in the Keep Your Cool (KYC) program implemented through ESG and Humitech in 2009 as a pilot for utilities in Northern California. The program offered commercial customers, typically small to mid-sized businesses, with free upgrades to their refrigeration equipment, including door gaskets, strip curtains, and auto door closers. The KYC program contributed highly cost-effective results for the utilities who participated. The pilot (Phase I) was implemented over several months; Ukiah customers were serviced in May and June 2009 and the 7 projects contributed net savings of 396,247 kWh and 47.62 kW in FY09. They would have achieved just 79% of their energy reduction goal without the KYC projects that were completed in FY09.

2009-2010 Forecast

Ukiah is forecasted to meet their AB2021 Energy and Demand Reduction Targets, but not exceed them to the extent witnessed in FY09. Their net annual kWh forecast for FY10 is less than 1% greater than their annual energy reduction goal. They did not participate in Phase II of the KYC program (which occurred in Q4 2009) which is the reason for the variance between FY09 results and FY10 forecast. The

positive impact of the KYC program on program cost effectiveness can be seen by comparing the FY09 results with KYC projects (TRC 1.96) and the FY10 forecast without KYC projects (TRC 1.26).

Ukiah Evaluation, Measurement and Verification

For 2007-2008, Ukiah did not undertake an EM&V study. The process to hire a firm to perform an EM&V study for the 2008 – 2009 performance period is currently underway and is expected to be completed by Spring of 2010. The report will likely assess program operations, for commercial lighting and the Keep your Cool program which provided the most significant savings.

Revision to Annual Energy Savings Targets for 2011-2020

A recent assessment of energy savings potential in Ukiah conducted by Summit Blue indicated that an appropriate 10 year goal (2011-2020) for their energy-efficiency programs would be 7,024 mWh. Taking into account current economic conditions and the demographics of the City, staff has decided to revise that target to 4,045 mWh and target an average of 270 mWh per year over the next three years as a start towards that target.

UKIAH PUBLIC UTILITY

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

Ukiah Public Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	2,653	26,528	15	$ 1,100		$ 2,202	$ 3,302
HVAC	Res Cooling	16	12	4,636	82,567	53	$ 5,488		$ 10,233	$ 15,720
Appliances	Res Dishwashers			132	1,716	1	$ 100		$ 145	$ 245
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting			128	1,152	1	$ 13		$ 85	$ 97
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	1	1	3,383	60,898	33	$ 1,500		$ 5,088	$ 6,588
HVAC	Res Shell	1	1	1,140	22,804	13	$ 2,053		$ 2,130	$ 4,183
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	21	20	109,466	1,680,644	930	$ 66,944		$ 9,721	$ 76,665
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	48	48	431,189	1,910,396	1,015	$ 3,254	$ 28,757	$ 9,914	$ 41,925
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		88	83	552,727	3,786,705	2,059	$ 80,451	$ 28,757	$ 39,519	$ 148,727
T&D	T&D									
Total		88	83	552,727	3,786,705	2,059	$ 80,451	$ 28,757	$ 39,519	$ 148,727

EE Program Portfolio TRC Test	**1.96**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

Ukiah Public Utility		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	2,785	27,854	15	$ 1,155		$ 467	$ 1,622
HVAC	Res Cooling	17	12	4,867	86,696	55	$ 5,762		$ 1,453	$ 7,215
Appliances	Res Dishwashers			139	1,802	1	$ 105		$ 30	$ 135
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting			134	1,210	1	$ 13		$ 20	$ 33
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	1	1	3,552	63,942	35	$ 1,575		$ 1,072	$ 2,647
HVAC	Res Shell	1	1	1,197	23,945	14	$ 2,156		$ 401	$ 2,557
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	23	23	121,508	1,865,515	1,032	$ 74,308		$ 31,271	$ 105,579
Process	Non-Res Motors									
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	7	7	64,678	286,559	152	$ 488	$ 4,313	$ 4,804	$ 9,605
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		50	45	198,861	2,357,523	1,305	$ 85,562	$ 4,313	$ 39,519	$ 129,394
T&D	T&D									
Total		50	45	198,861	2,357,523	1,305	$ 85,562	$ 4,313	$ 39,519	$ 129,394

EE Program Portfolio TRC Test	**1.26**

Excluding T&D

CITY OF VERNON LIGHT & POWER

- The City of Vernon began serving industrial customers in 1933. In 2005, the City celebrated its 100th anniversary.
- Vernon is part of the California Independent System Operator Control Area and is a Participating Transmission Owner.
- Vernon's customer base is comprised primarily of industrial and commercial interests.
- During the fiscal year ending 2008, the electric system served approximately 1,959 customers, supplied approximately 1,232,000 megawatts, and had a peak demand of 204 megawatts.

City of Vernon Energy Efficiency Program Objectives

- To provide a host of programs that will enable business customers to conserve energy and utilize energy efficiently.
- To inform Vernon electric utility customers of the Public Benefit Programs and the associated benefits of participating in these programs.
- To monitor and evaluate the effectiveness of the programs.

Overview of City of Vernon Energy Efficiency Programs:

Public Facilities Programs:

- LED Traffic Signal Retrofits

Current Commercial Customer Programs:

- Customer Incentive Program: Fund the exploration and implementation of energy efficient technologies and equipment, such as lighting technologies, variable speed drives, air compressors, motors, refrigeration, and air conditioning. Provide cash incentives to businesses that install energy efficient technologies.
- Customer-Directed Program: Fund customized projects demonstrating energy and cost savings and/or commercial market potential in the area of energy efficiency. Customers must fund at least 25 percent of total project cost. Projects are only eligible if they do not qualify for any of the other programs.
- Energy Education & Demonstration Workshops: Provide customers with an array of information resources to encourage energy efficiency measures through energy efficiency workshops and other forms of customer outreach.

- Energy Audit Program: Provide on-site audits for commercial/industrial businesses. A comprehensive audit includes an analysis of energy usage and costs, identification of energy conservation measures, and recommended actions.

Proposed City of Vernon Energy Efficiency Programs and Services: (for FY 2008-2009)

- Maintain existing programs.
- Ensure that all new electric load is efficient.
- Evaluate the appropriateness of any new energy efficiency technologies.
- Ensure that energy efficiency is part of integrated resource planning by determining and implementing the most cost-effective, reliable, and feasible energy efficiency measures.
- Measure and evaluate the impact of energy efficiency programs.

Investment in Renewable Energy:

Vernon plans to examine options for future investment in renewable energy.

Transmission and Distribution Energy Efficiency Efforts:

During the reporting period ending June 2009, one new distribution capacitor bank totaling 1.2 MVARS were installed on a distribution 16 KV line resulting in 70 KW of system demand reduction and a combined 613 MWh of energy conservation on annual basis.

Vernon Demand Reduction Programs:

- Interruptible Service Program**:** Reduce demand load in case of system emergencies.

Stimulus Funding:

The City of Vernon didn't receive any stimulus funds.

CITY OF VERNON LIGHT & POWER

Time Period for Reporting Data: Fiscal Year ending 6/30/2009

City of Vernon Light & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	532	410	2,397,443	38,359,091	21,318	$ 196,448		$ 267,932	$ 464,380
Process	Non-Res Motors	10	7	38,696	580,440	306	$ 75,000		$ 3,527	$ 78,527
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		541	417	2,436,139	38,939,531	21,624	$ 271,448		$ 271,459	$ 542,907
T&D	T&D									
Total		541	417	2,436,139	38,939,531	21,624	$ 271,448		$ 271,459	$ 542,907

EE Program Portfolio TRC Test	**6.53**

Excluding T&D

Time Period for Forecast Data: Fiscal Year ending 6/30/2010

City of Vernon Light & Power		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling									
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration									
HVAC	Res Shell									
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling									
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	692	533	3,116,676	49,866,819	27,713	$ 255,382		$ 273,702	$ 529,084
Process	Non-Res Motors	10	7	38,696	580,440	306	$ 75,000		$ 3,186	$ 78,186
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration									
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other									
SubTotal		701	540	3,155,372	50,447,259	28,019	$ 330,382		$ 276,888	$ 607,270
T&D	T&D									
Total		701	540	3,155,372	50,447,259	28,019	$ 330,382		$ 276,888	$ 607,270

EE Program Portfolio TRC Test	**7.13**

Excluding T&D

VICTORVILLE MUNICIPAL UTILITY SERVICES

- The City of Victorville established the Victorville Municipal Utility Services (VMUS) in 2001 to provide safe, reliable and cost-effective service to retail customers that were building new facilities located in the designated service territory.
- VMUS began serving commercial and industrial customers in 2003.
- VMUS receives wholesale power through its 12 kV switchgear as well as on-site generation facilities.
- VMUS serves approximately 30 non-residential meters.
- Peak demand for the utility is 6.0 megawatts and annual energy sales were 33,000 megawatt-hours.

Victorville Energy Efficiency Program Highlights

Energy Efficiency Program Goals:

- Replace on-site generation facilities with power delivered from the wholesale transmission network.
- Design and install distribution facilities that reduce system losses.
- Provide information and analysis to VMUS customers that allow them to make informed decisions about reducing energy consumption.
- Prioritize energy efficiency technologies and opportunities.
- Provide direct assistance to qualified customers who are unable to otherwise implement cost-effective and approved savings energy efficiencies.

System Design

- Customers are served through 12,000 volts underground facilities with larger gauge ASCR conductors to improve system reliability and reduce system losses.
- VMUS evaluates circuit load performance to optimize performance and reduce system losses.
- VMUS purchases and installs efficient transformers to reduce system losses.

Commercial Customer Programs:

- Time-of Use Rates Program: All customers receive time-of-use pricing bills; enabling them to reduce their energy costs through the time management of their energy usage.

VMUS Demand Reduction Programs:

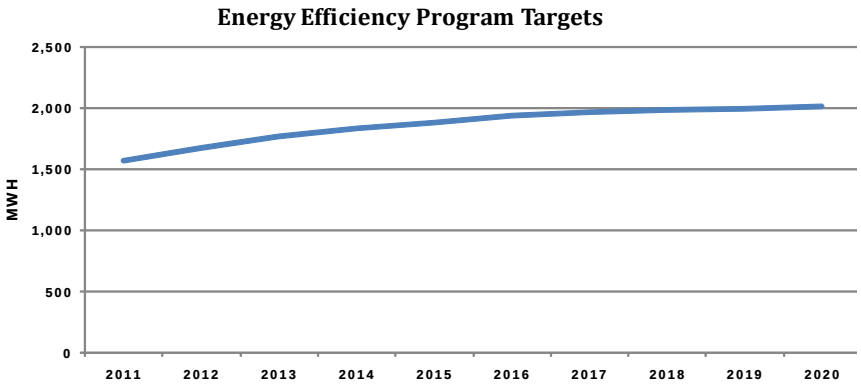
- On-Site Generation Program: – VMUS has available on-site emergency back-up generation systems.

Appendix B: Program Energy Savings Potential and Targets

Preliminary Publicly Owned Utilities Energy Savings Targets 2011 - 2020

	Annual Targets (MWH)											% of Sales
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10 yr Total	Forecast
Alameda	1,574	1,675	1,771	1,833	1,887	1,935	1,964	1,982	1,996	2,014	18,631	0.46%
Anaheim	24,264	22,542	26,296	32,291	37,785	36,956	34,802	32,568	30,339	28,238	306,081	1.12%
Azusa	2,068	1,904	2,071	2,367	2,591	2,736	2,738	2,715	2,692	2,669	24,551	0.89%
Banning	962	706	782	894	944	975	979	970	945	918	9,076	0.59%
Biggs	44	33	35	38	42	45	42	39	35	32	385	0.21%
Burbank	8,768	7,549	8,301	9,523	10,553	11,125	10,894	10,524	10,225	9,928	97,391	0.77%
Colton	3,162	2,902	3,508	4,594	5,064	5,043	4,827	4,574	4,317	4,092	42,082	1.05%
Corona	166	167	190	227	256	288	312	335	358	381	2,678	0.34%
Glendale	11,060	11,520	11,280	11,320	11,380	11,430	11,490	11,550	11,620	11,680	114,330	1.00%
Gridley	75	75	75	87	98	107	111	114	117	120	979	0.23%
Healdsburg	420	420	420	515	557	603	614	617	617	614	5,396	0.52%
Hercules	75	74	86	102	113	122	130	137	145	153	1,137	0.52%
IID	19,743	16,480	18,381	21,281	24,147	26,614	27,674	28,234	28,576	28,910	240,041	0.56%
Industry	-	-	-	-	-	-	-	-	-	-	-	
Lassen	375	375	375	501	650	849	1,043	1,177	1,203	1,219	7,767	0.49%
Lodi	2,296	1,667	1,905	2,242	2,587	2,873	2,948	2,985	3,019	3,053	25,575	0.51%
Lompoc	517	336	395	459	544	630	708	760	776	785	5,911	0.40%
Merced	1,316	1,117	1,258	1,483	1,765	2,054	2,143	2,191	2,242	2,297	17,866	0.33%
Modesto	16,207	15,136	16,154	18,161	20,252	21,857	21,102	20,074	19,258	18,623	186,824	0.67%
Moreno Valley	274	219	234	260	288	304	292	276	261	247	2,655	0.30%
Needles	205	160	181	211	246	280	299	312	323	334	2,549	0.33%
Palo Alto	5,799	6,290	6,782	7,276	7,906	7,927	7,950	7,973	7,999	8,026	73,929	0.75%
Pasadena	14,500	14,500	14,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500	166,000	1.23%
Pittsburg Power/ Island	42	37	40	46	55	64	64	62	60	59	529	0.29%
Plumas Sierra	237	230	247	279	346	491	778	1,191	1,546	1,688	7,033	0.36%
Port of Oakland	406	420	424	430	437	488	523	529	533	541	4,731	0.53%
Rancho Cucamonga	46	49	55	65	74	85	93	101	110	118	796	0.12%
Redding	2,523	2,496	3,076	3,776	4,457	4,655	4,649	4,518	4,402	4,350	38,903	0.38%
Riverside	14,017	12,526	13,705	16,071	18,159	19,617	19,994	20,037	20,082	20,169	174,378	0.75%
Roseville	8,390	8,360	8,604	8,639	9,054	10,032	10,903	10,470	9,874	9,387	93,713	0.62%
Shasta Lake	300	300	300	713	833	934	1,016	1,073	1,108	1,143	7,719	0.29%
Silicon Valley Power	23,055	25,415	26,255	28,502	29,506	28,413	25,456	23,052	21,328	20,020	251,003	0.77%
Trinity	14	13	14	14	14	14	14	14	14	14	139	0.01%
Truckee Donner	1,978	1,640	1,706	1,727	1,762	2,017	2,257	2,317	2,214	2,263	19,880	1.13%
TID	12,900	12,644	13,829	15,846	17,814	19,269	19,075	18,675	18,379	18,172	166,603	0.73%
Ukiah	250	250	310	341	375	413	454	499	549	604	4,045	0.33%
Vernon	8,020	7,863	7,992	8,655	9,766	10,716	9,468	8,073	6,962	6,087	83,601	0.63%
Total	**186,049**	**178,089**	**191,538**	**218,268**	**239,807**	**249,462**	**245,305**	**238,221**	**231,723**	**226,444**	**2,204,905**	

ALAMEDA MUNICIPAL POWER



MWH	**1,574**	**1,675**	**1,771**	**1,833**	**1,887**	**1,935**	**1,964**	**1,982**	**1,996**	**2,014**
% of Load Forecast	0.41%	0.43%	0.45%	0.46%	0.47%	0.48%	0.48%	0.49%	0.49%	0.49%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	62,961	47,113	47,121	47,163	47,281	47,488	47,792	48,192	48,695	49,299
Non-Residential	59,498	57,761	58,387	59,496	59,865	59,865	59,865	59,865	59,865	60,004
Total All Buildings	**122,459**	**104,873**	**105,508**	**106,659**	**107,146**	**107,353**	**107,657**	**108,058**	**108,560**	**109,303**
Percent of Utility Forecast	31.64%	27.07%	27.07%	27.10%	26.88%	26.74%	26.70%	26.68%	26.68%	26.72%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	12,092	9,594	9,597	9,606	9,632	9,678	9,744	9,831	9,941	10,072
Non-Residential	13,479	13,094	13,235	13,487	13,571	13,571	13,571	13,571	13,571	13,602
Total All Buildings	**25,571**	**22,688**	**22,832**	**23,093**	**23,203**	**23,249**	**23,315**	**23,402**	**23,511**	**23,674**
Percent of Utility Forecast	36.87%	32.46%	32.48%	32.53%	32.27%	32.11%	32.07%	32.01%	31.99%	32.04%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	60,333	45,249	45,256	45,296	45,409	45,607	45,898	46,281	46,762	47,340
Non-Residential	18,209	17,716	17,910	18,250	18,363	18,363	18,363	18,363	18,363	18,406
Total All Buildings	**78,542**	**62,965**	**63,166**	**63,546**	**63,772**	**63,970**	**64,261**	**64,644**	**65,125**	**65,745**
Percent of Utility Forecast	20.30%	16.25%	16.21%	16.14%	16.00%	15.93%	15.94%	15.96%	16.01%	16.07%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	9,364	6,944	6,945	6,951	6,968	6,998	7,042	7,101	7,174	7,262
Non-Residential	4,841	4,734	4,786	4,877	4,907	4,907	4,907	4,907	4,907	4,918
Total All Buildings	**14,205**	**11,678**	**11,731**	**11,828**	**11,875**	**11,905**	**11,949**	**12,008**	**12,081**	**12,180**
Percent of Utility Forecast	20.48%	16.71%	16.69%	16.66%	16.52%	16.44%	16.44%	16.43%	16.44%	16.48%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	748	505	509	525	562	551	505	466	435	411
Non-Residential	826	739	784	876	910	847	765	685	612	553
Total All Buildings	**1,574**	**1,244**	**1,293**	**1,402**	**1,472**	**1,399**	**1,270**	**1,151**	**1,047**	**963**
Percent of Utility Forecast	0.41%	0.32%	0.33%	0.36%	0.37%	0.35%	0.32%	0.28%	0.26%	0.24%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	131	91	91	93	99	96	87	79	72	67
Non-Residential	222	198	206	222	223	210	190	169	151	136
Total All Buildings	**353**	**289**	**297**	**315**	**322**	**307**	**277**	**248**	**223**	**203**
Percent of Utility Forecast	0.51%	0.41%	0.42%	0.44%	0.45%	0.42%	0.38%	0.34%	0.30%	0.28%

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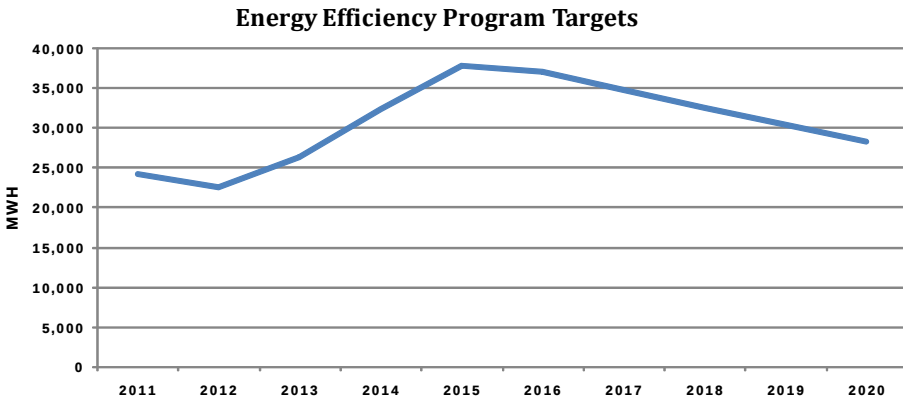


MWH	**24,264**	**22,542**	**26,296**	**32,291**	**37,785**	**36,956**	**34,802**	**32,568**	**30,339**	**28,238**
% of Load Forecast	0.95%	0.87%	0.99%	1.21%	1.40%	1.34%	1.25%	1.16%	1.07%	0.99%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	149,559	127,504	131,252	136,347	142,959	150,402	158,149	166,073	174,161	182,661
Non-Residential	532,601	533,781	538,064	540,274	549,103	555,860	559,673	563,540	567,407	569,671
Total All Buildings	**682,160**	**661,286**	**669,316**	**676,621**	**692,062**	**706,262**	**717,822**	**729,613**	**741,568**	**752,332**
Percent of Utility Forecast	26.58%	25.51%	25.32%	25.26%	25.59%	25.62%	25.71%	25.97%	26.24%	26.47%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	53,133	50,021	51,146	52,680	54,674	56,920	59,258	61,650	64,091	66,658
Non-Residential	112,106	112,442	113,344	113,809	115,669	117,093	117,896	118,710	119,525	120,002
Total All Buildings	**165,239**	**162,463**	**164,490**	**166,489**	**170,343**	**174,012**	**177,154**	**180,360**	**183,616**	**186,660**
Percent of Utility Forecast	30.10%	29.43%	29.37%	29.26%	29.68%	29.85%	30.28%	30.73%	31.17%	31.69%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	127,266	104,871	108,054	112,380	117,993	124,311	130,886	137,612	144,477	151,691
Non-Residential	513,221	514,108	518,233	520,362	528,866	535,374	539,046	542,770	546,495	548,676
Total All Buildings	**640,487**	**618,980**	**626,287**	**632,742**	**646,858**	**659,684**	**669,932**	**680,382**	**690,972**	**700,367**
Percent of Utility Forecast	24.95%	23.88%	23.70%	23.63%	23.92%	23.93%	23.99%	24.22%	24.45%	24.65%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	27,723	24,203	24,650	25,262	26,058	26,956	27,891	28,847	29,823	30,849
Non-Residential	108,061	108,336	109,205	109,654	111,446	112,817	113,591	114,376	115,161	115,620
Total All Buildings	**135,784**	**132,539**	**133,856**	**134,916**	**137,504**	**139,773**	**141,482**	**143,223**	**144,984**	**146,470**
Percent of Utility Forecast	24.73%	24.01%	23.90%	23.71%	23.96%	23.97%	24.18%	24.40%	24.62%	24.87%

Market Potential

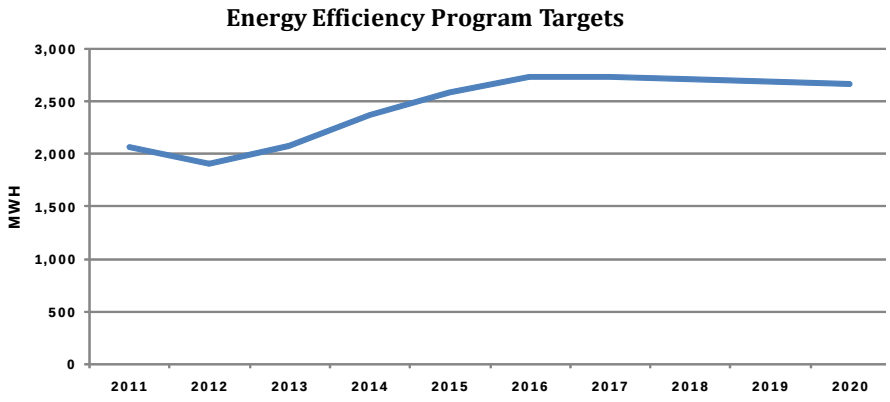
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	6,489	3,897	4,497	5,704	6,800	7,167	6,807	6,405	5,829	5,351
Non-Residential	17,775	18,644	21,799	26,587	30,986	29,789	27,994	26,163	24,510	22,886
Total All Buildings	**24,264**	**22,542**	**26,296**	**32,291**	**37,785**	**36,956**	**34,802**	**32,568**	**30,339**	**28,238**
Percent of Utility Forecast	0.95%	0.87%	0.99%	1.21%	1.40%	1.34%	1.25%	1.16%	1.07%	0.99%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,144	736	836	1,044	1,263	1,464	1,364	1,258	1,125	1,014
Non-Residential	3,684	3,830	4,414	5,521	6,564	6,378	6,037	5,690	5,342	4,992
Total All Buildings	**4,828**	**4,566**	**5,250**	**6,565**	**7,826**	**7,841**	**7,401**	**6,948**	**6,467**	**6,006**
Percent of Utility Forecast	0.88%	0.83%	0.94%	1.15%	1.36%	1.35%	1.27%	1.18%	1.10%	1.02%

AZUSA



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	**2,068**	**1,904**	**2,071**	**2,367**	**2,591**	**2,736**	**2,738**	**2,715**	**2,692**	**2,669**
% of Load Forecast	0.78%	0.71%	0.77%	0.87%	0.95%	0.99%	0.99%	0.97%	0.95%	0.94%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	29,673	24,900	24,920	25,015	25,185	25,430	25,750	26,146	26,616	27,161
Non-Residential	88,484	87,497	87,530	88,174	88,817	89,461	90,104	90,748	91,392	92,035
Total All Buildings	**118,157**	**112,396**	**112,450**	**113,188**	**114,002**	**114,891**	**115,855**	**116,894**	**118,008**	**119,197**
Percent of Utility Forecast	44.59%	42.10%	41.80%	41.61%	41.61%	41.63%	41.67%	41.75%	41.85%	41.97%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	10,761	10,013	10,016	10,040	10,086	10,153	10,242	10,353	10,484	10,638
Non-Residential	20,160	19,956	19,960	20,107	20,254	20,400	20,547	20,694	20,841	20,988
Total All Buildings	**30,921**	**29,969**	**29,976**	**30,147**	**30,340**	**30,554**	**30,789**	**31,047**	**31,325**	**31,625**
Percent of Utility Forecast	48.47%	46.61%	46.33%	46.24%	46.18%	46.15%	46.16%	46.20%	46.27%	46.37%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	25,852	21,083	21,101	21,184	21,333	21,546	21,825	22,169	22,578	23,053
Non-Residential	85,466	84,479	84,512	85,134	85,755	86,376	86,998	87,619	88,241	88,862
Total All Buildings	**111,318**	**105,562**	**105,613**	**106,318**	**107,088**	**107,923**	**108,823**	**109,788**	**110,819**	**111,915**
Percent of Utility Forecast	42.01%	39.54%	39.26%	39.09%	39.08%	39.10%	39.14%	39.21%	39.30%	39.41%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	5,987	5,243	5,244	5,253	5,272	5,301	5,338	5,385	5,442	5,508
Non-Residential	19,372	19,168	19,172	19,313	19,454	19,595	19,736	19,877	20,018	20,159
Total All Buildings	**25,358**	**24,411**	**24,415**	**24,566**	**24,726**	**24,895**	**25,074**	**25,262**	**25,459**	**25,666**
Percent of Utility Forecast	39.75%	37.96%	37.74%	37.68%	37.63%	37.61%	37.59%	37.59%	37.61%	37.63%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	429	230	262	300	348	380	387	390	394	396
Non-Residential	1,639	1,673	1,809	2,067	2,242	2,356	2,352	2,325	2,299	2,272
Total All Buildings	**2,068**	**1,904**	**2,071**	**2,367**	**2,591**	**2,736**	**2,738**	**2,715**	**2,692**	**2,669**
Percent of Utility Forecast	0.78%	0.71%	0.77%	0.87%	0.95%	0.99%	0.99%	0.97%	0.95%	0.94%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	84	54	59	68	80	94	103	103	103	102
Non-Residential	369	378	408	462	498	523	525	522	519	516
Total All Buildings	**453**	**431**	**467**	**529**	**579**	**616**	**628**	**626**	**622**	**618**
Percent of Utility Forecast	0.71%	0.67%	0.72%	0.81%	0.88%	0.93%	0.94%	0.93%	0.92%	0.91%

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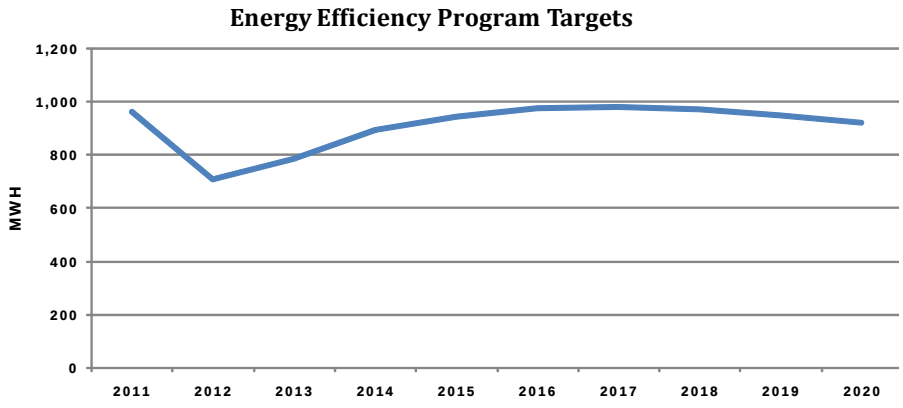


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	**962**	**706**	**782**	**894**	**944**	**975**	**979**	**970**	**945**	**918**
% of Load Forecast	0.67%	0.49%	0.53%	0.60%	0.62%	0.63%	0.62%	0.60%	0.57%	0.54%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	32,775	29,083	29,253	29,574	30,048	30,678	31,468	32,420	33,538	34,825
Non-Residential	37,517	37,015	37,042	37,068	37,095	37,733	38,488	39,257	40,042	40,843
Total All Buildings	**70,292**	**66,098**	**66,294**	**66,642**	**67,143**	**68,411**	**69,956**	**71,678**	**73,580**	**75,668**
Percent of Utility Forecast	48.84%	45.92%	45.16%	44.50%	43.96%	43.91%	44.02%	44.22%	44.50%	44.87%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	13,631	13,052	13,093	13,174	13,296	13,460	13,667	13,918	14,213	14,553
Non-Residential	7,731	7,626	7,629	7,632	7,635	7,766	7,921	8,079	8,241	8,406
Total All Buildings	**21,362**	**20,678**	**20,721**	**20,805**	**20,931**	**21,226**	**21,588**	**21,997**	**22,454**	**22,959**
Percent of Utility Forecast	52.15%	50.48%	49.60%	48.83%	48.15%	47.87%	47.74%	47.69%	47.72%	47.84%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	22,291	18,829	18,810	18,791	18,773	18,754	18,735	18,716	18,698	18,679
Non-Residential	13,792	13,279	13,294	13,309	13,324	13,554	13,825	14,102	14,384	14,672
Total All Buildings	**36,083**	**32,108**	**32,104**	**32,100**	**32,097**	**32,308**	**32,560**	**32,818**	**33,081**	**33,350**
Percent of Utility Forecast	25.07%	22.31%	21.87%	21.44%	21.01%	20.74%	20.49%	20.25%	20.01%	19.78%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	7,286	6,727	6,720	6,713	6,706	6,700	6,693	6,686	6,680	6,673
Non-Residential	2,869	2,763	2,764	2,766	2,768	2,815	2,872	2,929	2,988	3,047
Total All Buildings	**10,155**	**9,489**	**9,484**	**9,479**	**9,474**	**9,515**	**9,565**	**9,615**	**9,667**	**9,720**
Percent of Utility Forecast	24.79%	23.17%	22.70%	22.25%	21.79%	21.46%	21.15%	20.84%	20.55%	20.25%

Market Potential

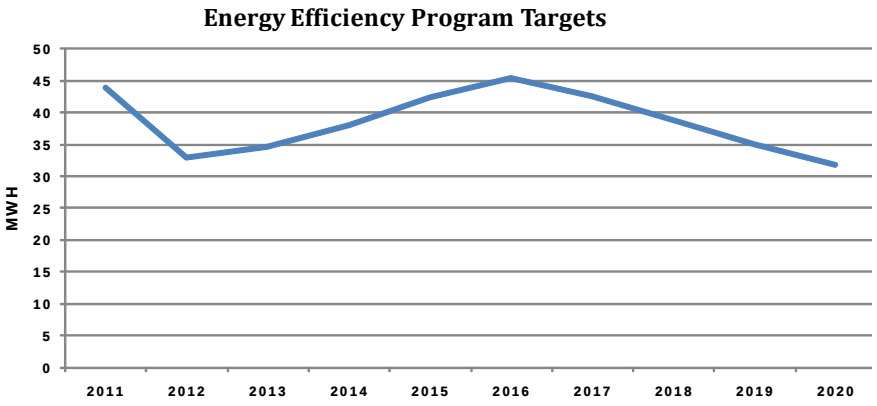
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	583	350	381	415	468	515	533	539	526	512
Non-Residential	380	356	401	479	476	460	446	432	419	406
Total All Buildings	**962**	**706**	**782**	**894**	**944**	**975**	**979**	**970**	**945**	**918**
Percent of Utility Forecast	0.67%	0.49%	0.53%	0.60%	0.62%	0.63%	0.62%	0.60%	0.57%	0.54%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	145	109	118	133	161	194	217	228	222	214
Non-Residential	80	75	84	100	99	96	93	90	88	85
Total All Buildings	**225**	**184**	**202**	**233**	**261**	**290**	**310**	**318**	**309**	**299**
Percent of Utility Forecast	0.55%	0.45%	0.48%	0.55%	0.60%	0.66%	0.69%	0.69%	0.66%	0.62%

BIGGS



MWH	**44**	**33**	**35**	**38**	**42**	**45**	**42**	**39**	**35**	**32**
% of Load Forecast	0.25%	0.19%	0.19%	0.21%	0.23%	0.25%	0.23%	0.21%	0.19%	0.17%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,707	1,493	1,493	1,494	1,495	1,495	1,496	1,496	1,497	1,497
Non-Residential	236	235	235	262	276	276	276	276	276	276
Total All Buildings	**1,943**	**1,728**	**1,729**	**1,756**	**1,770**	**1,771**	**1,771**	**1,772**	**1,772**	**1,773**
Percent of Utility Forecast	10.98%	9.73%	9.70%	9.84%	9.79%	9.72%	9.69%	9.67%	9.64%	9.61%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	710	676	676	676	677	677	677	677	677	677
Non-Residential	32	32	32	35	36	36	36	36	36	36
Total All Buildings	**741**	**708**	**708**	**711**	**713**	**713**	**713**	**713**	**713**	**713**
Percent of Utility Forecast	18.74%	17.89%	17.89%	17.97%	18.02%	18.02%	18.02%	18.02%	18.03%	18.03%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,129	931	931	932	932	932	933	933	934	934
Non-Residential	202	202	202	229	242	242	242	242	242	242
Total All Buildings	**1,331**	**1,133**	**1,133**	**1,160**	**1,174**	**1,174**	**1,175**	**1,175**	**1,176**	**1,176**
Percent of Utility Forecast	7.52%	6.37%	6.35%	6.50%	6.49%	6.45%	6.43%	6.41%	6.40%	6.38%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	414	382	382	382	382	382	382	382	382	382
Non-Residential	23	23	23	26	28	28	28	28	28	28
Total All Buildings	**437**	**406**	**406**	**409**	**410**	**410**	**410**	**410**	**410**	**410**
Percent of Utility Forecast	11.06%	10.25%	10.25%	10.33%	10.37%	10.37%	10.37%	10.37%	10.37%	10.37%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	36	25	27	29	31	32	31	30	28	26
Non-Residential	8	7	7	9	12	14	12	9	7	6
Total All Buildings	**44**	**33**	**35**	**38**	**42**	**45**	**42**	**39**	**35**	**32**
Percent of Utility Forecast	0.25%	0.19%	0.19%	0.21%	0.23%	0.25%	0.23%	0.21%	0.19%	0.17%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	10	8	9	10	11	13	14	14	13	12
Non-Residential	1	1	1	1	1	2	1	1	1	1
Total All Buildings	**11**	**9**	**10**	**11**	**13**	**15**	**16**	**15**	**14**	**13**
Percent of Utility Forecast	0.28%	0.23%	0.25%	0.27%	0.32%	0.38%	0.40%	0.38%	0.35%	0.33%

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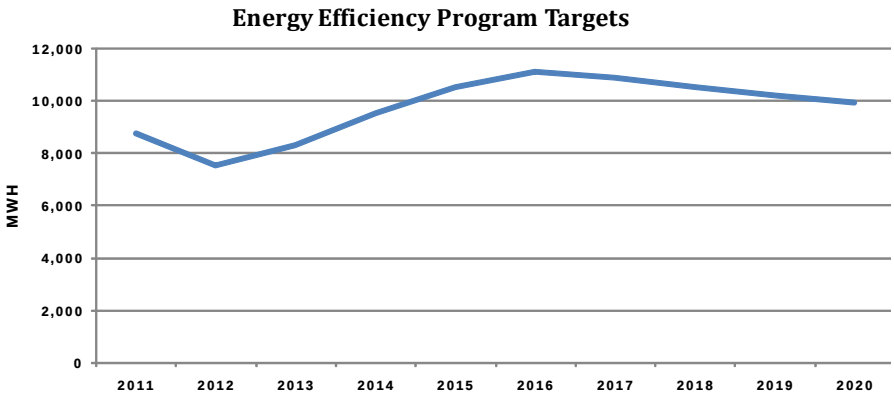


MWH	**8,768**	**7,549**	**8,301**	**9,523**	**10,553**	**11,125**	**10,894**	**10,524**	**10,225**	**9,928**
% of Load Forecast	0.73%	0.62%	0.67%	0.77%	0.84%	0.88%	0.85%	0.82%	0.79%	0.76%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	85,226	72,560	73,597	74,925	76,544	78,434	80,594	83,004	85,725	88,717
Non-Residential	292,142	292,144	294,647	297,605	300,563	303,293	306,023	308,526	311,711	314,442
Total All Buildings	**377,368**	**364,704**	**368,244**	**372,530**	**377,107**	**381,727**	**386,617**	**391,530**	**397,437**	**403,159**
Percent of Utility Forecast	31.23%	29.90%	29.91%	30.00%	30.06%	30.13%	30.24%	30.35%	30.56%	30.69%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	30,786	28,911	29,200	29,572	30,028	30,561	31,172	31,854	32,625	33,474
Non-Residential	62,716	62,753	63,290	63,926	64,561	65,147	65,734	66,272	66,956	67,542
Total All Buildings	**93,502**	**91,664**	**92,490**	**93,498**	**94,589**	**95,709**	**96,906**	**98,125**	**99,581**	**101,016**
Percent of Utility Forecast	30.76%	29.76%	29.74%	29.68%	29.65%	29.72%	29.73%	29.83%	29.90%	30.06%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	74,285	61,517	62,419	63,575	64,984	66,627	68,506	70,602	72,968	75,570
Non-Residential	283,923	283,848	286,279	289,153	292,027	294,680	297,332	299,764	302,859	305,512
Total All Buildings	**358,208**	**345,364**	**348,699**	**352,728**	**357,011**	**361,307**	**365,838**	**370,366**	**375,827**	**381,082**
Percent of Utility Forecast	29.64%	28.31%	28.32%	28.40%	28.46%	28.52%	28.62%	28.71%	28.90%	29.01%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	17,113	15,113	15,236	15,396	15,591	15,820	16,083	16,377	16,710	17,076
Non-Residential	60,408	60,423	60,941	61,552	62,164	62,729	63,293	63,811	64,470	65,035
Total All Buildings	**77,522**	**75,536**	**76,177**	**76,948**	**77,755**	**78,549**	**79,377**	**80,188**	**81,180**	**82,111**
Percent of Utility Forecast	25.50%	24.52%	24.49%	24.43%	24.37%	24.39%	24.35%	24.37%	24.38%	24.44%

Market Potential

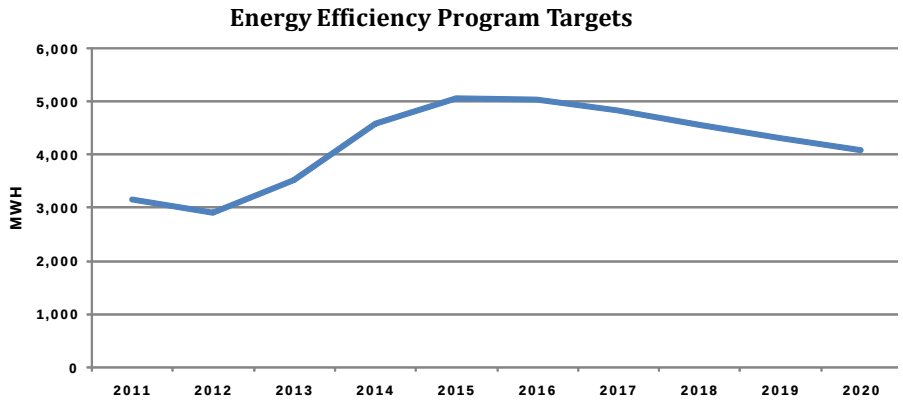
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	2,932	1,477	1,658	1,864	2,100	2,206	2,146	2,068	1,996	1,924
Non-Residential	5,836	6,072	6,642	7,659	8,453	8,919	8,749	8,457	8,230	8,004
Total All Buildings	**8,768**	**7,549**	**8,301**	**9,523**	**10,553**	**11,125**	**10,894**	**10,524**	**10,225**	**9,928**
Percent of Utility Forecast	0.73%	0.62%	0.67%	0.77%	0.84%	0.88%	0.85%	0.82%	0.79%	0.76%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	556	327	357	397	458	517	539	511	482	456
Non-Residential	1,200	1,255	1,375	1,577	1,730	1,829	1,823	1,793	1,770	1,743
Total All Buildings	**1,755**	**1,583**	**1,732**	**1,974**	**2,188**	**2,346**	**2,363**	**2,304**	**2,252**	**2,199**
Percent of Utility Forecast	0.58%	0.51%	0.56%	0.63%	0.69%	0.73%	0.72%	0.70%	0.68%	0.65%

COLTON



MWH	**3,162**	**2,902**	**3,508**	**4,594**	**5,064**	**5,043**	**4,827**	**4,574**	**4,317**	**4,092**
% of Load Forecast	0.84%	0.76%	0.91%	1.17%	1.27%	1.25%	1.18%	1.10%	1.03%	0.96%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	37,607	32,853	33,430	34,187	35,128	36,255	37,571	39,078	40,780	42,678
Non-Residential	68,501	68,796	69,799	70,818	71,851	72,899	73,962	75,041	76,135	77,246
Total All Buildings	**106,108**	**101,649**	**103,229**	**105,004**	**106,978**	**109,154**	**111,533**	**114,119**	**116,915**	**119,924**
Percent of Utility Forecast	28.25%	26.73%	26.75%	26.82%	26.93%	27.09%	27.28%	27.51%	27.78%	28.08%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	15,931	15,243	15,413	15,638	15,920	16,258	16,654	17,108	17,621	18,194
Non-Residential	14,043	14,099	14,305	14,513	14,725	14,940	15,158	15,379	15,603	15,831
Total All Buildings	**29,974**	**29,342**	**29,718**	**30,152**	**30,645**	**31,198**	**31,811**	**32,487**	**33,224**	**34,024**
Percent of Utility Forecast	36.61%	36.59%	36.23%	35.93%	35.70%	35.53%	35.41%	35.35%	35.34%	35.38%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	29,233	24,385	24,825	25,402	26,120	26,979	27,982	29,131	30,428	31,874
Non-Residential	66,377	66,640	67,612	68,599	69,599	70,614	71,644	72,689	73,750	74,825
Total All Buildings	**95,609**	**91,026**	**92,437**	**94,001**	**95,719**	**97,594**	**99,627**	**101,821**	**104,178**	**106,700**
Percent of Utility Forecast	25.45%	23.93%	23.96%	24.01%	24.10%	24.22%	24.37%	24.55%	24.75%	24.99%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	8,071	7,307	7,367	7,446	7,546	7,665	7,806	7,968	8,151	8,355
Non-Residential	13,567	13,616	13,815	14,016	14,221	14,428	14,639	14,852	15,069	15,289
Total All Buildings	**21,638**	**20,923**	**21,181**	**21,462**	**21,766**	**22,094**	**22,445**	**22,820**	**23,219**	**23,644**
Percent of Utility Forecast	26.43%	26.09%	25.82%	25.58%	25.36%	25.16%	24.98%	24.83%	24.70%	24.58%

Market Potential

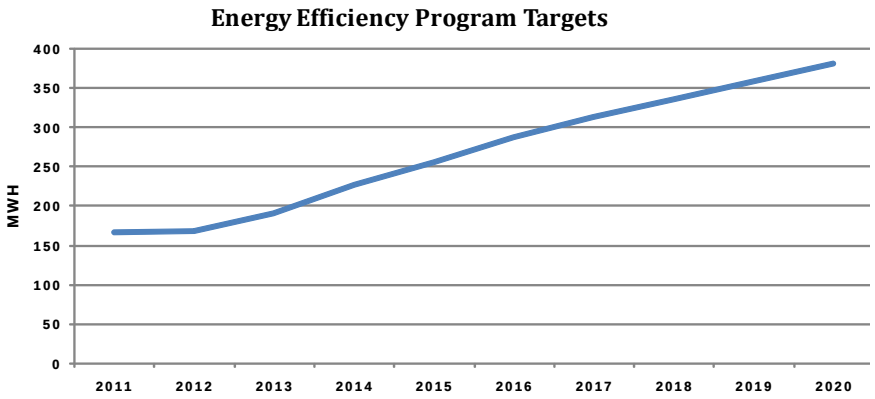
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,144	742	854	1,066	1,308	1,395	1,378	1,324	1,242	1,168
Non-Residential	2,018	2,160	2,654	3,527	3,755	3,649	3,449	3,250	3,074	2,924
Total All Buildings	**3,162**	**2,902**	**3,508**	**4,594**	**5,064**	**5,043**	**4,827**	**4,574**	**4,317**	**4,092**
Percent of Utility Forecast	0.84%	0.76%	0.91%	1.17%	1.27%	1.25%	1.18%	1.10%	1.03%	0.96%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	272	213	245	320	467	483	465	431	394	361
Non-Residential	403	428	519	695	762	758	725	690	654	623
Total All Buildings	**675**	**641**	**764**	**1,015**	**1,229**	**1,241**	**1,190**	**1,121**	**1,049**	**984**
Percent of Utility Forecast	0.82%	0.80%	0.93%	1.21%	1.43%	1.41%	1.32%	1.22%	1.12%	1.02%

CORONA



MWH	**166**	**167**	**190**	**227**	**256**	**288**	**312**	**335**	**358**	**381**
% of Load Forecast	0.23%	0.23%	0.26%	0.30%	0.33%	0.37%	0.39%	0.42%	0.44%	0.47%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,032	920	936	960	989	1,022	1,057	1,096	1,138	1,184
Non-Residential	32,883	32,758	33,414	34,249	34,934	35,283	35,636	35,992	36,352	36,716
Total All Buildings	**33,914**	**33,679**	**34,350**	**35,209**	**35,923**	**36,305**	**36,693**	**37,088**	**37,491**	**37,899**
Percent of Utility Forecast	46.95%	46.16%	46.62%	46.84%	46.63%	46.20%	46.23%	46.27%	46.31%	46.35%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	429	413	418	425	434	444	454	466	479	492
Non-Residential	7,642	7,623	7,775	7,969	8,129	8,210	8,292	8,375	8,459	8,543
Total All Buildings	**8,071**	**8,036**	**8,193**	**8,394**	**8,563**	**8,654**	**8,746**	**8,841**	**8,937**	**9,036**
Percent of Utility Forecast	59.45%	58.61%	59.16%	60.02%	60.61%	60.65%	60.69%	60.74%	60.80%	60.86%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	850	737	749	767	789	814	841	870	902	937
Non-Residential	31,727	31,591	32,222	33,028	33,689	34,025	34,366	34,709	35,056	35,407
Total All Buildings	**32,577**	**32,327**	**32,971**	**33,795**	**34,477**	**34,839**	**35,206**	**35,580**	**35,959**	**36,344**
Percent of Utility Forecast	45.10%	44.31%	44.74%	44.96%	44.75%	44.33%	44.36%	44.38%	44.41%	44.44%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	237	219	220	223	226	229	233	237	242	247
Non-Residential	7,366	7,344	7,491	7,679	7,832	7,910	7,990	8,069	8,150	8,232
Total All Buildings	**7,603**	**7,563**	**7,712**	**7,901**	**8,058**	**8,140**	**8,223**	**8,307**	**8,392**	**8,478**
Percent of Utility Forecast	56.01%	55.16%	55.69%	56.49%	57.04%	57.05%	57.06%	57.07%	57.09%	57.10%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	16	9	10	12	13	15	15	15	15	15
Non-Residential	150	158	180	215	242	273	297	320	343	366
Total All Buildings	**166**	**167**	**190**	**227**	**256**	**288**	**312**	**335**	**358**	**381**
Percent of Utility Forecast	0.23%	0.23%	0.26%	0.30%	0.33%	0.37%	0.39%	0.42%	0.44%	0.47%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	4	3	3	4	5	6	6	6	6	5
Non-Residential	36	38	43	51	57	64	70	76	81	87
Total All Buildings	**40**	**41**	**46**	**55**	**62**	**70**	**76**	**82**	**87**	**92**
Percent of Utility Forecast	0.30%	0.30%	0.33%	0.39%	0.44%	0.49%	0.53%	0.56%	0.59%	0.62%

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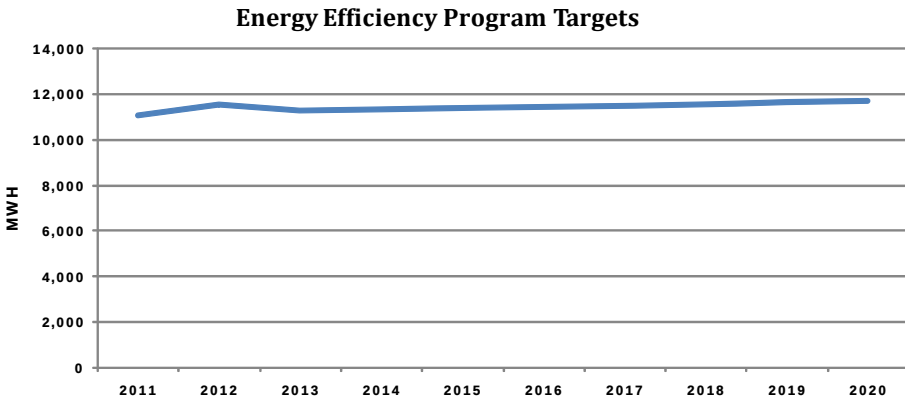


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	**11,060**	**11,520**	**11,280**	**11,320**	**11,380**	**11,430**	**11,490**	**11,550**	**11,620**	**11,680**
% of Load Forecast	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	106,663	89,746	90,148	90,647	91,246	91,942	92,743	93,622	94,533	95,476
Non-Residential	207,469	204,838	204,858	204,885	204,905	204,932	204,958	204,985	205,012	206,092
Total All Buildings	**314,132**	**294,585**	**295,006**	**295,532**	**296,151**	**296,874**	**297,701**	**298,606**	**299,544**	**301,568**
Percent of Utility Forecast	28.40%	25.57%	26.15%	26.11%	26.02%	25.97%	25.91%	25.85%	25.78%	25.82%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	38,546	35,945	36,049	36,182	36,343	36,533	36,752	36,993	37,244	37,504
Non-Residential	46,944	46,407	46,409	46,412	46,415	46,418	46,421	46,424	46,427	46,672
Total All Buildings	**85,489**	**82,352**	**82,459**	**82,595**	**82,758**	**82,951**	**83,173**	**83,417**	**83,671**	**84,176**
Percent of Utility Forecast	25.44%	24.51%	24.54%	24.58%	24.63%	24.69%	24.75%	24.83%	24.90%	25.05%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	91,020	74,067	74,420	74,858	75,382	75,991	76,691	77,458	78,254	79,078
Non-Residential	201,103	198,473	198,493	198,519	198,539	198,566	198,592	198,619	198,646	199,693
Total All Buildings	**292,123**	**272,540**	**272,913**	**273,377**	**273,921**	**274,557**	**275,283**	**276,077**	**276,900**	**278,770**
Percent of Utility Forecast	26.41%	23.66%	24.19%	24.15%	24.07%	24.02%	23.96%	23.90%	23.83%	23.87%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	20,828	18,181	18,224	18,279	18,347	18,427	18,519	18,622	18,728	18,839
Non-Residential	45,018	44,481	44,484	44,487	44,489	44,492	44,495	44,498	44,501	44,736
Total All Buildings	**65,846**	**62,663**	**62,708**	**62,766**	**62,836**	**62,919**	**63,014**	**63,120**	**63,229**	**63,574**
Percent of Utility Forecast	19.60%	18.65%	18.66%	18.68%	18.70%	18.73%	18.75%	18.79%	18.82%	18.92%

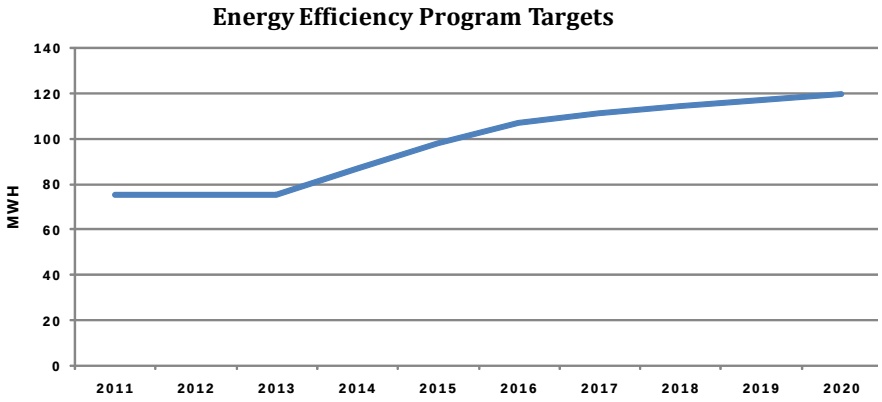
Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	4,169	2,473	3,048	3,680	3,926	3,768	3,408	3,090	2,805	2,688
Non-Residential	6,199	6,105	6,807	8,588	9,889	9,707	8,950	8,210	7,540	7,012
Total All Buildings	**10,368**	**8,578**	**9,855**	**12,268**	**13,815**	**13,475**	**12,359**	**11,300**	**10,346**	**9,700**
Percent of Utility Forecast	0.94%	0.74%	0.87%	1.08%	1.21%	1.18%	1.08%	0.98%	0.89%	0.83%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	772	525	675	922	896	847	765	692	627	597
Non-Residential	1,420	1,398	1,550	1,966	2,271	2,267	2,078	1,900	1,736	1,607
Total All Buildings	**2,192**	**1,923**	**2,225**	**2,888**	**3,168**	**3,114**	**2,843**	**2,592**	**2,363**	**2,204**
Percent of Utility Forecast	0.65%	0.57%	0.66%	0.86%	0.94%	0.93%	0.85%	0.77%	0.70%	0.66%



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	**75**	**75**	**75**	**87**	**98**	**107**	**111**	**114**	**117**	**120**
% of Load Forecast	0.20%	0.19%	0.19%	0.21%	0.24%	0.25%	0.26%	0.26%	0.27%	0.27%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	6,503	5,892	6,109	6,372	6,672	7,008	7,375	7,775	8,207	8,672
Non-Residential	6,825	6,908	7,057	7,215	7,350	7,476	7,582	7,697	7,811	7,927
Total All Buildings	**13,328**	**12,799**	**13,166**	**13,586**	**14,023**	**14,484**	**14,958**	**15,471**	**16,018**	**16,599**
Percent of Utility Forecast	36.01%	33.12%	33.28%	33.62%	33.94%	34.41%	34.94%	35.63%	36.34%	37.11%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	2,673	2,604	2,673	2,755	2,849	2,955	3,070	3,196	3,332	3,478
Non-Residential	1,522	1,543	1,577	1,612	1,642	1,670	1,694	1,720	1,745	1,771
Total All Buildings	**4,195**	**4,148**	**4,249**	**4,367**	**4,491**	**4,625**	**4,764**	**4,915**	**5,077**	**5,249**
Percent of Utility Forecast	41.44%	40.66%	41.34%	42.15%	43.01%	44.00%	45.04%	46.17%	47.41%	48.72%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	4,104	3,456	3,629	3,837	4,075	4,341	4,632	4,948	5,290	5,658
Non-Residential	6,581	6,659	6,802	6,955	7,085	7,206	7,309	7,419	7,530	7,642
Total All Buildings	**10,685**	**10,115**	**10,431**	**10,792**	**11,160**	**11,547**	**11,941**	**12,367**	**12,820**	**13,299**
Percent of Utility Forecast	28.87%	26.18%	26.37%	26.71%	27.01%	27.43%	27.89%	28.48%	29.09%	29.73%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	2,026	1,939	1,985	2,039	2,102	2,172	2,249	2,332	2,422	2,520
Non-Residential	1,442	1,461	1,492	1,526	1,554	1,581	1,603	1,628	1,652	1,676
Total All Buildings	**3,468**	**3,400**	**3,477**	**3,565**	**3,656**	**3,753**	**3,852**	**3,960**	**4,074**	**4,196**
Percent of Utility Forecast	34.26%	33.33%	33.82%	34.41%	35.01%	35.70%	36.41%	37.20%	38.05%	38.95%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	19	10	12	13	15	17	19	20	21	22
Non-Residential	53	57	64	75	84	91	94	96	98	100
Total All Buildings	**72**	**67**	**75**	**88**	**100**	**108**	**113**	**116**	**119**	**121**
Percent of Utility Forecast	0.20%	0.17%	0.19%	0.22%	0.24%	0.26%	0.26%	0.27%	0.27%	0.27%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	7	6	6	7	9	11	14	15	15	15
Non-Residential	12	13	14	16	18	20	20	21	21	22
Total All Buildings	**19**	**18**	**20**	**24**	**27**	**31**	**34**	**36**	**36**	**37**
Percent of Utility Forecast	0.18%	0.18%	0.20%	0.23%	0.26%	0.30%	0.32%	0.33%	0.34%	0.34%

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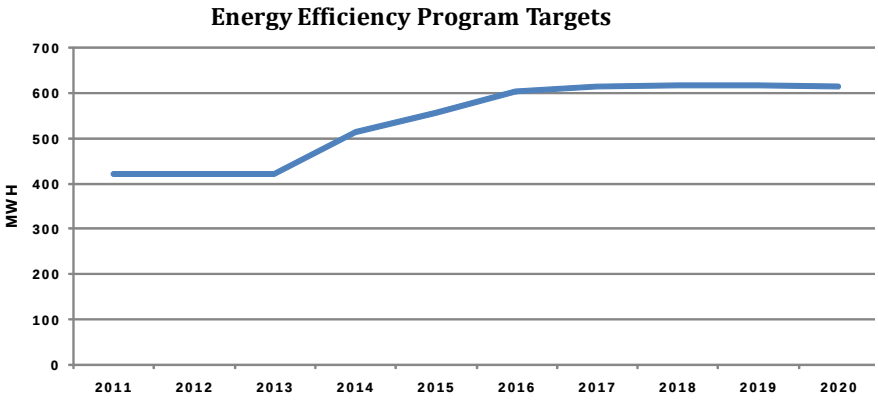

MWH	**420**	**420**	**420**	**515**	**557**	**603**	**614**	**617**	**617**	**614**
% of Load Forecast	0.51%	0.45%	0.40%	0.49%	0.52%	0.56%	0.57%	0.57%	0.57%	0.56%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	13,500	13,481	15,081	16,725	18,409	20,132	21,883	23,669	25,489	27,344
Non-Residential	13,848	15,483	15,567	15,668	15,758	15,847	15,905	15,985	16,060	16,134
Total All Buildings	**27,348**	**28,964**	**30,648**	**32,393**	**34,167**	**35,979**	**37,788**	**39,654**	**41,549**	**43,478**
Percent of Utility Forecast	33.25%	31.07%	29.05%	30.54%	32.00%	33.51%	34.99%	36.59%	38.14%	39.73%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	5,668	6,090	6,774	7,478	8,198	8,936	9,685	10,449	11,228	12,022
Non-Residential	3,346	3,747	3,768	3,792	3,814	3,836	3,850	3,869	3,887	3,905
Total All Buildings	**9,014**	**9,837**	**10,542**	**11,270**	**12,012**	**12,771**	**13,534**	**14,318**	**15,115**	**15,927**
Percent of Utility Forecast	41.96%	42.64%	43.34%	46.24%	48.75%	51.56%	54.39%	57.28%	60.20%	63.26%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	7,750	7,183	8,106	9,055	10,027	11,021	12,032	13,063	14,113	15,183
Non-Residential	13,136	14,676	14,757	14,853	14,938	15,022	15,077	15,153	15,223	15,294
Total All Buildings	**20,886**	**21,860**	**22,863**	**23,908**	**24,965**	**26,044**	**27,109**	**28,215**	**29,336**	**30,477**
Percent of Utility Forecast	25.40%	23.45%	21.67%	22.54%	23.38%	24.25%	25.10%	26.03%	26.93%	27.85%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3,679	3,693	3,949	4,213	4,482	4,759	5,039	5,325	5,617	5,914
Non-Residential	3,098	3,467	3,486	3,508	3,529	3,549	3,562	3,579	3,596	3,613
Total All Buildings	**6,776**	**7,160**	**7,435**	**7,721**	**8,011**	**8,307**	**8,601**	**8,905**	**9,213**	**9,527**
Percent of Utility Forecast	31.55%	31.03%	30.57%	31.68%	32.51%	33.54%	34.56%	35.62%	36.69%	37.84%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	101	54	61	68	76	84	88	92	94	97
Non-Residential	318	368	394	442	475	514	520	520	517	512
Total All Buildings	**419**	**422**	**455**	**510**	**552**	**598**	**609**	**612**	**611**	**608**
Percent of Utility Forecast	0.51%	0.45%	0.43%	0.48%	0.52%	0.56%	0.56%	0.56%	0.56%	0.56%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	35	28	31	35	42	49	55	59	60	60
Non-Residential	74	85	90	100	108	117	120	121	121	121
Total All Buildings	**108**	**114**	**122**	**136**	**150**	**166**	**175**	**180**	**181**	**181**
Percent of Utility Forecast	0.50%	0.49%	0.50%	0.56%	0.61%	0.67%	0.70%	0.72%	0.72%	0.72%

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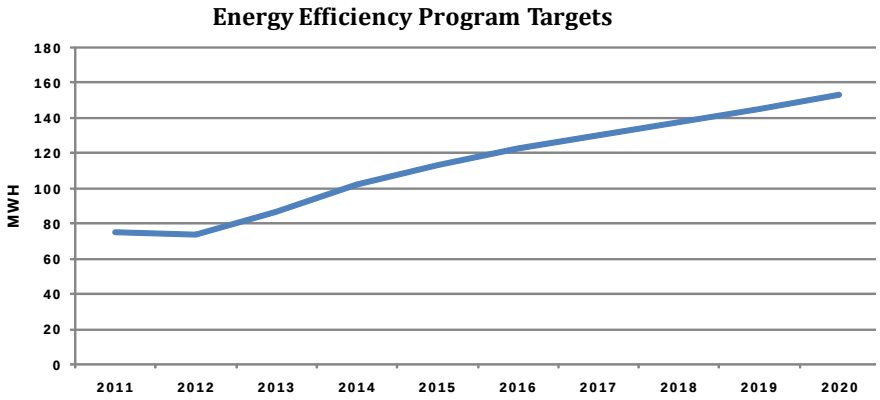

MWH	**75**	**74**	**86**	**102**	**113**	**122**	**130**	**137**	**145**	**153**
% of Load Forecast	0.48%	0.44%	0.49%	0.54%	0.55%	0.56%	0.55%	0.54%	0.53%	0.52%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,527	1,483	1,829	2,283	2,860	3,576	4,449	5,499	6,749	8,225
Non-Residential	4,882	5,046	5,277	5,519	5,772	6,037	6,313	6,602	6,905	7,221
Total All Buildings	**6,409**	**6,529**	**7,106**	**7,802**	**8,632**	**9,613**	**10,762**	**12,101**	**13,653**	**15,446**
Percent of Utility Forecast	41.02%	39.14%	39.86%	40.89%	42.22%	43.82%	45.66%	47.72%	49.97%	52.39%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	272	274	340	426	537	673	840	1,041	1,279	1,561
Non-Residential	1,198	1,240	1,297	1,357	1,419	1,484	1,552	1,623	1,697	1,775
Total All Buildings	**1,471**	**1,514**	**1,637**	**1,783**	**1,956**	**2,157**	**2,392**	**2,664**	**2,977**	**3,336**
Percent of Utility Forecast	41.87%	38.82%	37.80%	38.48%	39.38%	40.49%	41.78%	43.24%	44.85%	46.59%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,437	1,378	1,704	2,132	2,675	3,349	4,171	5,159	6,336	7,725
Non-Residential	4,371	4,512	4,719	4,935	5,161	5,397	5,645	5,903	6,174	6,456
Total All Buildings	**5,808**	**5,890**	**6,422**	**7,066**	**7,836**	**8,746**	**9,815**	**11,062**	**12,509**	**14,182**
Percent of Utility Forecast	37.18%	35.31%	36.02%	37.03%	38.32%	39.87%	41.64%	43.62%	45.78%	48.10%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	232	223	275	343	429	537	668	825	1,012	1,234
Non-Residential	987	1,020	1,067	1,116	1,167	1,220	1,276	1,334	1,396	1,459
Total All Buildings	**1,219**	**1,243**	**1,341**	**1,458**	**1,596**	**1,757**	**1,944**	**2,159**	**2,408**	**2,693**
Percent of Utility Forecast	34.71%	31.86%	30.97%	31.47%	32.14%	32.97%	33.95%	35.06%	36.28%	37.61%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	14	7	9	11	13	15	17	19	22	25
Non-Residential	61	66	77	91	100	107	113	118	123	128
Total All Buildings	**75**	**74**	**86**	**102**	**113**	**122**	**130**	**137**	**145**	**153**
Percent of Utility Forecast	0.48%	0.44%	0.49%	0.54%	0.55%	0.56%	0.55%	0.54%	0.53%	0.52%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	2	1	2	2	2	2	3	3	4	4
Non-Residential	14	15	17	21	23	26	27	28	29	30
Total All Buildings	**16**	**16**	**19**	**23**	**25**	**28**	**30**	**31**	**33**	**34**
Percent of Utility Forecast	0.46%	0.42%	0.44%	0.49%	0.51%	0.52%	0.52%	0.50%	0.49%	0.48%

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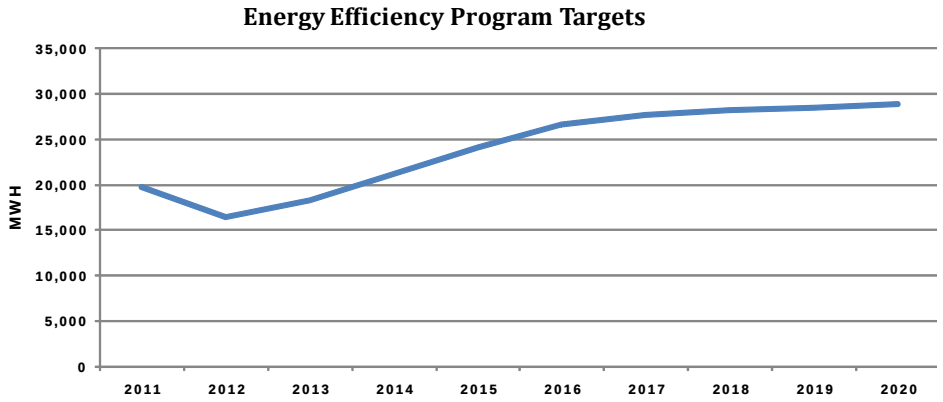

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	**19,743**	**16,480**	**18,381**	**21,281**	**24,147**	**26,614**	**27,674**	**28,234**	**28,576**	**28,910**
% of Load Forecast	0.51%	0.42%	0.46%	0.52%	0.58%	0.63%	0.64%	0.64%	0.63%	0.63%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	374,612	343,890	355,007	367,910	382,634	399,213	417,681	438,075	460,432	484,788
Non-Residential	1,195,292	1,202,448	1,225,957	1,249,931	1,274,380	1,299,314	1,324,741	1,350,673	1,377,119	1,404,089
Total All Buildings	**1,569,905**	**1,546,337**	**1,580,963**	**1,617,841**	**1,657,014**	**1,698,526**	**1,742,422**	**1,788,748**	**1,837,550**	**1,888,877**
Percent of Utility Forecast	40.64%	39.27%	39.38%	39.52%	39.70%	39.92%	40.16%	40.44%	40.74%	41.08%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	154,136	150,435	153,476	157,015	161,061	165,623	170,712	176,337	182,508	189,237
Non-Residential	240,154	241,657	246,381	251,199	256,113	261,124	266,234	271,446	276,760	282,181
Total All Buildings	**394,290**	**392,092**	**399,858**	**408,215**	**417,174**	**426,747**	**436,946**	**447,782**	**459,269**	**471,418**
Percent of Utility Forecast	39.59%	38.81%	38.80%	38.83%	38.91%	38.84%	43.94%	44.87%	45.86%	46.90%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	350,026	317,995	327,564	338,673	351,352	365,632	381,541	399,111	418,374	439,362
Non-Residential	1,145,692	1,151,878	1,174,398	1,197,364	1,220,785	1,244,670	1,269,028	1,293,869	1,319,203	1,345,039
Total All Buildings	**1,495,718**	**1,469,873**	**1,501,962**	**1,536,037**	**1,572,137**	**1,610,301**	**1,650,569**	**1,692,980**	**1,737,577**	**1,784,401**
Percent of Utility Forecast	38.72%	37.32%	37.41%	37.52%	37.67%	37.84%	38.05%	38.27%	38.53%	38.81%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	135,344	130,165	131,457	132,971	134,711	136,681	138,886	141,329	144,016	146,952
Non-Residential	231,903	233,244	237,804	242,455	247,197	252,034	256,966	261,996	267,126	272,357
Total All Buildings	**367,247**	**363,409**	**369,261**	**375,426**	**381,908**	**388,715**	**395,852**	**403,325**	**411,142**	**419,309**
Percent of Utility Forecast	36.88%	35.97%	35.83%	35.71%	35.62%	35.38%	39.80%	40.41%	41.05%	41.72%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	9,724	5,948	6,570	7,416	8,543	9,465	9,757	9,753	9,527	9,287
Non-Residential	10,019	10,532	11,811	13,865	15,605	17,149	17,917	18,481	19,050	19,623
Total All Buildings	**19,743**	**16,480**	**18,381**	**21,281**	**24,147**	**26,614**	**27,674**	**28,234**	**28,576**	**28,910**
Percent of Utility Forecast	0.51%	0.42%	0.46%	0.52%	0.58%	0.63%	0.64%	0.64%	0.63%	0.63%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	2,730	2,149	2,305	2,602	3,077	3,645	4,033	4,094	3,926	3,743
Non-Residential	2,053	2,165	2,426	2,834	3,170	3,479	3,637	3,750	3,863	3,977
Total All Buildings	**4,783**	**4,313**	**4,731**	**5,436**	**6,247**	**7,124**	**7,670**	**7,844**	**7,790**	**7,720**
Percent of Utility Forecast	0.48%	0.43%	0.46%	0.52%	0.58%	0.65%	0.77%	0.79%	0.78%	0.77%

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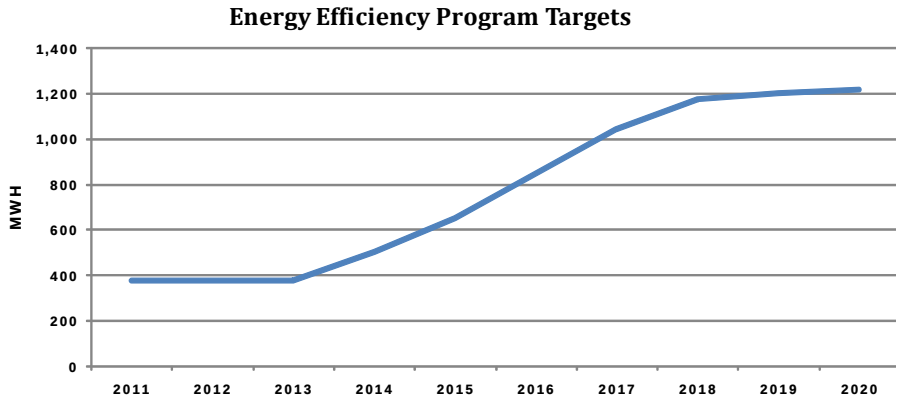

MWH	**375**	**375**	**375**	**501**	**650**	**849**	**1,043**	**1,177**	**1,203**	**1,219**
% of Load Forecast	0.25%	0.25%	0.24%	0.32%	0.41%	0.54%	0.65%	0.73%	0.74%	0.74%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	62,371	59,380	60,275	61,364	62,650	64,133	65,817	67,701	69,790	72,083
Non-Residential	37,128	37,095	37,460	37,829	38,201	38,577	38,957	39,341	39,728	40,119
Total All Buildings	**99,499**	**96,475**	**97,735**	**99,193**	**100,851**	**102,711**	**104,774**	**107,042**	**109,518**	**112,202**
Percent of Utility Forecast	65.99%	63.36%	63.57%	63.89%	64.32%	64.87%	65.52%	66.29%	67.16%	68.14%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	14,918	13,570	13,805	14,089	14,425	14,812	15,250	15,742	16,286	16,883
Non-Residential	6,911	6,912	6,980	7,049	7,118	7,188	7,259	7,331	7,403	7,476
Total All Buildings	**21,829**	**20,483**	**20,785**	**21,138**	**21,543**	**22,000**	**22,510**	**23,072**	**23,688**	**24,359**
Percent of Utility Forecast	71.68%	66.54%	66.81%	67.22%	67.78%	68.49%	69.33%	70.31%	71.42%	72.66%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	40,536	37,435	37,876	38,414	39,051	39,787	40,624	41,561	42,600	43,742
Non-Residential	31,526	31,438	31,747	32,060	32,375	32,694	33,016	33,341	33,669	34,001
Total All Buildings	**72,061**	**68,873**	**69,623**	**70,474**	**71,427**	**72,481**	**73,640**	**74,902**	**76,269**	**77,743**
Percent of Utility Forecast	47.80%	45.24%	45.28%	45.39%	45.55%	45.78%	46.05%	46.39%	46.77%	47.21%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	11,143	9,825	10,012	10,239	10,507	10,816	11,166	11,558	11,991	12,467
Non-Residential	6,170	6,164	6,224	6,286	6,348	6,410	6,473	6,537	6,601	6,666
Total All Buildings	**17,313**	**15,989**	**16,237**	**16,525**	**16,855**	**17,226**	**17,639**	**18,095**	**18,593**	**19,133**
Percent of Utility Forecast	56.85%	51.94%	52.19%	52.55%	53.03%	53.63%	54.33%	55.14%	56.05%	57.07%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	316	198	236	302	425	606	788	911	928	935
Non-Residential	137	145	164	194	218	234	244	253	262	272
Total All Buildings	**453**	**343**	**400**	**496**	**643**	**840**	**1,032**	**1,164**	**1,190**	**1,206**
Percent of Utility Forecast	0.30%	0.23%	0.26%	0.32%	0.41%	0.53%	0.65%	0.72%	0.73%	0.73%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	159	107	116	128	143	158	168	175	178	180
Non-Residential	28	30	33	38	43	46	48	50	52	54
Total All Buildings	**188**	**137**	**149**	**166**	**186**	**204**	**216**	**225**	**230**	**234**
Percent of Utility Forecast	0.62%	0.44%	0.48%	0.53%	0.59%	0.64%	0.67%	0.69%	0.69%	0.70%

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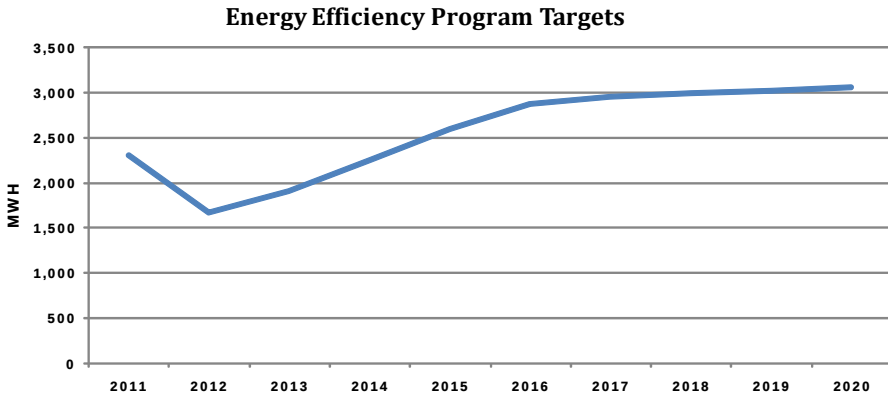

MWH	**2,296**	**1,667**	**1,905**	**2,242**	**2,587**	**2,873**	**2,948**	**2,985**	**3,019**	**3,053**
% of Load Forecast	0.49%	0.35%	0.39%	0.46%	0.52%	0.58%	0.59%	0.59%	0.59%	0.59%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	55,213	48,695	50,109	51,719	53,514	55,500	57,642	59,951	62,425	65,065
Non-Residential	127,262	127,291	128,327	129,543	130,695	131,887	132,834	133,857	134,865	135,881
Total All Buildings	**182,475**	**175,986**	**178,437**	**181,262**	**184,209**	**187,387**	**190,476**	**193,808**	**197,291**	**200,947**
Percent of Utility Forecast	38.63%	36.64%	36.77%	37.05%	37.30%	37.61%	37.88%	38.27%	38.66%	39.08%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	25,704	24,897	25,360	25,887	26,477	27,130	27,835	28,596	29,412	30,283
Non-Residential	27,514	27,526	27,750	28,013	28,262	28,520	28,725	28,946	29,164	29,384
Total All Buildings	**53,218**	**52,423**	**53,110**	**53,900**	**54,739**	**55,650**	**56,560**	**57,542**	**58,576**	**59,666**
Percent of Utility Forecast	43.03%	42.13%	42.44%	42.83%	43.25%	43.76%	44.28%	44.86%	45.47%	46.12%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	43,512	36,105	36,511	36,976	37,497	38,076	38,703	39,380	40,106	40,883
Non-Residential	123,235	123,222	124,225	125,402	126,517	127,671	128,588	129,578	130,554	131,538
Total All Buildings	**166,747**	**159,326**	**160,736**	**162,378**	**164,015**	**165,747**	**167,290**	**168,957**	**170,660**	**172,421**
Percent of Utility Forecast	35.30%	33.17%	33.12%	33.19%	33.21%	33.26%	33.27%	33.36%	33.44%	33.53%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	12,910	11,983	12,307	12,675	13,087	13,543	14,034	14,564	15,131	15,737
Non-Residential	26,485	26,486	26,702	26,955	27,195	27,443	27,640	27,852	28,062	28,274
Total All Buildings	**39,395**	**38,469**	**39,009**	**39,630**	**40,282**	**40,985**	**41,674**	**42,416**	**43,194**	**44,011**
Percent of Utility Forecast	31.85%	30.92%	31.17%	31.49%	31.83%	32.23%	32.63%	33.07%	33.53%	34.02%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,227	520	609	699	792	852	864	866	866	864
Non-Residential	1,069	1,147	1,296	1,544	1,795	2,021	2,085	2,119	2,154	2,189
Total All Buildings	**2,296**	**1,667**	**1,905**	**2,242**	**2,587**	**2,873**	**2,948**	**2,985**	**3,019**	**3,053**
Percent of Utility Forecast	0.49%	0.35%	0.39%	0.46%	0.52%	0.58%	0.59%	0.59%	0.59%	0.59%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	237	128	145	166	196	234	264	269	271	272
Non-Residential	223	240	270	318	364	403	419	431	442	454
Total All Buildings	**461**	**367**	**415**	**484**	**560**	**638**	**683**	**700**	**714**	**726**
Percent of Utility Forecast	0.37%	0.30%	0.33%	0.38%	0.44%	0.50%	0.53%	0.55%	0.55%	0.56%

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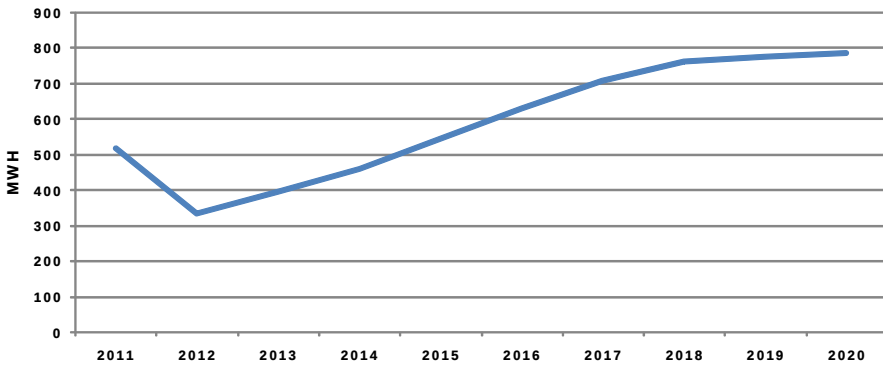

MWH	**517**	**336**	**395**	**459**	**544**	**630**	**708**	**760**	**776**	**785**
% of Load Forecast	0.36%	0.23%	0.27%	0.31%	0.37%	0.43%	0.48%	0.51%	0.52%	0.52%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	21,751	17,368	17,829	18,358	18,946	19,591	20,282	21,023	21,813	22,654
Non-Residential	18,918	18,447	18,573	18,709	18,824	18,934	19,018	19,113	19,207	19,301
Total All Buildings	**40,669**	**35,815**	**36,402**	**37,066**	**37,769**	**38,525**	**39,300**	**40,136**	**41,020**	**41,955**
Percent of Utility Forecast	28.57%	24.89%	25.08%	25.37%	25.66%	26.02%	26.38%	26.83%	27.28%	27.77%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	4,366	3,717	3,827	3,955	4,096	4,251	4,417	4,595	4,785	4,987
Non-Residential	4,076	3,978	4,005	4,034	4,059	4,083	4,101	4,122	4,142	4,162
Total All Buildings	**8,442**	**7,695**	**7,833**	**7,989**	**8,155**	**8,334**	**8,518**	**8,717**	**8,927**	**9,149**
Percent of Utility Forecast	32.71%	29.64%	29.96%	30.42%	30.86%	31.41%	31.98%	32.60%	33.26%	33.96%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	18,948	14,829	15,171	15,563	16,000	16,479	16,992	17,543	18,130	18,755
Non-Residential	11,326	10,791	10,865	10,944	11,011	11,076	11,125	11,181	11,235	11,291
Total All Buildings	**30,274**	**25,620**	**26,035**	**26,507**	**27,011**	**27,555**	**28,117**	**28,723**	**29,366**	**30,046**
Percent of Utility Forecast	21.27%	17.80%	17.94%	18.14%	18.35%	18.61%	18.88%	19.20%	19.53%	19.88%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3,105	2,445	2,500	2,563	2,633	2,711	2,793	2,882	2,977	3,078
Non-Residential	2,516	2,406	2,422	2,440	2,455	2,469	2,480	2,493	2,505	2,517
Total All Buildings	**5,622**	**4,850**	**4,922**	**5,003**	**5,088**	**5,180**	**5,274**	**5,375**	**5,482**	**5,595**
Percent of Utility Forecast	21.78%	18.68%	18.83%	19.05%	19.25%	19.52%	19.80%	20.10%	20.42%	20.77%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	356	176	213	251	296	325	342	357	370	381
Non-Residential	161	159	182	208	249	305	366	404	407	404
Total All Buildings	**517**	**336**	**395**	**459**	**544**	**630**	**708**	**760**	**776**	**785**
Percent of Utility Forecast	0.36%	0.23%	0.27%	0.31%	0.37%	0.43%	0.48%	0.51%	0.52%	0.52%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	59	30	36	43	50	56	58	60	62	64
Non-Residential	33	33	38	44	55	70	83	91	92	92
Total All Buildings	**92**	**63**	**74**	**87**	**105**	**125**	**141**	**152**	**155**	**156**
Percent of Utility Forecast	0.36%	0.24%	0.28%	0.33%	0.40%	0.47%	0.53%	0.57%	0.58%	0.58%

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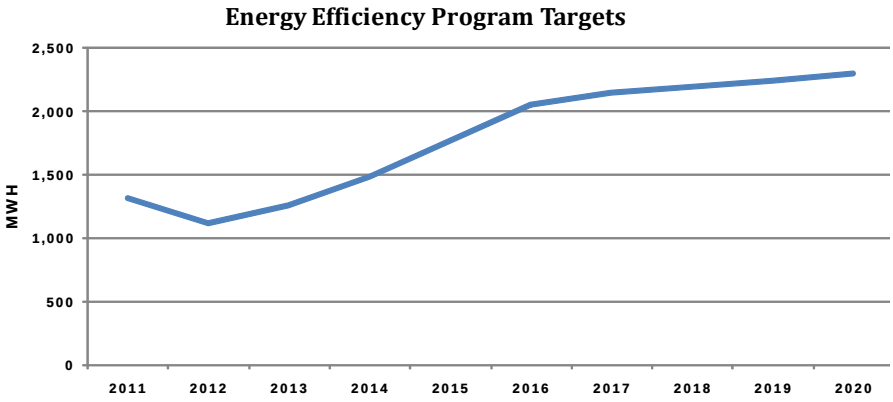

MWH	**1,316**	**1,117**	**1,258**	**1,483**	**1,765**	**2,054**	**2,143**	**2,191**	**2,242**	**2,297**
% of Load Forecast	0.27%	0.22%	0.25%	0.29%	0.33%	0.38%	0.38%	0.38%	0.38%	0.38%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	15,469	14,342	15,370	16,538	17,851	19,313	20,926	22,695	24,623	26,714
Non-Residential	170,817	173,428	177,715	182,113	186,624	191,252	196,018	200,873	205,849	210,949
Total All Buildings	**186,286**	**187,770**	**193,085**	**198,651**	**204,475**	**210,565**	**216,944**	**223,568**	**230,472**	**237,663**
Percent of Utility Forecast	38.69%	37.81%	38.06%	38.21%	38.38%	38.57%	38.78%	38.99%	39.22%	39.47%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	6,951	6,926	7,260	7,641	8,069	8,546	9,072	9,650	10,279	10,962
Non-Residential	32,454	32,931	33,745	34,581	35,437	36,316	37,221	38,143	39,088	40,056
Total All Buildings	**39,406**	**39,857**	**41,006**	**42,221**	**43,506**	**44,861**	**46,293**	**47,792**	**49,367**	**51,018**
Percent of Utility Forecast	39.33%	38.73%	39.02%	39.23%	39.46%	39.73%	40.03%	40.34%	40.68%	41.04%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	12,548	11,178	11,925	12,774	13,728	14,791	15,964	17,250	18,652	20,172
Non-Residential	166,332	168,846	173,020	177,302	181,694	186,200	190,839	195,567	200,411	205,376
Total All Buildings	**178,880**	**180,024**	**184,945**	**190,076**	**195,422**	**200,990**	**206,803**	**212,817**	**219,063**	**225,548**
Percent of Utility Forecast	37.15%	36.25%	36.45%	36.56%	36.68%	36.82%	36.96%	37.11%	37.28%	37.46%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3,450	3,227	3,333	3,454	3,590	3,742	3,909	4,093	4,294	4,512
Non-Residential	30,721	31,161	31,931	32,721	33,532	34,363	35,219	36,092	36,986	37,902
Total All Buildings	**34,171**	**34,387**	**35,264**	**36,175**	**37,121**	**38,105**	**39,129**	**40,185**	**41,280**	**42,414**
Percent of Utility Forecast	34.10%	33.41%	33.55%	33.61%	33.67%	33.75%	33.83%	33.92%	34.02%	34.12%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	563	302	335	374	422	446	435	421	410	401
Non-Residential	752	815	923	1,109	1,343	1,608	1,709	1,770	1,833	1,896
Total All Buildings	**1,316**	**1,117**	**1,258**	**1,483**	**1,765**	**2,054**	**2,143**	**2,191**	**2,242**	**2,297**
Percent of Utility Forecast	0.27%	0.22%	0.25%	0.29%	0.33%	0.38%	0.38%	0.38%	0.38%	0.38%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	128	87	93	103	121	140	148	137	127	118
Non-Residential	127	137	156	186	221	259	275	287	298	310
Total All Buildings	**255**	**224**	**249**	**289**	**342**	**399**	**423**	**424**	**425**	**428**
Percent of Utility Forecast	0.25%	0.22%	0.24%	0.27%	0.31%	0.35%	0.37%	0.36%	0.35%	0.34%

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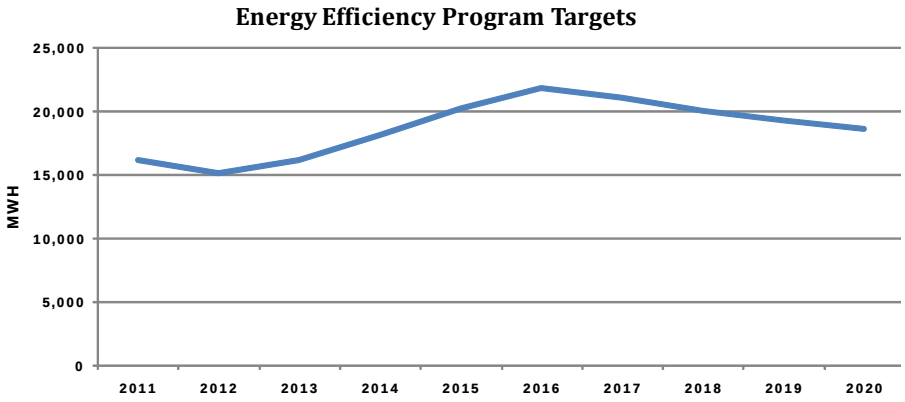


MWH	**16,207**	**15,136**	**16,154**	**18,161**	**20,252**	**21,857**	**21,102**	**20,074**	**19,258**	**18,623**
% of Load Forecast	0.63%	0.58%	0.61%	0.67%	0.74%	0.78%	0.74%	0.69%	0.65%	0.62%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	231,289	203,694	211,003	220,274	231,565	244,935	260,446	278,163	298,154	320,489
Non-Residential	566,855	570,964	578,295	586,074	594,592	603,222	612,440	622,086	632,432	643,204
Total All Buildings	**798,144**	**774,659**	**789,297**	**806,348**	**826,157**	**848,157**	**872,887**	**900,250**	**930,586**	**963,693**
Percent of Utility Forecast	31.06%	29.65%	29.66%	29.80%	30.02%	30.29%	30.64%	31.02%	31.46%	31.93%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	106,781	103,339	105,672	108,643	112,269	116,569	121,564	127,275	133,723	140,932
Non-Residential	114,755	115,544	117,028	118,602	120,326	122,072	123,938	125,890	127,983	130,163
Total All Buildings	**221,536**	**218,883**	**222,700**	**227,245**	**232,594**	**238,641**	**245,502**	**253,165**	**261,707**	**271,096**
Percent of Utility Forecast	32.77%	31.77%	31.72%	31.74%	31.86%	32.08%	32.39%	32.67%	33.09%	33.55%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	188,678	159,611	164,929	171,678	179,900	189,639	200,938	213,846	228,411	244,686
Non-Residential	551,541	555,413	562,544	570,111	578,397	586,792	595,759	605,143	615,207	625,685
Total All Buildings	**740,219**	**715,024**	**727,473**	**741,790**	**758,297**	**776,431**	**796,698**	**818,988**	**843,618**	**870,371**
Percent of Utility Forecast	28.81%	27.37%	27.34%	27.42%	27.56%	27.73%	27.97%	28.22%	28.52%	28.84%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	54,009	49,393	50,134	51,082	52,243	53,622	55,227	57,064	59,141	61,464
Non-Residential	109,941	110,655	112,076	113,584	115,235	116,907	118,694	120,563	122,568	124,656
Total All Buildings	**163,950**	**160,048**	**162,211**	**164,666**	**167,478**	**170,530**	**173,921**	**177,627**	**181,709**	**186,120**
Percent of Utility Forecast	24.25%	23.23%	23.11%	23.00%	22.94%	22.92%	22.94%	22.92%	22.97%	23.03%

Market Potential

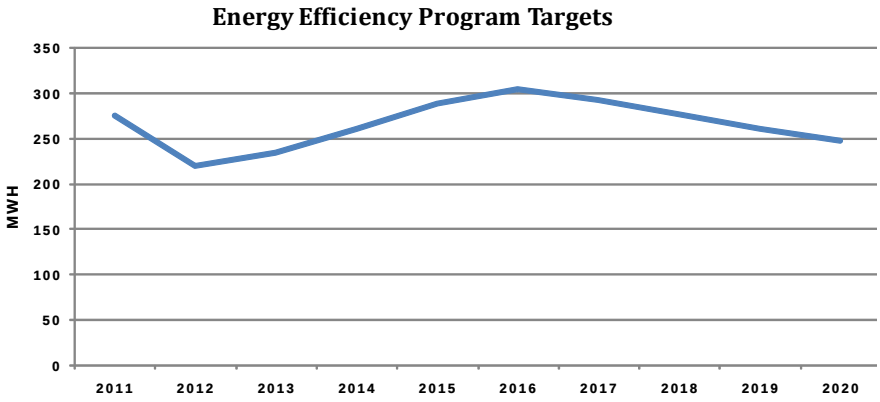
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	2,760	1,499	1,695	1,929	2,231	2,454	2,511	2,550	2,586	2,622
Non-Residential	13,447	13,638	14,458	16,232	18,021	19,403	18,590	17,525	16,672	16,001
Total All Buildings	**16,207**	**15,136**	**16,154**	**18,161**	**20,252**	**21,857**	**21,102**	**20,074**	**19,258**	**18,623**
Percent of Utility Forecast	0.63%	0.58%	0.61%	0.67%	0.74%	0.78%	0.74%	0.69%	0.65%	0.62%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	646	453	498	565	679	817	910	916	914	911
Non-Residential	2,563	2,612	2,781	3,108	3,409	3,622	3,531	3,403	3,300	3,218
Total All Buildings	**3,209**	**3,065**	**3,279**	**3,674**	**4,088**	**4,439**	**4,441**	**4,320**	**4,214**	**4,129**
Percent of Utility Forecast	0.47%	0.44%	0.47%	0.51%	0.56%	0.60%	0.59%	0.56%	0.53%	0.51%

MORENO VALLEY



MWH	**274**	**219**	**234**	**260**	**288**	**304**	**292**	**276**	**261**	**247**
% of Load Forecast	0.31%	0.25%	0.26%	0.29%	0.33%	0.34%	0.33%	0.31%	0.29%	0.28%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	9,265	8,348	8,358	8,371	8,387	8,408	8,431	8,458	8,489	8,523
Non-Residential	3,306	3,268	3,268	3,268	3,268	3,268	3,268	3,268	3,268	3,268
Total All Buildings	**12,571**	**11,616**	**11,625**	**11,638**	**11,655**	**11,675**	**11,699**	**11,726**	**11,757**	**11,791**
Percent of Utility Forecast	14.21%	13.13%	13.14%	13.16%	13.18%	13.20%	13.23%	13.26%	13.29%	13.33%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3,986	3,842	3,844	3,846	3,850	3,855	3,860	3,867	3,875	3,884
Non-Residential	796	787	787	787	787	787	787	787	787	787
Total All Buildings	**4,782**	**4,629**	**4,631**	**4,633**	**4,637**	**4,642**	**4,648**	**4,654**	**4,662**	**4,671**
Percent of Utility Forecast	24.90%	24.11%	24.12%	24.13%	24.15%	24.18%	24.21%	24.24%	24.28%	24.33%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	7,971	7,053	7,059	7,069	7,081	7,096	7,113	7,133	7,156	7,182
Non-Residential	3,251	3,212	3,212	3,212	3,212	3,212	3,212	3,212	3,212	3,212
Total All Buildings	**11,222**	**10,265**	**10,271**	**10,281**	**10,293**	**10,307**	**10,325**	**10,345**	**10,368**	**10,394**
Percent of Utility Forecast	12.69%	11.60%	11.61%	11.62%	11.64%	11.65%	11.67%	11.70%	11.72%	11.75%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	2,126	1,981	1,981	1,981	1,982	1,983	1,985	1,987	1,989	1,992
Non-Residential	782	773	773	773	773	773	773	773	773	773
Total All Buildings	**2,907**	**2,754**	**2,754**	**2,755**	**2,755**	**2,757**	**2,758**	**2,760**	**2,762**	**2,765**
Percent of Utility Forecast	15.14%	14.35%	14.35%	14.35%	14.35%	14.36%	14.37%	14.38%	14.39%	14.40%

Market Potential

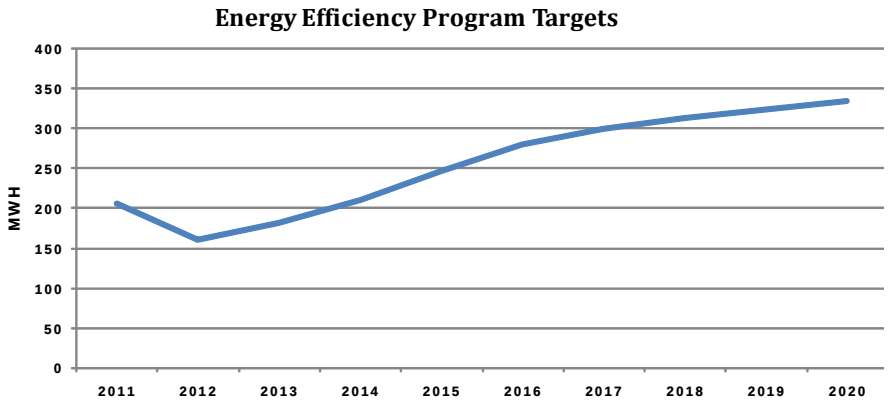
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	147	96	107	123	146	163	162	160	157	155
Non-Residential	128	123	127	137	143	141	129	116	103	92
Total All Buildings	**274**	**219**	**234**	**260**	**288**	**304**	**292**	**276**	**261**	**247**
Percent of Utility Forecast	0.31%	0.25%	0.26%	0.29%	0.33%	0.34%	0.33%	0.31%	0.29%	0.28%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	36	28	30	35	42	50	52	50	48	47
Non-Residential	29	28	29	31	33	34	31	28	25	22
Total All Buildings	**65**	**56**	**59**	**66**	**75**	**84**	**84**	**78**	**73**	**69**
Percent of Utility Forecast	0.34%	0.29%	0.31%	0.34%	0.39%	0.44%	0.44%	0.41%	0.38%	0.36%

NEEDLES



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	**205**	**160**	**181**	**211**	**246**	**280**	**299**	**312**	**323**	**334**
% of Load Forecast	0.33%	0.25%	0.27%	0.30%	0.33%	0.36%	0.37%	0.37%	0.37%	0.37%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	7,617	7,085	7,442	7,881	8,405	9,019	9,725	10,527	11,430	12,438
Non-Residential	15,079	15,510	16,169	16,857	17,573	18,321	19,099	19,912	20,758	21,641
Total All Buildings	**22,695**	**22,595**	**23,611**	**24,738**	**25,979**	**27,339**	**28,824**	**30,439**	**32,188**	**34,079**
Percent of Utility Forecast	36.28%	34.65%	34.73%	34.90%	35.16%	35.49%	35.89%	36.36%	36.88%	37.45%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3,103	3,051	3,148	3,266	3,408	3,574	3,766	3,983	4,228	4,502
Non-Residential	2,860	2,942	3,067	3,197	3,333	3,475	3,623	3,777	3,937	4,105
Total All Buildings	**5,963**	**5,993**	**6,215**	**6,463**	**6,741**	**7,049**	**7,388**	**7,760**	**8,166**	**8,607**
Percent of Utility Forecast	28.47%	27.33%	27.06%	26.88%	26.78%	26.74%	26.76%	26.84%	26.98%	27.15%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	7,141	6,572	6,881	7,262	7,716	8,247	8,859	9,554	10,337	11,210
Non-Residential	14,240	14,636	15,258	15,907	16,583	17,288	18,023	18,789	19,588	20,421
Total All Buildings	**21,382**	**21,208**	**22,139**	**23,168**	**24,299**	**25,535**	**26,882**	**28,344**	**29,925**	**31,631**
Percent of Utility Forecast	34.18%	32.52%	32.57%	32.69%	32.89%	33.15%	33.48%	33.86%	34.29%	34.76%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	2,742	2,648	2,691	2,744	2,808	2,882	2,969	3,067	3,178	3,302
Non-Residential	2,721	2,797	2,916	3,040	3,169	3,304	3,444	3,591	3,743	3,903
Total All Buildings	**5,462**	**5,445**	**5,607**	**5,784**	**5,977**	**6,186**	**6,413**	**6,658**	**6,922**	**7,205**
Percent of Utility Forecast	26.08%	24.83%	24.42%	24.05%	23.74%	23.47%	23.23%	23.03%	22.87%	22.73%

Market Potential

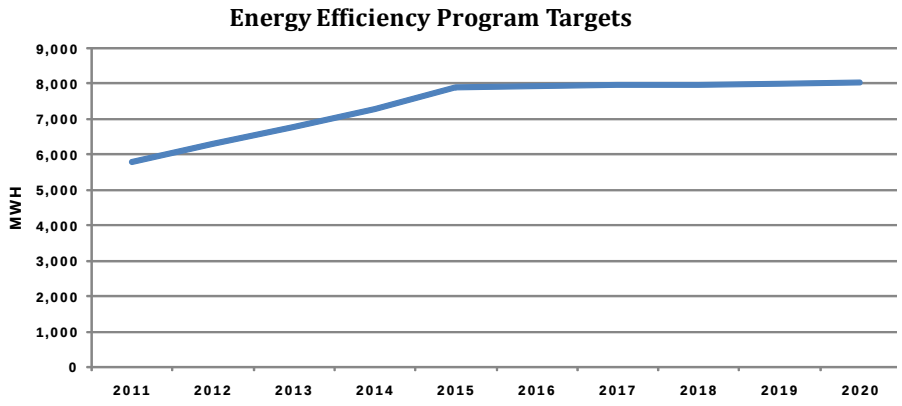
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	149	100	112	128	149	168	178	183	184	186
Non-Residential	55	60	69	83	97	112	121	129	138	148
Total All Buildings	**205**	**160**	**181**	**211**	**246**	**280**	**299**	**312**	**323**	**334**
Percent of Utility Forecast	0.33%	0.25%	0.27%	0.30%	0.33%	0.36%	0.37%	0.37%	0.37%	0.37%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	48	41	45	51	60	70	79	81	80	79
Non-Residential	11	12	13	16	19	22	24	25	27	29
Total All Buildings	**59**	**53**	**58**	**67**	**79**	**92**	**102**	**107**	**108**	**108**
Percent of Utility Forecast	0.28%	0.24%	0.25%	0.28%	0.31%	0.35%	0.37%	0.37%	0.36%	0.34%

PALO ALTO



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	**5,799**	**6,290**	**6,782**	**7,276**	**7,906**	**7,927**	**7,950**	**7,973**	**7,999**	**8,026**
% of Load Forecast	0.60%	0.65%	0.70%	0.75%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	46,014	38,229	38,210	38,190	38,168	38,145	38,122	38,100	38,078	38,055
Non-Residential	235,333	233,297	233,317	233,337	233,696	233,746	233,957	234,742	235,580	236,477
Total All Buildings	**281,347**	**271,526**	**271,526**	**271,527**	**271,864**	**271,890**	**272,080**	**272,842**	**273,658**	**274,532**
Percent of Utility Forecast	28.95%	28.09%	28.06%	28.02%	28.02%	27.51%	27.46%	27.46%	27.46%	27.46%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	17,456	16,237	16,228	16,219	16,209	16,198	16,188	16,178	16,168	16,158
Non-Residential	61,009	60,592	60,594	60,597	60,638	60,643	60,692	60,896	61,113	61,346
Total All Buildings	**78,465**	**76,829**	**76,822**	**76,816**	**76,846**	**76,842**	**76,881**	**77,074**	**77,281**	**77,504**
Percent of Utility Forecast	40.66%	40.02%	39.80%	39.80%	39.82%	39.61%	37.87%	37.78%	37.70%	37.81%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	41,878	34,095	34,077	34,060	34,039	34,018	33,998	33,978	33,957	33,937
Non-Residential	226,473	224,437	224,457	224,477	224,837	224,886	225,091	225,846	226,653	227,516
Total All Buildings	**268,351**	**258,532**	**258,534**	**258,536**	**258,876**	**258,904**	**259,089**	**259,824**	**260,610**	**261,453**
Percent of Utility Forecast	27.62%	26.75%	26.72%	26.68%	26.69%	26.20%	26.15%	26.15%	26.15%	26.15%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	10,152	8,937	8,931	8,924	8,918	8,911	8,905	8,898	8,892	8,885
Non-Residential	57,015	56,598	56,601	56,603	56,644	56,650	56,696	56,886	57,089	57,306
Total All Buildings	**67,167**	**65,535**	**65,531**	**65,527**	**65,562**	**65,561**	**65,601**	**65,784**	**65,981**	**66,192**
Percent of Utility Forecast	34.80%	34.13%	33.95%	33.95%	33.97%	33.79%	32.32%	32.25%	32.19%	32.29%

Market Potential

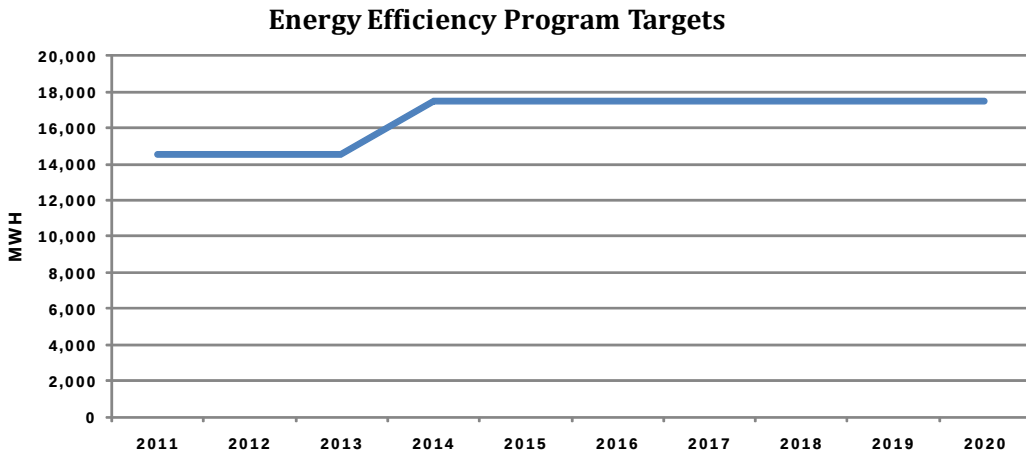
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,596	1,070	1,220	1,378	1,553	1,625	1,552	1,463	1,368	1,269
Non-Residential	4,079	5,105	5,655	6,542	7,286	7,654	7,586	7,445	7,282	7,098
Total All Buildings	**5,675**	**6,175**	**6,875**	**7,920**	**8,839**	**9,279**	**9,138**	**8,908**	**8,650**	**8,368**
Percent of Utility Forecast	0.58%	0.64%	0.71%	0.82%	0.91%	0.94%	0.92%	0.90%	0.87%	0.84%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	377	316	343	377	428	467	459	418	376	337
Non-Residential	1,000	1,261	1,398	1,611	1,778	1,863	1,858	1,839	1,812	1,777
Total All Buildings	**1,377**	**1,578**	**1,741**	**1,988**	**2,206**	**2,330**	**2,318**	**2,257**	**2,188**	**2,114**
Percent of Utility Forecast	0.71%	0.82%	0.90%	1.03%	1.14%	1.20%	1.14%	1.11%	1.07%	1.03%

PASADENA



MWH	**14,500**	**14,500**	**14,500**	**17,500**	**17,500**	**17,500**	**17,500**	**17,500**	**17,500**	**17,500**
% of Load Forecast	1.15%	1.13%	1.12%	1.33%	1.31%	1.29%	1.27%	1.25%	1.23%	1.22%

Market Potential

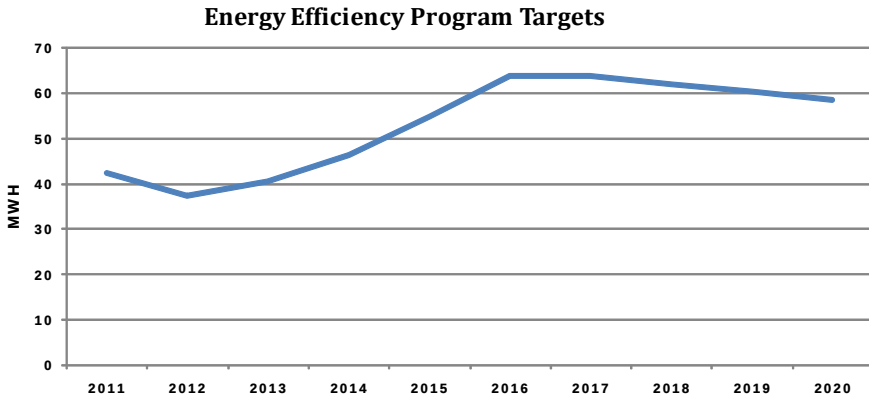
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	5,280	3,520	3,830	4,114	4,400	4,385	4,064	3,750	3,483	3,259
Non-Residential	8,831	9,261	10,198	11,777	12,929	13,680	13,861	13,908	13,955	13,996
Total All Buildings	**14,112**	**12,781**	**14,028**	**15,891**	**17,329**	**18,065**	**17,925**	**17,659**	**17,437**	**17,255**
Percent of Utility Forecast	1.12%	1.00%	1.08%	1.21%	1.30%	1.33%	1.30%	1.26%	1.23%	1.20%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,086	829	870	920	1,009	1,080	1,059	937	835	754
Non-Residential	2,070	2,179	2,399	2,762	3,033	3,226	3,284	3,307	3,327	3,345
Total All Buildings	**3,156**	**3,009**	**3,268**	**3,682**	**4,042**	**4,306**	**4,343**	**4,244**	**4,163**	**4,099**
Percent of Utility Forecast	1.01%	0.94%	1.00%	1.12%	1.23%	1.30%	1.31%	1.27%	1.24%	1.22%

PITTSBURG POWER / ISLAND ENERGY



MWH	**42**	**37**	**40**	**46**	**55**	**64**	**64**	**62**	**60**	**59**
% of Load Forecast	0.23%	0.21%	0.22%	0.26%	0.30%	0.35%	0.35%	0.34%	0.33%	0.32%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	643	550	550	551	552	553	554	556	558	560
Non-Residential	7,557	7,494	7,494	7,494	7,494	7,494	7,494	7,494	7,494	7,494
Total All Buildings	**8,200**	**8,043**	**8,044**	**8,044**	**8,045**	**8,046**	**8,048**	**8,049**	**8,051**	**8,053**
Percent of Utility Forecast	45.41%	44.54%	44.54%	44.55%	44.55%	44.56%	44.57%	44.58%	44.58%	44.60%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	308	293	293	293	294	294	294	295	295	296
Non-Residential	1,782	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768
Total All Buildings	**2,090**	**2,061**	**2,061**	**2,061**	**2,061**	**2,061**	**2,062**	**2,062**	**2,063**	**2,063**
Percent of Utility Forecast	46.44%	45.79%	45.80%	45.80%	45.80%	45.81%	45.82%	45.83%	45.84%	45.85%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	518	425	425	425	426	427	428	429	430	432
Non-Residential	7,424	7,361	7,361	7,361	7,361	7,361	7,361	7,361	7,361	7,361
Total All Buildings	**7,943**	**7,786**	**7,786**	**7,786**	**7,787**	**7,788**	**7,789**	**7,790**	**7,791**	**7,792**
Percent of Utility Forecast	43.98%	43.11%	43.12%	43.12%	43.12%	43.13%	43.13%	43.14%	43.14%	43.15%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	151	136	136	136	136	136	136	136	136	136
Non-Residential	1,702	1,688	1,688	1,688	1,688	1,688	1,688	1,688	1,688	1,688
Total All Buildings	**1,853**	**1,824**	**1,824**	**1,824**	**1,824**	**1,824**	**1,824**	**1,824**	**1,824**	**1,824**
Percent of Utility Forecast	41.17%	40.53%	40.53%	40.53%	40.53%	40.53%	40.53%	40.53%	40.53%	40.54%

Market Potential

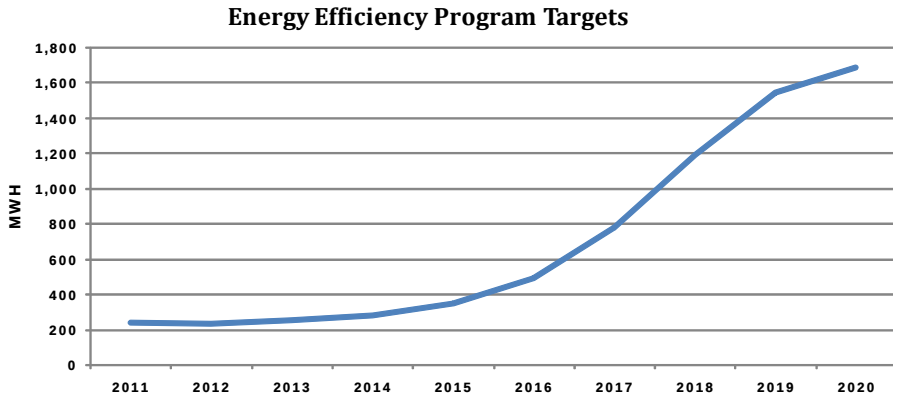
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	13	7	8	9	11	11	11	11	11	11
Non-Residential	29	30	32	37	44	52	52	51	49	48
Total All Buildings	**42**	**37**	**40**	**46**	**55**	**64**	**64**	**62**	**60**	**59**
Percent of Utility Forecast	0.23%	0.21%	0.22%	0.26%	0.30%	0.35%	0.35%	0.34%	0.33%	0.32%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3	2	3	3	4	4	5	4	4	4
Non-Residential	4	5	5	6	7	8	8	8	7	7
Total All Buildings	**8**	**7**	**7**	**9**	**10**	**12**	**12**	**12**	**12**	**12**
Percent of Utility Forecast	0.17%	0.15%	0.17%	0.19%	0.22%	0.26%	0.27%	0.27%	0.26%	0.26%

Plumas Sierra



MWH	**237**	**230**	**247**	**279**	**346**	**491**	**778**	**1,191**	**1,546**	**1,688**
% of Load Forecast	0.14%	0.13%	0.14%	0.15%	0.18%	0.26%	0.40%	0.61%	0.78%	0.84%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	44,767	43,400	44,869	46,602	48,564	50,748	53,112	55,679	58,450	61,426
Non-Residential	44,618	45,068	45,872	46,735	47,477	48,190	48,769	49,418	50,072	50,734
Total All Buildings	**89,385**	**88,468**	**90,740**	**93,337**	**96,041**	**98,937**	**101,881**	**105,098**	**108,522**	**112,161**
Percent of Utility Forecast	52.04%	50.00%	50.25%	50.78%	51.29%	52.01%	52.77%	53.78%	54.81%	55.91%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	10,731	9,976	10,359	10,810	11,321	11,890	12,505	13,173	13,894	14,669
Non-Residential	8,953	9,054	9,216	9,389	9,538	9,682	9,798	9,928	10,060	10,193
Total All Buildings	**19,684**	**19,030**	**19,575**	**20,200**	**20,860**	**21,571**	**22,303**	**23,102**	**23,954**	**24,862**
Percent of Utility Forecast	64.72%	61.70%	62.60%	63.73%	64.93%	66.48%	68.06%	69.81%	71.69%	73.69%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	31,188	29,211	29,947	30,817	31,803	32,901	34,091	35,383	36,778	38,277
Non-Residential	38,323	38,643	39,332	40,072	40,708	41,320	41,816	42,373	42,934	43,502
Total All Buildings	**69,511**	**67,854**	**69,279**	**70,889**	**72,511**	**74,220**	**75,907**	**77,756**	**79,711**	**81,778**
Percent of Utility Forecast	40.47%	38.35%	38.37%	38.57%	38.72%	39.02%	39.31%	39.79%	40.26%	40.76%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	5,480	4,568	4,762	4,991	5,251	5,539	5,851	6,190	6,555	6,948
Non-Residential	5,679	5,713	5,815	5,924	6,018	6,109	6,182	6,264	6,347	6,431
Total All Buildings	**11,158**	**10,281**	**10,577**	**10,915**	**11,269**	**11,647**	**12,033**	**12,454**	**12,902**	**13,379**
Percent of Utility Forecast	36.69%	33.33%	33.82%	34.44%	35.08%	35.90%	36.72%	37.63%	38.61%	39.66%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	140	127	135	151	185	260	413	638	850	972
Non-Residential	98	103	112	128	160	231	365	553	696	716
Total All Buildings	**237**	**230**	**247**	**279**	**346**	**491**	**778**	**1,191**	**1,546**	**1,688**
Percent of Utility Forecast	0.14%	0.13%	0.14%	0.15%	0.18%	0.26%	0.40%	0.61%	0.78%	0.84%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	21	14	15	17	19	24	33	45	54	60
Non-Residential	7	7	8	9	11	15	21	30	37	38
Total All Buildings	**28**	**21**	**23**	**26**	**30**	**39**	**54**	**75**	**91**	**98**
Percent of Utility Forecast	0.09%	0.07%	0.07%	0.08%	0.09%	0.12%	0.17%	0.23%	0.27%	0.29%

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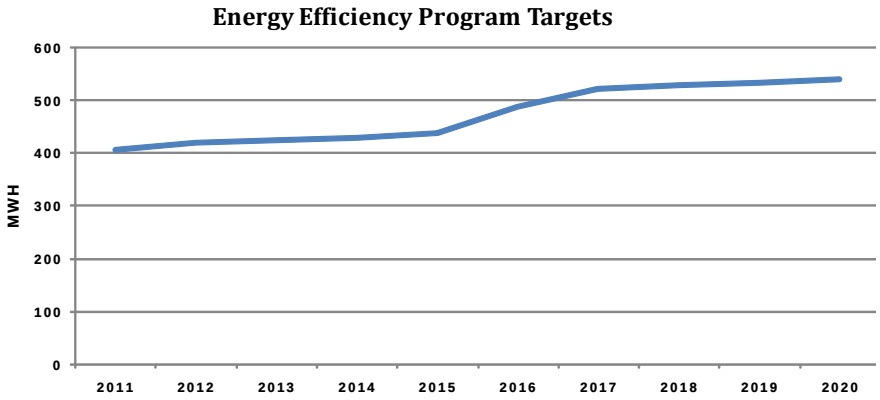

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	**406**	**420**	**424**	**430**	**437**	**488**	**523**	**529**	**533**	**541**
% of Load Forecast	0.52%	0.53%	0.51%	0.48%	0.48%	0.53%	0.56%	0.56%	0.56%	0.57%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	11,012	11,471	12,310	12,480	12,627	12,773	12,874	13,000	13,123	13,248
Total All Buildings	**11,012**	**11,471**	**12,310**	**12,480**	**12,627**	**12,773**	**12,874**	**13,000**	**13,123**	**13,248**
Percent of Utility Forecast	14.24%	14.36%	14.72%	13.91%	13.88%	13.88%	13.83%	13.85%	13.85%	13.85%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	1,980	2,060	2,211	2,242	2,268	2,294	2,313	2,335	2,357	2,380
Total All Buildings	**1,980**	**2,060**	**2,211**	**2,242**	**2,268**	**2,294**	**2,313**	**2,335**	**2,357**	**2,380**
Percent of Utility Forecast	15.99%	16.04%	16.28%	15.06%	14.94%	14.87%	14.77%	14.70%	14.63%	14.56%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	8,966	9,329	10,011	10,149	10,269	10,387	10,470	10,572	10,672	10,773
Total All Buildings	**8,966**	**9,329**	**10,011**	**10,149**	**10,269**	**10,387**	**10,470**	**10,572**	**10,672**	**10,773**
Percent of Utility Forecast	11.59%	11.68%	11.97%	11.31%	11.29%	11.29%	11.25%	11.27%	11.26%	11.26%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	1,394	1,447	1,553	1,574	1,593	1,611	1,624	1,640	1,655	1,671
Total All Buildings	**1,394**	**1,447**	**1,553**	**1,574**	**1,593**	**1,611**	**1,624**	**1,640**	**1,655**	**1,671**
Percent of Utility Forecast	11.26%	11.26%	11.43%	10.58%	10.49%	10.44%	10.37%	10.32%	10.27%	10.22%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	123	133	155	181	226	286	289	281	272	263
Total All Buildings	**123**	**133**	**155**	**181**	**226**	**286**	**289**	**281**	**272**	**263**
Percent of Utility Forecast	0.16%	0.17%	0.18%	0.20%	0.25%	0.31%	0.31%	0.30%	0.29%	0.27%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	20	21	24	28	35	43	43	42	40	39
Total All Buildings	**20**	**21**	**24**	**28**	**35**	**43**	**43**	**42**	**40**	**39**
Percent of Utility Forecast	0.16%	0.16%	0.18%	0.19%	0.23%	0.28%	0.27%	0.26%	0.25%	0.24%

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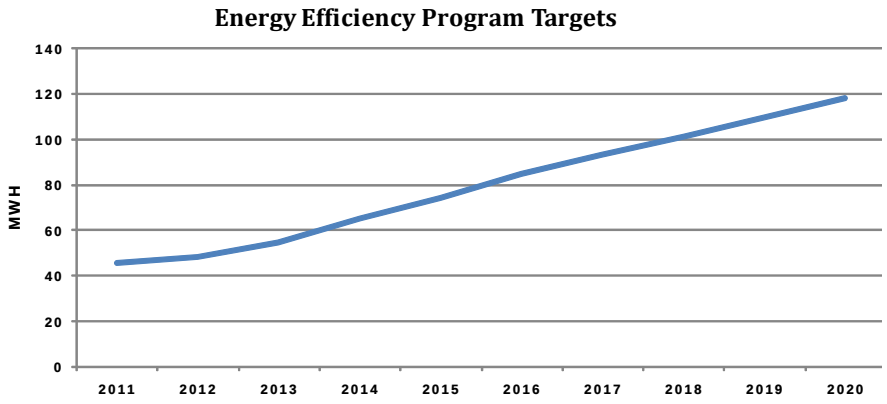

MWH	**46**	**49**	**55**	**65**	**74**	**85**	**93**	**101**	**110**	**118**
% of Load Forecast	0.07%	0.08%	0.09%	0.10%	0.11%	0.13%	0.14%	0.15%	0.16%	0.17%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	25,685	25,612	25,868	26,127	26,388	26,652	26,918	27,188	27,460	27,734
Total All Buildings	**25,685**	**25,612**	**25,868**	**26,127**	**26,388**	**26,652**	**26,918**	**27,188**	**27,460**	**27,734**
Percent of Utility Forecast	40.77%	40.65%	40.65%	40.65%	40.65%	40.65%	40.65%	40.65%	40.65%	40.65%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	6,007	5,996	6,055	6,116	6,177	6,239	6,301	6,364	6,428	6,492
Total All Buildings	**6,007**	**5,996**	**6,055**	**6,116**	**6,177**	**6,239**	**6,301**	**6,364**	**6,428**	**6,492**
Percent of Utility Forecast	41.37%	41.29%	41.29%	41.29%	41.29%	41.29%	41.29%	41.29%	41.29%	41.29%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	25,014	24,935	25,184	25,436	25,690	25,947	26,206	26,468	26,733	27,000
Total All Buildings	**25,014**	**24,935**	**25,184**	**25,436**	**25,690**	**25,947**	**26,206**	**26,468**	**26,733**	**27,000**
Percent of Utility Forecast	39.70%	39.58%	39.58%	39.58%	39.58%	39.58%	39.58%	39.58%	39.58%	39.58%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	5,850	5,837	5,895	5,954	6,014	6,074	6,134	6,196	6,258	6,320
Total All Buildings	**5,850**	**5,837**	**5,895**	**5,954**	**6,014**	**6,074**	**6,134**	**6,196**	**6,258**	**6,320**
Percent of Utility Forecast	40.29%	40.20%	40.20%	40.20%	40.20%	40.20%	40.20%	40.20%	40.20%	40.20%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	46	49	55	65	74	85	93	101	110	118
Total All Buildings	**46**	**49**	**55**	**65**	**74**	**85**	**93**	**101**	**110**	**118**
Percent of Utility Forecast	0.07%	0.08%	0.09%	0.10%	0.11%	0.13%	0.14%	0.15%	0.16%	0.17%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	11	11	13	15	17	20	22	24	26	28
Total All Buildings	**11**	**11**	**13**	**15**	**17**	**20**	**22**	**24**	**26**	**28**
Percent of Utility Forecast	0.07%	0.08%	0.09%	0.10%	0.12%	0.13%	0.14%	0.16%	0.17%	0.18%

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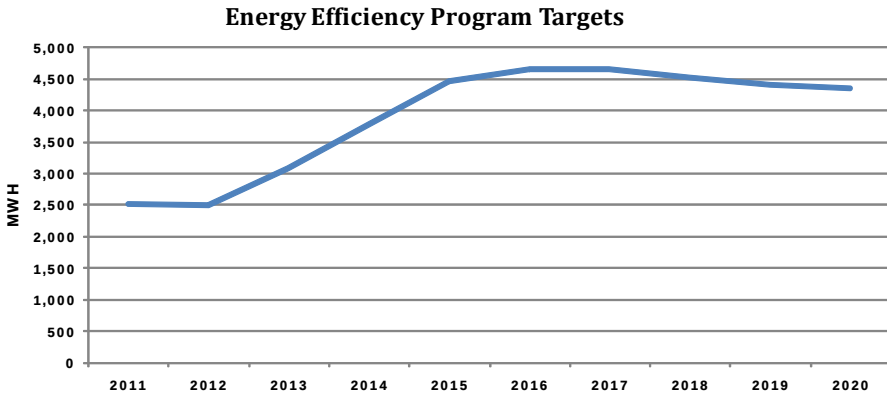

MWH	**2,523**	**2,496**	**3,076**	**3,776**	**4,457**	**4,655**	**4,649**	**4,518**	**4,402**	**4,350**
% of Load Forecast	0.31%	0.29%	0.34%	0.39%	0.44%	0.45%	0.43%	0.40%	0.38%	0.38%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	104,505	92,729	94,334	96,353	98,794	101,659	104,947	108,666	112,818	117,401
Non-Residential	190,948	204,885	232,417	245,930	259,653	273,426	287,452	295,860	298,675	301,609
Total All Buildings	**295,453**	**297,614**	**326,750**	**342,283**	**358,447**	**375,084**	**392,399**	**404,526**	**411,492**	**419,010**
Percent of Utility Forecast	35.72%	34.61%	36.33%	35.33%	35.64%	35.94%	36.28%	36.11%	35.92%	36.18%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	42,651	40,985	41,475	42,094	42,846	43,730	44,747	45,899	47,185	48,608
Non-Residential	44,692	47,999	54,449	57,615	60,830	64,056	67,342	69,312	69,971	70,659
Total All Buildings	**87,343**	**88,984**	**95,924**	**99,709**	**103,676**	**107,786**	**112,089**	**115,210**	**117,157**	**119,266**
Percent of Utility Forecast	34.16%	33.05%	34.54%	33.75%	33.63%	33.49%	33.45%	33.54%	33.26%	33.04%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	22,653	21,215	21,468	21,789	22,177	22,634	23,159	23,754	24,419	25,154
Non-Residential	185,599	199,091	225,845	238,976	252,311	265,694	279,324	287,494	290,229	293,080
Total All Buildings	**208,252**	**220,306**	**247,313**	**260,765**	**274,487**	**288,328**	**302,483**	**311,248**	**314,648**	**318,234**
Percent of Utility Forecast	25.18%	25.62%	27.50%	26.92%	27.29%	27.62%	27.97%	27.79%	27.46%	27.48%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	12,606	12,355	12,389	12,436	12,494	12,563	12,645	12,738	12,844	12,961
Non-Residential	42,498	45,623	51,754	54,763	57,818	60,885	64,009	65,881	66,508	67,161
Total All Buildings	**55,105**	**57,978**	**64,143**	**67,198**	**70,312**	**73,449**	**76,653**	**78,619**	**79,351**	**80,122**
Percent of Utility Forecast	21.55%	21.54%	23.10%	22.75%	22.81%	22.82%	22.87%	22.89%	22.53%	22.19%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,505	1,236	1,334	1,471	1,419	1,090	746	491	336	245
Non-Residential	1,018	1,260	1,742	2,305	3,038	3,565	3,902	4,027	4,066	4,104
Total All Buildings	**2,523**	**2,496**	**3,076**	**3,776**	**4,457**	**4,655**	**4,649**	**4,518**	**4,402**	**4,350**
Percent of Utility Forecast	0.31%	0.29%	0.34%	0.39%	0.44%	0.45%	0.43%	0.40%	0.38%	0.38%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	600	615	630	645	660	675	690	705	720	735
Non-Residential	1,000	1,125	1,250	1,375	1,500	1,625	1,750	1,875	2,000	2,125
Total All Buildings	**1,600**	**1,740**	**1,880**	**2,020**	**2,160**	**2,300**	**2,440**	**2,580**	**2,720**	**2,860**
Percent of Utility Forecast	0.63%	0.65%	0.68%	0.68%	0.70%	0.71%	0.73%	0.75%	0.77%	0.79%

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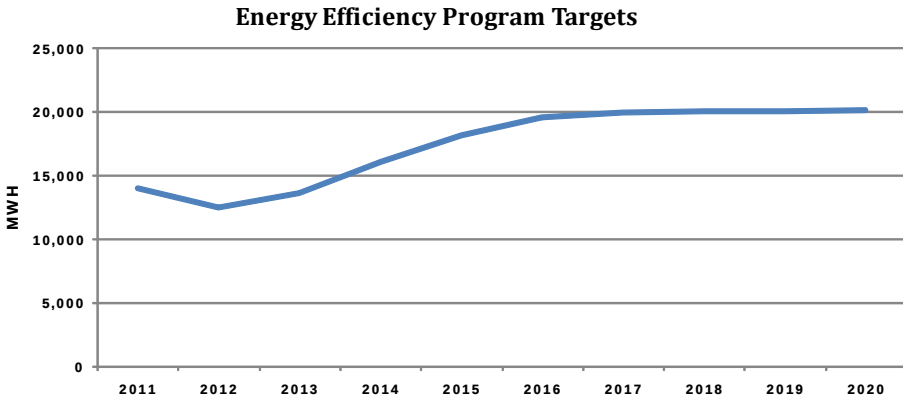


MWH	**14,017**	**12,526**	**13,705**	**16,071**	**18,159**	**19,617**	**19,994**	**20,037**	**20,082**	**20,169**
% of Load Forecast	0.65%	0.59%	0.64%	0.73%	0.80%	0.84%	0.84%	0.82%	0.81%	0.80%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	258,674	225,727	225,907	226,756	227,628	228,523	229,443	230,386	231,354	232,449
Non-Residential	657,046	651,142	651,657	672,592	691,886	708,851	724,155	735,661	747,121	759,744
Total All Buildings	**915,719**	**876,869**	**877,563**	**899,348**	**919,514**	**937,374**	**953,597**	**966,047**	**978,476**	**992,193**
Percent of Utility Forecast	42.69%	41.29%	40.93%	40.77%	40.35%	40.12%	39.92%	39.62%	39.46%	39.36%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	105,614	100,463	100,470	100,654	100,844	101,040	101,242	101,452	101,667	101,916
Non-Residential	142,855	141,595	141,654	146,192	150,386	154,073	157,399	159,900	162,391	165,135
Total All Buildings	**248,469**	**242,058**	**242,124**	**246,846**	**251,229**	**255,113**	**258,642**	**261,352**	**264,059**	**267,051**
Percent of Utility Forecast	45.17%	44.28%	43.85%	43.60%	43.20%	43.02%	42.81%	42.54%	42.39%	42.28%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	227,268	194,326	194,480	195,209	195,958	196,727	197,516	198,327	199,158	200,098
Non-Residential	641,628	635,725	636,239	656,682	675,520	692,083	707,025	718,259	729,449	741,773
Total All Buildings	**868,896**	**830,050**	**830,719**	**851,891**	**871,478**	**888,810**	**904,542**	**916,586**	**928,607**	**941,871**
Percent of Utility Forecast	40.51%	39.09%	38.74%	38.62%	38.24%	38.04%	37.86%	37.59%	37.45%	37.36%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	63,704	58,559	58,550	58,625	58,702	58,782	58,866	58,952	59,041	59,146
Non-Residential	139,019	137,760	137,818	142,234	146,314	149,902	153,138	155,571	157,995	160,664
Total All Buildings	**202,724**	**196,319**	**196,369**	**200,859**	**205,016**	**208,684**	**212,004**	**214,523**	**217,036**	**219,811**
Percent of Utility Forecast	36.85%	35.91%	35.56%	35.48%	35.25%	35.19%	35.09%	34.92%	34.84%	34.80%

Market Potential

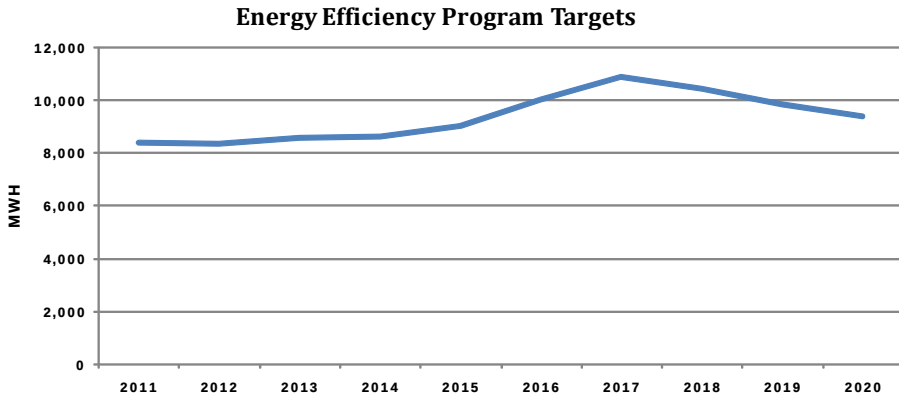
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	4,275	2,528	2,829	3,213	3,722	4,104	4,127	4,095	4,052	4,005
Non-Residential	9,742	9,997	10,876	12,858	14,437	15,513	15,867	15,942	16,030	16,164
Total All Buildings	**14,017**	**12,526**	**13,705**	**16,071**	**18,159**	**19,617**	**19,994**	**20,037**	**20,082**	**20,169**
Percent of Utility Forecast	0.65%	0.59%	0.64%	0.73%	0.80%	0.84%	0.84%	0.82%	0.81%	0.80%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,001	736	806	918	1,110	1,336	1,454	1,429	1,391	1,352
Non-Residential	2,213	2,273	2,467	2,897	3,253	3,511	3,608	3,635	3,660	3,693
Total All Buildings	**3,214**	**3,009**	**3,273**	**3,815**	**4,364**	**4,847**	**5,062**	**5,064**	**5,051**	**5,045**
Percent of Utility Forecast	0.58%	0.55%	0.59%	0.67%	0.75%	0.82%	0.84%	0.82%	0.81%	0.80%

ROSEVILLE



MWH	**8,390**	**8,360**	**8,604**	**8,639**	**9,054**	**10,032**	**10,903**	**10,470**	**9,874**	**9,387**
% of Load Forecast	0.63%	0.61%	0.61%	0.60%	0.61%	0.66%	0.70%	0.65%	0.60%	0.56%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	138,307	127,027	132,942	140,087	148,331	157,774	168,169	179,641	192,214	205,911
Non-Residential	328,531	335,422	344,787	354,597	363,320	372,875	380,395	388,948	397,693	406,634
Total All Buildings	**466,838**	**462,448**	**477,729**	**494,685**	**511,651**	**530,650**	**548,565**	**568,589**	**589,906**	**612,545**
Percent of Utility Forecast	35.16%	33.80%	33.89%	34.14%	34.34%	34.76%	35.01%	35.57%	36.09%	36.65%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	57,315	56,412	58,414	60,834	63,628	66,831	70,358	74,252	78,521	83,172
Non-Residential	72,519	74,091	76,160	78,327	80,253	82,364	84,025	85,914	87,846	89,821
Total All Buildings	**129,834**	**130,503**	**134,573**	**139,161**	**143,882**	**149,195**	**154,383**	**160,166**	**166,367**	**172,993**
Percent of Utility Forecast	38.02%	37.15%	37.25%	37.34%	37.47%	37.85%	38.18%	38.65%	39.20%	39.85%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	48,614	49,057	49,619	50,305	51,103	52,022	53,037	54,161	55,396	56,745
Non-Residential	186,926	191,529	196,877	202,478	207,459	212,915	217,209	222,093	227,086	232,192
Total All Buildings	**235,540**	**240,586**	**246,496**	**252,784**	**258,562**	**264,937**	**270,246**	**276,254**	**282,483**	**288,937**
Percent of Utility Forecast	17.74%	17.59%	17.49%	17.45%	17.35%	17.35%	17.25%	17.28%	17.28%	17.29%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	27,242	27,684	28,241	28,916	29,698	30,596	31,585	32,679	33,880	35,189
Non-Residential	39,954	40,952	42,095	43,293	44,358	45,524	46,443	47,487	48,554	49,646
Total All Buildings	**67,195**	**68,636**	**70,336**	**72,209**	**74,056**	**76,120**	**78,028**	**80,166**	**82,434**	**84,835**
Percent of Utility Forecast	19.68%	19.54%	19.47%	19.37%	19.28%	19.31%	19.30%	19.34%	19.42%	19.54%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	401	425	452	490	550	660	776	889	1,043	1,148
Non-Residential	7,989	7,935	8,152	8,150	8,504	9,371	10,127	9,581	8,831	8,239
Total All Buildings	**8,390**	**8,360**	**8,604**	**8,639**	**9,054**	**10,032**	**10,903**	**10,470**	**9,874**	**9,387**
Percent of Utility Forecast	0.63%	0.61%	0.61%	0.60%	0.61%	0.66%	0.70%	0.65%	0.60%	0.56%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	168	179	191	206	229	272	337	443	601	737
Non-Residential	1,655	1,639	1,669	1,679	1,784	1,989	2,161	2,052	1,890	1,762
Total All Buildings	**1,823**	**1,817**	**1,860**	**1,884**	**2,013**	**2,261**	**2,498**	**2,495**	**2,491**	**2,499**
Percent of Utility Forecast	0.53%	0.52%	0.51%	0.51%	0.52%	0.57%	0.62%	0.60%	0.59%	0.58%

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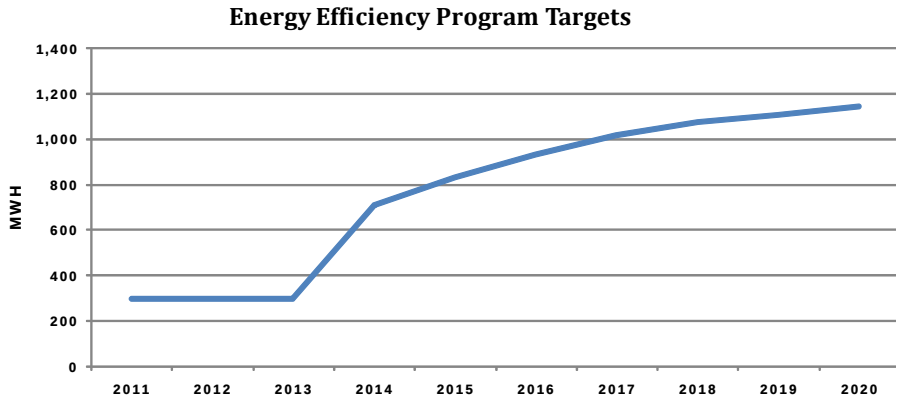


MWH	**300**	**300**	**300**	**713**	**833**	**934**	**1,016**	**1,073**	**1,108**	**1,143**
% of Load Forecast	0.16%	0.15%	0.14%	0.30%	0.33%	0.36%	0.37%	0.37%	0.38%	0.38%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	12,349	11,001	11,181	11,409	11,690	12,022	12,405	12,840	13,327	13,867
Non-Residential	74,692	80,102	90,865	96,149	101,514	106,898	112,382	115,669	116,770	117,917
Total All Buildings	**87,041**	**91,103**	**102,046**	**107,558**	**113,204**	**118,920**	**124,787**	**128,509**	**130,097**	**131,784**
Percent of Utility Forecast	45.86%	45.30%	47.56%	45.17%	45.29%	45.38%	45.51%	44.85%	44.23%	44.35%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	5,129	4,941	5,001	5,077	5,171	5,282	5,410	5,557	5,720	5,902
Non-Residential	17,150	18,409	20,883	22,097	23,330	24,568	25,828	26,583	26,836	27,100
Total All Buildings	**22,278**	**23,350**	**25,884**	**27,174**	**28,501**	**29,850**	**31,238**	**32,140**	**32,557**	**33,002**
Percent of Utility Forecast	64.55%	64.26%	69.05%	68.15%	68.49%	68.72%	69.06%	69.32%	68.48%	67.73%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	8,096	6,733	6,892	7,094	7,341	7,632	7,968	8,349	8,775	9,248
Non-Residential	72,111	77,306	87,695	92,794	97,971	103,168	108,460	111,633	112,695	113,802
Total All Buildings	**80,207**	**84,040**	**94,587**	**99,887**	**105,313**	**110,800**	**116,428**	**119,982**	**121,470**	**123,050**
Percent of Utility Forecast	42.26%	41.79%	44.08%	41.95%	42.13%	42.28%	42.46%	41.88%	41.30%	41.41%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	4,089	3,888	3,930	3,984	4,050	4,129	4,219	4,322	4,438	4,567
Non-Residential	16,328	17,519	19,873	21,029	22,202	23,380	24,579	25,298	25,539	25,790
Total All Buildings	**20,417**	**21,407**	**23,804**	**25,013**	**26,252**	**27,508**	**28,798**	**29,620**	**29,977**	**30,356**
Percent of Utility Forecast	59.15%	58.91%	63.50%	62.73%	63.08%	63.33%	63.67%	63.88%	63.06%	62.30%

Market Potential

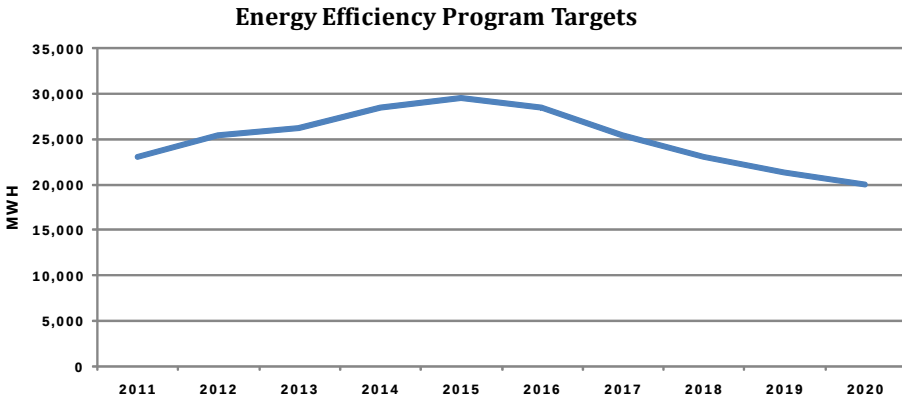
Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	89	47	54	61	70	79	86	91	94	96
Non-Residential	337	384	487	600	703	787	856	904	933	964
Total All Buildings	**426**	**431**	**540**	**661**	**773**	**866**	**942**	**995**	**1,027**	**1,060**
Percent of Utility Forecast	0.22%	0.21%	0.25%	0.28%	0.31%	0.33%	0.34%	0.35%	0.35%	0.36%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	32	27	29	34	41	51	60	64	65	66
Non-Residential	79	90	113	138	162	182	198	209	216	223
Total All Buildings	**111**	**116**	**143**	**173**	**204**	**233**	**258**	**274**	**282**	**289**
Percent of Utility Forecast	0.32%	0.32%	0.38%	0.43%	0.49%	0.54%	0.57%	0.59%	0.59%	0.59%

SILICON VALLEY POWER



MWH	**23,055**	**25,415**	**26,255**	**28,502**	**29,506**	**28,413**	**25,456**	**23,052**	**21,328**	**20,020**
% of Load Forecast	0.75%	0.81%	0.83%	0.89%	0.91%	0.86%	0.76%	0.68%	0.62%	0.58%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	87,596	75,908	77,865	80,235	83,023	86,235	89,874	93,946	98,457	103,411
Non-Residential	683,908	688,927	697,677	706,537	715,510	724,597	733,799	743,119	752,556	762,114
Total All Buildings	**771,504**	**764,836**	**775,542**	**786,772**	**798,534**	**810,832**	**823,673**	**837,065**	**851,013**	**865,525**
Percent of Utility Forecast	25.10%	24.48%	24.51%	24.55%	24.61%	24.67%	24.75%	24.84%	24.93%	25.04%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	33,541	32,024	32,717	33,556	34,545	35,685	36,977	38,423	40,026	41,787
Non-Residential	158,170	159,414	161,438	163,488	165,565	167,667	169,797	171,953	174,137	176,348
Total All Buildings	**191,711**	**191,438**	**194,155**	**197,045**	**200,110**	**203,352**	**206,774**	**210,377**	**214,163**	**218,136**
Percent of Utility Forecast	39.69%	38.99%	39.05%	39.13%	39.24%	39.38%	39.54%	39.72%	39.93%	40.16%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	24,621	23,843	24,144	24,511	24,945	25,446	26,016	26,655	27,364	28,144
Non-Residential	602,608	607,867	615,587	623,405	631,322	639,340	647,460	655,682	664,009	672,442
Total All Buildings	**627,229**	**631,710**	**639,731**	**647,916**	**656,267**	**664,786**	**673,475**	**682,337**	**691,373**	**700,586**
Percent of Utility Forecast	20.41%	20.22%	20.22%	20.22%	20.22%	20.23%	20.24%	20.25%	20.26%	20.27%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3,790	3,709	3,738	3,772	3,814	3,862	3,917	3,979	4,047	4,123
Non-Residential	142,685	143,994	145,823	147,675	149,550	151,449	153,373	155,321	157,293	159,291
Total All Buildings	**146,475**	**147,703**	**149,560**	**151,447**	**153,364**	**155,311**	**157,290**	**159,299**	**161,341**	**163,414**
Percent of Utility Forecast	30.33%	30.08%	30.08%	30.08%	30.08%	30.08%	30.08%	30.08%	30.08%	30.09%

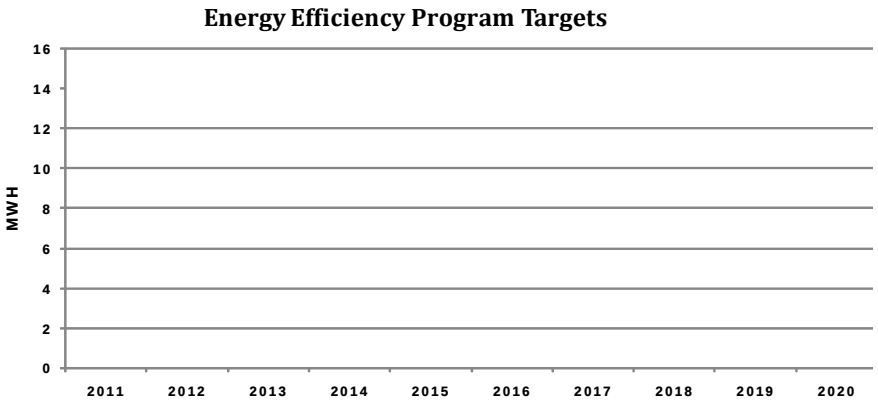
Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,213	1,197	1,254	1,421	1,639	1,635	1,415	1,217	1,049	914
Non-Residential	21,842	24,218	25,001	27,081	27,867	26,778	24,041	21,835	20,279	19,106
Total All Buildings	**23,055**	**25,415**	**26,255**	**28,502**	**29,506**	**28,413**	**25,456**	**23,052**	**21,328**	**20,020**
Percent of Utility Forecast	0.75%	0.81%	0.83%	0.89%	0.91%	0.86%	0.76%	0.68%	0.62%	0.58%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	211	207	202	209	228	223	193	167	145	126
Non-Residential	5,068	5,690	5,930	6,459	6,697	6,555	6,102	5,697	5,370	5,092
Total All Buildings	**5,278**	**5,897**	**6,132**	**6,668**	**6,925**	**6,778**	**6,295**	**5,864**	**5,515**	**5,218**
Percent of Utility Forecast	1.09%	1.20%	1.23%	1.32%	1.36%	1.31%	1.20%	1.11%	1.03%	0.96%



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
MWH	14	13	14	14	14	14	14	14	14	14
% of Load Forecast	0.01%	0.01%	0.02%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	34,638	32,979	33,487	34,106	34,836	35,679	36,637	37,709	38,898	40,203
Non-Residential	17,405	17,397	17,571	17,747	17,924	18,104	18,285	18,468	18,652	18,839
Total All Buildings	**52,044**	**50,377**	**51,058**	**51,853**	**52,761**	**53,783**	**54,922**	**56,177**	**57,550**	**59,042**
Percent of Utility Forecast	57.24%	54.86%	55.05%	55.36%	55.77%	56.29%	56.91%	57.63%	58.46%	59.38%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	8,325	7,576	7,709	7,870	8,060	8,279	8,528	8,807	9,116	9,455
Non-Residential	3,242	3,244	3,277	3,310	3,343	3,376	3,410	3,444	3,479	3,513
Total All Buildings	**11,567**	**10,821**	**10,986**	**11,179**	**11,403**	**11,656**	**11,938**	**12,251**	**12,594**	**12,968**
Percent of Utility Forecast	59.65%	55.25%	55.54%	55.96%	56.51%	57.19%	58.00%	58.93%	59.98%	61.15%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	22,505	20,575	20,581	20,593	20,610	20,632	20,661	20,695	20,734	20,780
Non-Residential	1,099	1,080	1,090	1,101	1,112	1,123	1,135	1,146	1,157	1,169
Total All Buildings	**23,604**	**21,654**	**21,671**	**21,694**	**21,722**	**21,756**	**21,795**	**21,840**	**21,892**	**21,949**
Percent of Utility Forecast	25.96%	23.58%	23.37%	23.16%	22.96%	22.77%	22.58%	22.41%	22.24%	22.07%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3,930	3,110	3,109	3,109	3,110	3,111	3,113	3,115	3,118	3,122
Non-Residential	115	112	113	115	116	117	118	119	120	122
Total All Buildings	**4,045**	**3,222**	**3,223**	**3,224**	**3,226**	**3,228**	**3,231**	**3,235**	**3,239**	**3,244**
Percent of Utility Forecast	20.86%	16.45%	16.29%	16.14%	15.99%	15.84%	15.70%	15.56%	15.43%	15.29%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	14	11	14	21	35	57	82	101	108	113
Non-Residential	0	0	0	0	0	0	0	0	0	0
Total All Buildings	**14**	**11**	**14**	**21**	**35**	**57**	**82**	**101**	**108**	**113**
Percent of Utility Forecast	0.01%	0.01%	0.02%	0.02%	0.04%	0.06%	0.08%	0.10%	0.11%	0.11%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	3	1	1	2	3	4	5	6	7	7
Non-Residential	0	0	0	0	0	0	0	0	0	0
Total All Buildings	**3**	**1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**7**
Percent of Utility Forecast	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.03%	0.03%	0.03%	0.03%

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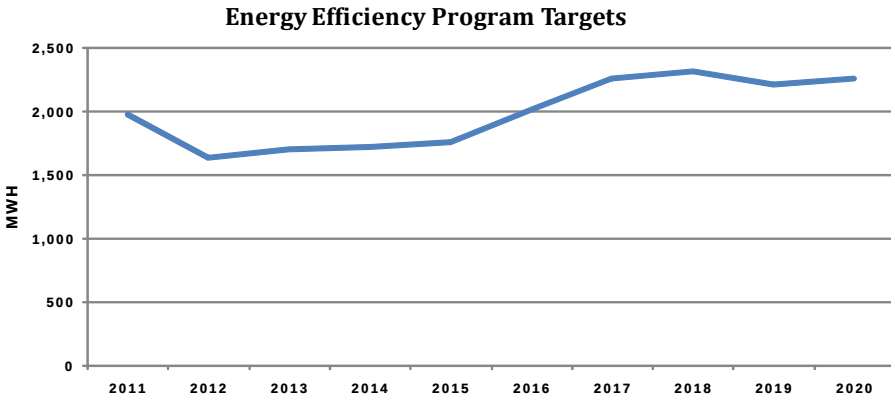

MWH	**1,978**	**1,640**	**1,706**	**1,727**	**1,762**	**2,017**	**2,257**	**2,317**	**2,214**	**2,263**
% of Load Forecast	1.23%	1.00%	1.02%	1.01%	1.01%	1.14%	1.25%	1.25%	1.17%	1.18%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	56,245	53,448	55,229	57,398	59,963	62,929	66,306	70,101	74,323	78,978
Non-Residential	39,106	39,475	40,264	41,070	41,891	42,729	43,583	44,455	45,344	46,251
Total All Buildings	**95,351**	**92,922**	**95,494**	**98,468**	**101,854**	**105,658**	**109,890**	**114,557**	**119,667**	**125,229**
Percent of Utility Forecast	59.29%	56.64%	57.07%	57.69%	58.51%	59.50%	60.67%	62.01%	63.50%	65.15%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	15,290	13,911	14,370	14,930	15,591	16,356	17,228	18,206	19,295	20,496
Non-Residential	7,285	7,362	7,509	7,659	7,812	7,969	8,128	8,291	8,456	8,625
Total All Buildings	**22,575**	**21,272**	**21,879**	**22,589**	**23,403**	**24,325**	**25,355**	**26,497**	**27,752**	**29,122**
Percent of Utility Forecast	63.23%	59.42%	60.94%	62.75%	64.83%	67.20%	69.85%	72.79%	76.03%	79.57%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	40,217	36,841	37,889	39,166	40,677	42,425	44,416	46,654	49,144	51,891
Non-Residential	34,216	34,488	35,177	35,881	36,598	37,330	38,077	38,839	39,615	40,408
Total All Buildings	**74,433**	**71,329**	**73,067**	**75,047**	**77,275**	**79,756**	**82,493**	**85,493**	**88,760**	**92,299**
Percent of Utility Forecast	46.28%	43.48%	43.67%	43.97%	44.39%	44.92%	45.55%	46.28%	47.10%	48.02%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	8,333	6,807	7,080	7,411	7,803	8,256	8,771	9,350	9,994	10,704
Non-Residential	4,694	4,719	4,814	4,910	5,008	5,108	5,210	5,315	5,421	5,529
Total All Buildings	**13,027**	**11,527**	**11,894**	**12,321**	**12,811**	**13,364**	**13,982**	**14,665**	**15,415**	**16,233**
Percent of Utility Forecast	36.49%	32.20%	33.13%	34.23%	35.49%	36.92%	38.52%	40.29%	42.23%	44.35%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	257	173	211	278	399	558	708	825	867	902
Non-Residential	865	921	1,053	1,292	1,559	1,816	1,947	1,901	1,738	1,613
Total All Buildings	**1,122**	**1,093**	**1,264**	**1,570**	**1,958**	**2,373**	**2,655**	**2,726**	**2,605**	**2,514**
Percent of Utility Forecast	0.70%	0.67%	0.76%	0.92%	1.12%	1.34%	1.47%	1.48%	1.38%	1.31%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	77	37	44	53	67	81	91	100	105	110
Non-Residential	120	127	143	171	195	211	217	215	207	201
Total All Buildings	**197**	**164**	**187**	**224**	**262**	**291**	**308**	**315**	**313**	**312**
Percent of Utility Forecast	0.55%	0.46%	0.52%	0.62%	0.72%	0.81%	0.85%	0.86%	0.86%	0.85%

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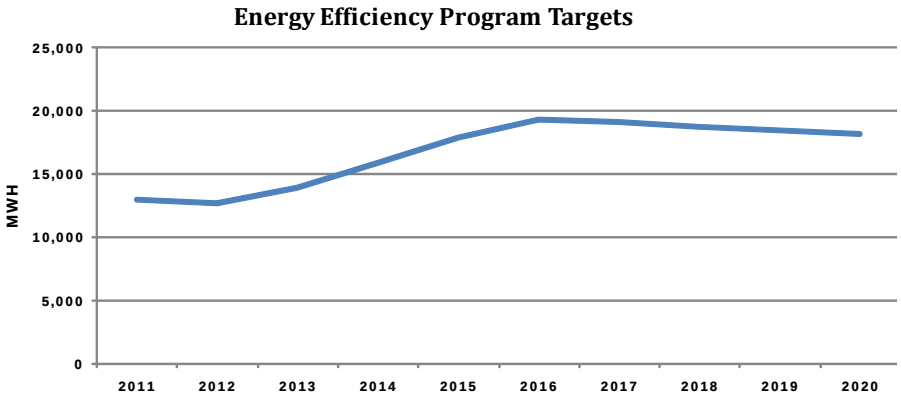

MWH	**12,900**	**12,644**	**13,829**	**15,846**	**17,814**	**19,269**	**19,075**	**18,675**	**18,379**	**18,172**
% of Load Forecast	0.63%	0.60%	0.64%	0.72%	0.79%	0.84%	0.82%	0.79%	0.76%	0.74%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	177,460	155,516	160,185	166,040	173,109	181,396	190,686	200,982	212,272	224,593
Non-Residential	572,898	584,879	596,218	607,647	619,322	631,125	642,382	653,703	665,184	676,956
Total All Buildings	**750,358**	**740,395**	**756,404**	**773,687**	**792,431**	**812,521**	**833,068**	**854,685**	**877,456**	**901,549**
Percent of Utility Forecast	36.84%	35.29%	34.99%	35.11%	35.28%	35.49%	35.71%	36.00%	36.32%	36.67%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	82,054	79,180	80,666	82,536	84,801	87,461	90,446	93,758	97,392	101,361
Non-Residential	119,009	121,475	123,830	126,204	128,629	131,080	133,418	135,770	138,154	140,599
Total All Buildings	**201,063**	**200,655**	**204,496**	**208,740**	**213,430**	**218,541**	**223,864**	**229,527**	**235,546**	**241,960**
Percent of Utility Forecast	37.41%	36.47%	36.30%	36.36%	36.48%	36.66%	36.85%	37.14%	37.48%	37.86%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	147,383	124,574	128,083	132,485	137,802	144,035	151,025	158,772	167,267	176,540
Non-Residential	554,501	565,925	576,897	587,955	599,251	610,673	621,564	632,519	643,627	655,018
Total All Buildings	**701,884**	**690,499**	**704,980**	**720,440**	**737,053**	**754,708**	**772,589**	**791,291**	**810,895**	**831,558**
Percent of Utility Forecast	34.46%	32.91%	32.61%	32.69%	32.82%	32.97%	33.12%	33.33%	33.56%	33.82%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	41,776	38,155	38,636	39,245	39,984	40,854	41,832	42,918	44,111	45,415
Non-Residential	113,721	116,028	118,278	120,545	122,861	125,202	127,435	129,681	131,959	134,294
Total All Buildings	**155,497**	**154,183**	**156,914**	**159,789**	**162,844**	**166,056**	**169,267**	**172,599**	**176,070**	**179,710**
Percent of Utility Forecast	28.94%	28.02%	27.86%	27.83%	27.83%	27.85%	27.86%	27.93%	28.02%	28.12%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	1,832	1,002	1,138	1,300	1,506	1,669	1,714	1,744	1,772	1,801
Non-Residential	11,068	11,642	12,691	14,546	16,308	17,600	17,361	16,932	16,607	16,372
Total All Buildings	**12,900**	**12,644**	**13,829**	**15,846**	**17,814**	**19,269**	**19,075**	**18,675**	**18,379**	**18,172**
Percent of Utility Forecast	0.63%	0.60%	0.64%	0.72%	0.79%	0.84%	0.82%	0.79%	0.76%	0.74%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	435	309	342	391	472	575	648	657	660	662
Non-Residential	2,225	2,352	2,573	2,931	3,249	3,476	3,486	3,464	3,452	3,448
Total All Buildings	**2,660**	**2,661**	**2,916**	**3,322**	**3,721**	**4,051**	**4,134**	**4,121**	**4,111**	**4,109**
Percent of Utility Forecast	0.49%	0.48%	0.52%	0.58%	0.64%	0.68%	0.68%	0.67%	0.65%	0.64%

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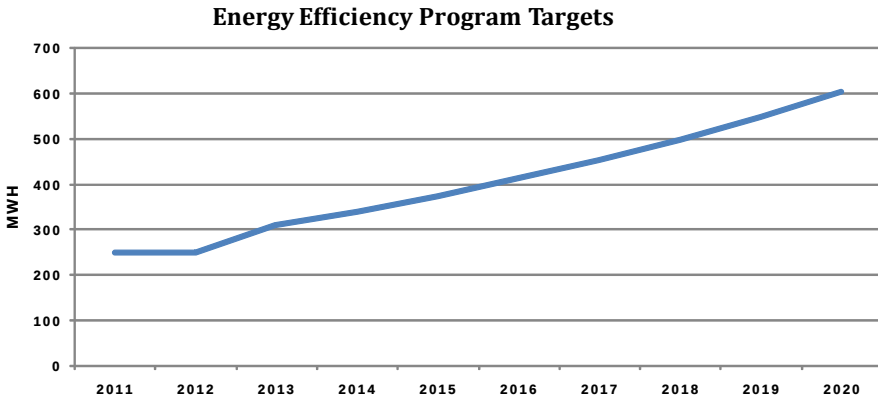

MWH	**250**	**250**	**310**	**341**	**375**	**413**	**454**	**499**	**549**	**604**
% of Load Forecast	0.20%	0.20%	0.25%	0.28%	0.31%	0.34%	0.37%	0.41%	0.45%	0.50%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	17,809	15,992	16,493	17,077	17,734	18,460	19,241	20,083	20,986	21,949
Non-Residential	35,712	35,778	36,157	36,572	36,921	37,257	37,516	37,805	38,095	38,387
Total All Buildings	**53,521**	**51,770**	**52,650**	**53,649**	**54,655**	**55,718**	**56,757**	**57,888**	**59,081**	**60,337**
Percent of Utility Forecast	43.88%	41.73%	41.91%	42.26%	42.56%	42.98%	43.39%	43.95%	44.51%	45.11%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	7,400	7,228	7,439	7,685	7,962	8,268	8,597	8,952	9,332	9,739
Non-Residential	8,362	8,388	8,477	8,574	8,656	8,735	8,796	8,864	8,932	9,000
Total All Buildings	**15,762**	**15,616**	**15,916**	**16,259**	**16,618**	**17,003**	**17,393**	**17,815**	**18,264**	**18,739**
Percent of Utility Forecast	49.22%	48.36%	48.90%	49.58%	50.30%	51.15%	52.04%	53.02%	54.07%	55.20%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	10,208	8,371	8,664	9,006	9,390	9,815	10,271	10,763	11,291	11,854
Non-Residential	32,557	32,584	32,929	33,307	33,625	33,931	34,166	34,430	34,694	34,960
Total All Buildings	**42,765**	**40,955**	**41,593**	**42,313**	**43,015**	**43,746**	**44,438**	**45,193**	**45,985**	**46,814**
Percent of Utility Forecast	35.06%	33.01%	33.11%	33.33%	33.50%	33.75%	33.97%	34.31%	34.64%	35.00%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	5,313	5,044	5,122	5,213	5,316	5,430	5,553	5,685	5,828	5,980
Non-Residential	7,599	7,615	7,696	7,784	7,859	7,930	7,985	8,047	8,109	8,171
Total All Buildings	**12,912**	**12,659**	**12,818**	**12,997**	**13,175**	**13,360**	**13,538**	**13,732**	**13,936**	**14,151**
Percent of Utility Forecast	40.32%	39.20%	39.38%	39.63%	39.88%	40.19%	40.50%	40.87%	41.26%	41.68%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	86	42	46	53	63	70	74	77	80	83
Non-Residential	417	429	471	537	619	698	743	779	813	842
Total All Buildings	**503**	**471**	**518**	**590**	**683**	**769**	**817**	**857**	**893**	**925**
Percent of Utility Forecast	0.41%	0.38%	0.41%	0.46%	0.53%	0.59%	0.62%	0.65%	0.67%	0.69%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	30	24	26	31	38	46	53	58	59	59
Non-Residential	98	101	111	125	143	163	173	182	190	196
Total All Buildings	**128**	**125**	**137**	**156**	**181**	**209**	**227**	**240**	**249**	**256**
Percent of Utility Forecast	0.40%	0.39%	0.42%	0.48%	0.55%	0.63%	0.68%	0.71%	0.74%	0.75%

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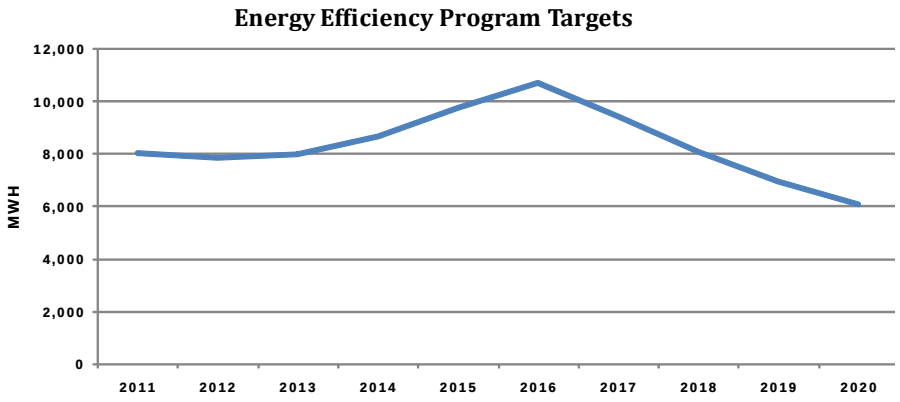

MWH	**8,020**	**7,863**	**7,992**	**8,655**	**9,766**	**10,716**	**9,468**	**8,073**	**6,962**	**6,087**
% of Load Forecast	0.64%	0.61%	0.61%	0.66%	0.74%	0.80%	0.70%	0.59%	0.50%	0.43%

Technical Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	49	42	43	43	44	44	45	46	46	47
Non-Residential	298,486	300,784	303,502	305,814	309,777	312,823	317,277	322,036	326,866	331,769
Total All Buildings	**298,535**	**300,827**	**303,545**	**305,857**	**309,821**	**312,867**	**317,322**	**322,081**	**326,912**	**331,816**
Percent of Utility Forecast	23.69%	23.49%	23.33%	23.29%	23.42%	23.35%	23.45%	23.47%	23.47%	23.47%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	18	17	18	18	18	18	18	19	19	19
Non-Residential	56,313	56,694	57,207	57,642	58,389	58,963	59,803	60,700	61,610	62,535
Total All Buildings	**56,331**	**56,712**	**57,224**	**57,660**	**58,407**	**58,982**	**59,821**	**60,718**	**61,629**	**62,553**
Percent of Utility Forecast	27.60%	27.27%	26.99%	26.94%	27.17%	27.06%	27.19%	27.23%	27.15%	27.20%

Economic Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	42	35	35	36	36	37	37	38	38	39
Non-Residential	291,589	293,776	296,430	298,688	302,558	305,533	309,884	314,532	319,250	324,039
Total All Buildings	**291,631**	**293,811**	**296,466**	**298,723**	**302,595**	**305,570**	**309,921**	**314,569**	**319,288**	**324,077**
Percent of Utility Forecast	23.14%	22.95%	22.78%	22.75%	22.87%	22.80%	22.90%	22.92%	22.92%	22.92%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	9	8	8	8	8	8	8	9	9	9
Non-Residential	54,868	55,226	55,725	56,149	56,877	57,436	58,254	59,128	60,015	60,915
Total All Buildings	**54,877**	**55,234**	**55,733**	**56,158**	**56,885**	**57,445**	**58,263**	**59,136**	**60,023**	**60,924**
Percent of Utility Forecast	26.89%	26.55%	26.29%	26.24%	26.46%	26.35%	26.48%	26.52%	26.44%	26.49%

Market Potential

Energy Potential (MWh)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	8,020	7,863	7,992	8,655	9,766	10,716	9,468	8,073	6,962	6,087
Total All Buildings	**8,020**	**7,863**	**7,992**	**8,655**	**9,766**	**10,716**	**9,468**	**8,073**	**6,962**	**6,087**
Percent of Utility Forecast	0.64%	0.61%	0.61%	0.66%	0.74%	0.80%	0.70%	0.59%	0.50%	0.43%

Demand Potential (kW)

Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential	0	0	0	0	0	0	0	0	0	0
Non-Residential	973	958	981	1,070	1,205	1,317	1,178	1,023	900	804
Total All Buildings	**973**	**958**	**981**	**1,070**	**1,205**	**1,317**	**1,178**	**1,023**	**900**	**804**
Percent of Utility Forecast	0.48%	0.46%	0.46%	0.50%	0.56%	0.60%	0.54%	0.46%	0.40%	0.35%

Appendix C: References to Documents Supporting Report

California Energy Commission, *Funding and Energy Savings from Investor-Owned Utility Energy Efficiency Programs in California for Program Years 2000 through 2004*, CEC Publication CEC-400-2005-042-REV2, August 2005.

California Energy Commission, 2007 Integrated Energy Policy Report, CEC Publication CEC-100-2007-008-CMF, November 2007.

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California Energy Commission, 2006, *California Commercial End-Use Survey*

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California Institute for Energy and Environment, 2009, *Behavioral Assumptions in Energy Efficiency Potential Studies*

California Municipal Utilities Association, *Energy Efficiency in California's Public Power Sector: A Status Report*, December 2006

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California Public Utilities Commission, *Rulemaking R.04-04-025, Various Decisions D.05-04-024, D.06-06-063, and Decision D.08-01-006* regarding avoided cost methodologies and the Total Resource Cost test.

Energy and Environmental Economics, "*Methodology and Forecast of Long Term Avoided Costs for The Evaluation of California Energy Efficiency Programs*." Available at http://www.ethree.com/cpuc_avoidedcosts.html

Itron, 2008, *California Energy Efficiency Potential Study*

KEMA Incorporated. *Measure Quantification Methodology: Statewide Savings and Costs,* 2006 Report, August 2006. Available at http://www.ncpa.com/energy-efficiency-reports.html

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KEMA Incorporated. *Measure Quantification Methodology: Statewide Savings and Costs,* 2009 KEMA Report, December 2009

U.S. Environmental Protection Agency, *Model Energy Efficiency Program Impact Evaluation Guide*, A Resource of the National Action Plan for Energy Efficiency, November 2007.

California Air Resources Board AB 32 Scoping Plan, adopted December 11, 2008. Available at http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm

Appendix D: List of Available Evaluation Reports

The below listed evaluation reports are available (unless otherwise noted) for download at: http://www.ncpa.com/energy-efficiency-m-v-reports.html

Utility Name	Evaluation Report(s)
Alameda	1. *Evaluation, Verification, and Measurement Study*, May 2009, Summit Blue Consulting 2. FY 2009 Evaluation Report, Residential CFL program, Global Energy Partners, available June 2010
Anaheim	*3.* Energy Efficiency Evaluation Report*,* Lincus Energy, Inc., available in 2010
Biggs	4. *2008 Energy Efficiency Program Evaluation Plan*, Jun 2008, Summit Blue Consulting 5. *FY 2008 Energy Efficiency Program Evaluation,* February 15, 2010, Navigant Consulting
Burbank	*6.* Energy Efficiency Evaluation Report*,* Lincus Energy, Inc., available March 31, 2010
Gridley	7. *2008 Energy Efficiency Program Evaluation Plan*, Jun 2008, Summit Blue Consulting 8. *Evaluation, Measurement & Verification Report*, February 26, 2010, Optimized Energy and Facilities Consulting
Healdsburg	9. *2008 Energy Efficiency Program Evaluation Plan*, Jun 2008, Summit Blue Consulting 10. *Evaluation, Measurement & Verification Report*, available in 2010, Optimized Energy and Facilities Consulting
Lassen	*11. Evaluation, Measurement & Verification Report*, March 2010, Optimized Energy and Facilities Consulting
Lodi	12. *2008 Energy Efficiency Program Evaluation Plan*, May 2008, Summit Blue Consulting 13. *Process Evaluation of Lodi Electric Utility's Efficiency Program and Impact Evaluation of the Non-Residential Custom Program-Lighting and Appliance Rebate*, Nov 2008, Summit Blue Consulting 14. *Impact Evaluation of the Nonresidential Customer Program and the Residential Home Improvement Program, FY 2008/09,* November 20, 2009, Summit Blue Consulting
Lompoc	15. *2008 Energy Efficiency Program Evaluation Plan*, Jun 2008, Summit Blue Consulting 16. *Evaluation, Verification, and Measurement Study*, Mar 2009, Summit Blue Consulting
LADWP	17. 2006-2007 Evaluation Report, Report available from SCPPA website 18. 2007-2008 Evaluation Report, Availability TBD
Modesto Irrigation District	19. *Evaluation, Measurement and Verification Plan for Modesto Irrigation District*, April 2009, Taylor Systems Engineering

Palo Alto	20. *Evaluation, Verification, and Measurement Study*, Feb 2009, Summit Blue Consulting 21. *FY 2008/2009 Energy Efficiency Program Evaluation,* March 5, 2010, Navigant Consulting
Plumas Sierra REC	22. *2008 Energy Efficiency Program Evaluation Plan*, May 2008, Summit Blue Consulting 23. *Engineering Evaluation of GeoExchange Program,* February 8 2010, Efficiency Services Group 24. *Evaluation, Measurement, & Verification Report for PSREC 2009,* February 26 2010, Efficiency Services Group
Port of Oakland	25. *Evaluation, Verification, and Measurement Study*, Feb 2009, Summit Blue Consulting
Redding	26. *2008 Energy Efficiency Program Evaluation Plan*, Jun 2008, Summit Blue Consulting 27. *Evaluation, Verification, and Measurement Study*, Mar 2009, Summit Blue Consulting
Roseville	28. *Evaluation, Measurement and Verification Plans for Roseville Electric*, Dec 2008, Summit Blue Consulting 29. *Process and Impact Evaluation of Roseville Electric's Residential New Construction, HVAC Retrofit, and Commercial Custom Rebate Programs*: FY2007/08, Feb 2009, Morrison Energy Services 30. *Evaluation, Measurement & Verification Report*, available in March 2010, Efficiency Services Group
Shasta Lake	*31. Evaluation, Measurement & Verification Report*, March 2010, Optimized Energy and Facilities Consulting
Silicon Valley Power	32. *Evaluation, Verification, and Measurement Study, Mar 2009*, *FY 2007/2008 Program*, Summit Blue Consulting 33. *Evaluation, Verification & Measurement Study, FY 2008/2009 Program,* December 31, 2009, Summit Blue Consulting
SMUD	34. *Evaluation of Prescriptive Lighting Program*, Nov 2007, ADM Associates, Inc. 35. *Measure and Verify Savings of Refrigerator Recycling Program*, May 2007, ADM Associates, Inc. 36. *Residential HVAC Program Evaluation*, Mar 2008, RLW Analytics, Inc. 37. *The Impact of Home Electricity Reports,* September 2009, ADM Associates, Inc.
TID	38. *2008 Energy Efficiency Program Evaluation Plan*, May 2008, Summit Blue Consulting 39. *Evaluation, Verification, and Measurement Study*, Mar 2009, Summit Blue Consulting 40. CY2009 Energy Efficiency Program Evaluation, Navigant Consulting, available June 2010

Truckee Donner PUD	41. *Evaluation, Measurement and Verification Plan for Truckee Donner Public Utility District 2008Energy Efficiency Programs*, Feb 2009, Robert Mowris and Associates 42. *Evaluation, Measurement & Verification Report for Truckee Donner Public Utility District*, February 26, 2010, Optimized Energy & Facilities Consulting, Inc. 43. *Truckee Donner Public Utilities District Calculation Evaluation, Measurement & Verification Report,* February 26, 2010, Optimized Energy & Facilities Consulting, Inc.
Ukiah	44. *2008 Energy Efficiency Program Evaluation Plan*, Aug 2008, Summit Blue Consulting