Energy Efficiency in California's Public Power Sector

A Status Report

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CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION

A PUBLIC AGENCY NCPA NORTHERN CALIFORNIA POWER AGENCY

SCPPA

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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 the following year 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.

This report, *Energy Efficiency in California's Public Power Sector: A 2012 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-one POUs are submitting energy efficiency data in compliance with the provisions of the legislation, with the City and County of San Francisco joining the collaboration for the first time here in 2012.

The California Municipal Utilities Association (CMUA), in partnership with the Northern California Power Agency (NCPA) and the Southern California Public Power Authority (SCPPA), has been working collaboratively since October 2005 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 sixth report takes into consideration the latest available developments regarding public power's wide range of energy efficiency programs.

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 are served. Even with this commitment, energy efficiency program expenditures for each utility 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, customer desires to invest in energy efficiency, and economic conditions. Despite these challenges, public power energy efficiency investments have managed to surpass $600 million since 2005.

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

- POUs continue their long-standing commitment to energy efficiency, despite being impacted by the second year of a severe recession. During FY10/11, POUs spent more than $132 million on energy efficiency programs, the fourth consecutive year the $100 million threshold has been exceeded.
- Reductions in electricity consumption remain strong within the public power community with the wide range of energy efficiency programs being offered by 41 public power utilities in California. In the most recent reporting year, peak demand dropped more than 81 megawatts and nearly 460 million kilowatt hours of energy were saved.

- Public power energy efficiency programs are cost-effective. Applying the Total Resource Cost (TRC) societal test, the principal measured used in the industry to determine whether programs are cost-effective, the weighted average TRC for FY10/11 publicly owned energy efficiency programs identified in this report was 2.46. By definition, any TRC greater than 1.0 comes with the theoretical assumption that the program is indeed cost-effective.
- The 15 largest POUs account for approximately 96 percent of public power's total energy efficiency savings. Ten of these utilities had annual net energy savings that exceeded 10,000 megawatt hours.
- Lighting programs continue to provide the largest share of energy efficiency savings to public power utilities, despite the fact that the assumed energy savings associated with these programs have been adjusted downward since the 2011 report was published.
- Applying efficiency targets that were adopted in 2010, California's POUs still perform well when actual results are compared to targets. Among the entire group, actual results exceeded 75 percent of savings targets for the reporting cycle, and approximately 95 percent when the two largest POUs are removed from the calculation.

I. Introduction

The California Municipal Utilities Association (CMUA) is pleased to submit this sixth report providing an update on the status of publicly-owned utility (POU) energy efficiency programs in California. The report is delivered to the California Energy Commission (CEC) in compliance 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."

Forty-one utilities are detailing their energy efficiency activities in this document, programs which cover approximately 25 percent of customer electric load served in California. The City and County of San Francisco joins this collaboration for the first time in this report. Beyond the informational requirements described in the abovementioned statute for each utility, this document is designed in a manner that provides a comprehensive assessment that can be utilized by state policymakers and interested stakeholders to gauge the effectiveness of energy efficiency programs within the public power community.

This report includes a number of sections beyond this introduction, as well as detailed appendices with specific utility information. Section II provides a brief technical description of the methodologies used by the public power community to report energy savings and current developments about how utility programs are being evaluated. Previous reports have provided extensive documentation regarding the energy efficiency reporting tools that are utilized to evaluate utility programs and should be relied upon if additional technical information is needed beyond the level of detail provided in Section II. This year's edition identifies key factors impacting energy savings calculations and measures of cost effectiveness.

Section III highlights the range of public power energy efficiency programs that are currently available to customers. Included in this discussion is a snapshot of utility best practices, multi-utility collaboration efforts, and a report regarding programs that are utilizing funding from the American Recovery and Reinvestment Act (ARRA).

Section IV offers a numerical summary of energy efficiency savings stemming from current POU energy efficiency programs, including a comparison to how these savings compare to currently adopted energy efficiency targets adopted by each utility's local governing board. The section shares important perspectives about continuing economic uncertainties and how those uncertainties impact customer behavior. Demand reduction programs are highlighted in Section V, including the deployment of advanced metering infrastructure (AMI) and the development of the smart grid. The last section of this report offers principal conclusions and insights about the direction of future reports.

Detailed information regarding individual utility program data and summaries are provided in Appendix A of this report. A comprehensive list of 78 separate Evaluation, Measurement, and Verification (EM&V) reports prepared by public power utilities, along with a link to each one, can be found in Appendix B.

II. Reported Energy Savings and Verification Methodologies

This section provides a brief overview of the analytical tools developed by the public power community to report its energy efficiency savings as well as activities being undertaken to verify reported savings.

Before going further, as policymakers use this report to evaluate public power energy efficiency programs, it is absolutely critical to understand how energy savings attributed to energy efficiency programs are interpreted and measured. As a practical matter, energy savings attributed to utility energy efficiency programs are defined as the difference between the expected energy use of a proposed efficiency measure and expected energy use under baseline conditions and assumptions. Baseline energy usage, on the other hand, is governed by the CEC Title 24 building standards as well as the Federal Appliance Standards. Such baselines are typically included in the Database for Energy Efficient Resources (DEER). The 2008 edition of DEER, referred in this report as DEER 2008, includes new baselines established through the CEC 2005 Title 24 building standards, which went into effect on January 1, 2010, as well as new federal energy standards adopted in the Energy Policy Act of 2005. Measure costs and expected useful life were also updated in DEER 2008.

Since SB1037 was passed in 2005, public power has significantly invested in the development of tools and resources for POUs to use when reporting and verifying the results of their energy efficiency programs. KEMA, Incorporated (KEMA) and Energy and Environmental Economics (E3) have provided public power with considerable expertise in this effort. These resources were developed to allow all California POUs participating in this collaborative report to measure energy efficiency program effectiveness and report program savings in a consistent and comprehensive manner.

The E3 Reporting Tool is the principal model used to report the results of utility energy efficiency programs. The Excel-based spreadsheet 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 Measure Quantification Report prepared for NCPA and SCPPA. The most significant change to the model was updates to measure attributes (e.g., energy savings, useful life) for the majority of measures. These changes align the measure attributes with the latest information available from the 2008 version of DEER. Other changes to the model include a natural replacement/early retirement option for applicable measures, an updated net-to-gross reference table (based on DEER), and various minor improvements to simplify data input. Finally utility incentives paid to free riders were added as a cost in the TRC test, consistent with the methodology adopted by the California Public Utilities Commission (CPUC) for investor owned utilities (IOUs).

Additional updates were made to the tool for the 2011 reporting cycle. The avoided costs were updated to the most recently adopted CPUC avoided costs in the fall of 2011, although individual utilities had the ability to use customized avoided cost profiles if desired. Updated DEER load shapes for air conditioning measures were also added. Finally, updated DEER net-to-gross values were included and applied to each measure included in the database.

One important consequence of these updates is a structural drop in the value of reported TRCs and energy savings per unit of measure. Such a result may as a first order suggest that utility programs are less effective and focused on customer needs. However, this is not the case. Consider the following factors that have structurally reduced the value of the TRC and energy savings estimates:

1. **Lower natural gas prices.** Each CPUC avoided cost update since 2008 has resulted in lower energy values primarily as a result of lower natural gas price forecasts.

2. **Steeper peaks within the energy price curves.** The energy price shapes used in the CPUC avoided cost methodology are now based on California Independent System Operator's MRTU energy prices, as opposed to Power Exchange era price shapes used previously. Additionally, a separate allocation of capacity value was also added. Both changes made the avoided cost energy prices higher in on-peak periods and lower in off-peak periods. This increases the value for air conditioning measures but decreases the value for lighting measures, which account for a large portion of the savings for many municipal (and IOU) programs.

3. **Lower DEER savings.** The 2008 DEER update lowered the estimated energy savings for a wide variety of measures. The reductions result primarily from improved building stock and updated codes and standards that raise the natural replacement baseline against which efficiency measures are compared. Key differences between DEER 2005 and DEER 2008 include:

    - Measure cost for screw-in compact fluorescent lights (CFL) decreased between 30-40 percent per bulb, with the expected useful life for CFLs also decreased from 9 years to 5.3 years for an 8,000-hour rated lamp.

    - Significantly lower energy savings for freezer and refrigerator recycling. Savings dropped from over 1,900 kilowatt hours per year to 926 kilowatt hours per year for removing a refrigerator from an unconditioned space such as a garage. The measure life for refrigerator recycling also dropped from 10 years to 5 years.

    - Baseline cooling ratings for buildings built before 1992 increased from SEER 8.5 to SEER 10.0, lowering energy savings compared with the baseline.[1]

[1] Source: http://www.deeresources.com/deer2008exante/downloads/DEER2008UPDATE-EnergyAnalysisMethodsChangeSummaryV4.pdf).

- Baseline heating Annual Fuel Utilization Efficiency for buildings built before 1992 increased from 70 percent to 78 percent.

- For nonresidential lighting, annual operating hours were reduced in DEER 2008, especially for office building types.

- New measures are included in DEER 2008, including non-residential bi-level lighting , high-bay T5 high output lighting, LED holiday lights, non-residential duct sealing, and variable frequency drives for heating, ventilation, and air conditioning (HVAC) systems.

4. **Lower net-to-gross ratios**:[2] The updated DEER net-to-gross table included many additional measure categories as compared to previous years. Also, many net-to-gross estimates have been updated to reflect the results of EM&V studies undertaken in recent years. For many measure categories, this resulted in lower net-to-gross ratios, compared to previous years. This both reduced the net savings and increased the free rider incentive cost included in the TRC.

For these reasons, lower net savings and TRC ratios are being reported for many utilities in 2011, compared to 2010. This is primarily a reflection of changes in the avoided costs and DEER measures, not a reflection of program performance that is declining.

Verifying Program Results (Independent Evaluation)

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."[3] Public power has strategically responded to this directive 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.

At the time this report was published, the public power community had 78 separate EM&V 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, with subsequent reports posted to the same URL as they are completed.

The EM&V process used to provide utility program managers with feedback relies generally on the approaches articulated in the National Action Plan for Energy Efficiency, adopted CPUC protocols, and the innovation and expertise of firms experienced in program evaluation. To further enhance the value of the information obtained from these reports, the public power community has worked with CEC staff

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[2] Net-to-gross ratios discount resource and cost savings associated with a particular measure. It accounts for such factors as free ridership, equipment failure, equipment that is never installed or is removed.

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

to develop a consistent set of evaluation protocols for third-party consultants that are retained to evaluate utility programs. SCPPA and NCPA continue their active collaboration in this regard, sharing best practices and coordinating the distribution of program evaluation information throughout the public power community. Results from the EM&V studies provide utility program managers with feedback to improve program effectiveness.

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. Key findings from reports submitted by POUs continue to 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 the web link noted earlier, the following list provides a small sample of these recently completed from a number of POUs:

- **Lodi Electric.** Lodi evaluated its appliance rebate program and the five commercial projects completed under the utility's commercial rebate program. Realization rates for the appliance program exceeded 140 percent, while the realization rates of its energy savings amounted to approximately 73 percent.

- **Lompoc.** Lompoc evaluated its commercial lighting program, consisting of an evaluation of eight different site visits. The analysis produced a realization rate nearly double the amount of savings, driven by longer operating times at one facility, and higher levels of retrofitted equipment at another facility, compared to what was reported.

- **Roseville Electric**. Roseville contracted a third-party evaluation of the Shade Tree program for FY 10/11. The study noted that while overall satisfaction with the program is high with Roseville residents energy efficiency savings were diminished by incorrect placement of trees in relation to the homes, by the species rebated and due to the mortality of the rebated tree. The study provided recommendations to improve program results through customer education, tree selection and data tracking.

- **Silicon Valley Power.** SVP analyzed its non-residential programs, evaluating 193 projects in its service territory through a combination of site visits and phone verification surveys. SVP's review confirmed a realization of 101 percent.

III. Overview of Energy Efficiency Programs

Public power utilities have a long history of commitment to the deployment of energy efficiency programs, well before the statutory directives of SB1037 and AB2021 which formalized the reporting requirements that have been in place since 2005. POU's 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, residential air conditioning direct control load 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.

This section provides a snapshot of a variety of energy efficiency programs offered by the state's publicly-owned utilities, highlighting utility best practices, multi-utility collaboration efforts. The latter part of this section will offer a brief synopsis of the programs relying on funding from the ARRA Stimulus Program.

Public Power Success Stories: Best Practices

Public power commitments to energy efficiency programs are exemplary. Residential programs focus on energy audits, Energy Star® appliance rebates and replacements, lighting improvements, attic insulation, as well as incentives to install highly-efficient HVAC systems. Commercial and industrial programs target lighting, HVAC, and manufacturing/ food processing equipment, and refrigeration. POUs place great emphasis on partnering with schools and public institutions to educate residents and implement a variety of beneficial programs. Some of the more popular programs include those related to CFLs as well as refrigerator replacements.

Public power utilities rely on their close relationships with their customers and their clear connection to local government to drive the success of their energy efficiency programs, particularly with respect to their ability to specifically tailor programs to meet the needs of their communities. Inherent in the POU business model is responsiveness to local concerns, allowing them to maximize the value of all energy efficiency programs, taking into consideration climate zones and other factors. Common to all, especially in the current state of the economy, 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.

As in previous reports, this section of the report features best practices that are likely to be utilized by multiple utilities or are already moving down that path. Such activities build upon the strong network of collaboration that public power has traditionally relied upon to produce the most effective package of energy efficiency programs.

Home Energy Reports

Several utilities, including Anaheim, Burbank, Glendale, Palo Alto, Pasadena, and SMUD are partnering with Opower to deliver customized printed energy use reports and provide online access to randomly selected residential electric customers. These reports compare the electric usage of each recipient with similar households. The Home Energy Reporting system is a proprietary technology platform that integrates usage data with an array of third-party housing, GIS, and demographic data to derive personalized insights about customers and their energy use. The software analytics engine enables the coupling of insightful messaging with specific, targeted action steps for each household to help the customer reduce their electricity consumption. Currently, the program integrates existing billing data and multiple external data sources to educate customers on how they can save energy.

Shade Trees

Many utilities provide free trees or rebates for purchasing trees, a program that was first initiated by a California public power utility. SMUD, the first utility in the nation to offer a large-scale tree planting program, provides trees to shade for residential and commercial buildings, reducing the need for air conditioning and lowering energy consumption. Customers in the Sacramento area have been receiving such trees for more than two decades, with the utility having planted more than half a million since 1990. Riverside Public Utilities, in the southern part of the state, just celebrated the planting of its 100,000th shade tree funded with public benefits dollars.

Several other California utilities operate an active shade tree programs, including Anaheim, Burbank, Glendale, Modesto, Needles, Pasadena, Riverside, Roseville, and Turlock. As an example of how such programs work, Pasadena's "Cool Trees" program provides up to $50 per tree planted for residential customers. Customers receive a guidebook instructing them how to site, select, plant and maintain healthy energy saving shade trees. Pasadena's Tree Line USA award-winning field crews also use program materials to educate customers on the proper placement of trees to avoid impacting utilities. Customers select tree species from a list of arborist-approved trees. Burbank provides residential

customers up to three trees and commercial customers up to 20 shade trees, selected by the customers and delivered for free. The installation of the trees is provided at the customer's expense, with the installation verified by Burbank's contracted arborist. In the last reporting cycle, the utility provided about 340 trees to customers.

Whole House Efficiency Programs

Many utilities give serious consideration to the system benefits that are realized by customers as they consider investing in energy efficiency programs. Burbank Water & Power is an example of a public power utility that has aggressively deployed such a program, commencing its "Green Home House Program" in November 2009. This CMUA award winning program has several components, all provided at no charge to participants:

1. In-home Energy and Water Education: A Burbank-retained consultant meets with residents to discuss 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 CFLs.
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. Air Conditioning Tune-up Services: The contractor also provides free tune-up services for central air conditioners, including refrigerant charge, airflow adjustment, and condenser coil cleaning.
6. Irrigation System Inspection and Programming: To complement the water side of the utility, Burbank has included irrigation system inspection and controller programming as part of this on-site program. Controllers can 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.

Burbank heavily advertises this program via direct mail and utility newsletters that are provided to customers on a quarterly basis, as well as through the use of video that is available on the City's public access channel. In its first two years of operation, the utility has served 2,200 households. In FY10/11, Burbank began working with the local gas company to provide even more extensive services for low-income households in Burbank.

Riverside Public Utilities is another public power utility that provides a whole house program to its customers, offering rebates to customers that complete two or more energy efficiency measures at a time. Points are awarded for each type of measure and then rebate multipliers are given at specific point intervals on a sliding scale to encourage implementation of more energy efficiency measures. The program is currently funded with a combination of ARRA dollars and public benefits funds. To date, the program has resulted in energy efficient retrofitting for over 700 homes in the city.

Finally, SMUD received approximately $20 million in ARRA State Energy Program (SEP) funds from the CEC to implement a whole house approach to energy efficiency it calls the Home Performance Program (HPP). The program includes the following activities:

- Single family HERS II or BPI audits and home performance retrofits,
- Multi-family HERS II audits and home performance retrofits, and
- Weatherization for qualified low-income households.

Not only is the program designed to create demand for building science professionals by providing a catalyst for technological advances, it also provides significant and permanent energy savings in Sacramento households, and promotes retention or creation of green jobs in the Sacramento region.

Vending Miser

Vending Miser entails the installation of "EnergyMiser®" intelligent energy controllers that use passive infrared sensors to power-down refrigerated vending machines, glass door coolers or snack machines when the area around the machine is not occupied. If there is no foot traffic in front of the machine for 15 minutes, the machine is shut down. If someone walks by the machine, the sensor will sense the movement and send power back to the machine, keeping the product cold while significantly reducing energy use and costs. As a result, the technology produces an average energy savings exceeding 35 percent or even greater. Results to date have been quite impressive. Lodi retrofitted 110 vending machines in its community, reporting substantial energy savings, and easy to implement as a turnkey project. Glendale has installed more than 700 units since mid-2009. The Vending Miser program has also been implemented at Burbank, Palo Alto, and Riverside, with Roseville and the Imperial Irrigation District adding the program to their respective portfolios in 2011.

Programs Focused on Education

The close relationship between public power utilities and the communities makes education a logical focus of locally-driven energy efficiency programs. Major challenges continue to adversely impact school district funding throughout California, and most POUs provide active support to schools to help them reduce energy consumption and manage their energy expenditures. To that end, significant attention is given to programs that replace less efficient lighting and air conditioning systems. Other utilities creatively promote educational activities for students to learn the basics of energy science, energy conservation, and energy efficiency.

The Youth Energy Summit is a program that prepares students by providing them with the tools to become civic-minded energy advocates. The event is now in its third year, having reached out to more than 200 students in the Sacramento area. The summit is primarily sponsored by SMUD, Roseville Electric, Lodi Electric, and California State University, Sacramento.

During the annual two-day event, students learn 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 students who participate put their newly acquired skills to use by completing energy-related service learning projects in their community. Students documented and share their experiences with legislators and the general public at the State Capitol on Earth Day in April, with scholarships awarded to the top student teams.

Azusa, Burbank, Glendale, Lodi, Roseville, and Truckee Donner are among the POUs offering the LivingWise Program, an approach where students learn about energy and water conservation in their classrooms. Through the program, all 6th grade students in the participating public power communities receive a kit containing water and energy saving devices and information. This information aligns well with the environmental content that teachers instruct on. The science teachers consistently report that the LivingWise kits provide insights that help the students truly understand the concepts. The tools the students receive in the kits are taken home and installed with the help of family members. In this way, the instruction extends beyond the classroom and to households, reinforcing the lessons learned. LivingWise provides students and their families with the tools needed to audit and retrofit their homes, generating immediate, verifiable and lasting energy and water resource savings.

Pasadena utilizes a successful partnership with local nonprofits such as Outward Bound, Inc. to train and work in the field conducting customer education, surveys, and audits. Winner of the CMUA 2011 Community Service/Resource Efficiency award, the utility's "Summer Blues Small Business Outreach and Audit Program" sent a team of trained high school and college students to small businesses. They conducted energy and water needs assessments and collected critical contact information for a subsequent direct install program. The team reached out to nearly 680 small business customers and conducted 151 assessments, learning important skills in the process.

On a smaller scale, Redding Electric Utility hosts Energy Efficiency, Conservation and Electrical Safety education presentations to local area schools every Friday in partnership with Redding's Turtle Bay Exploration Park and Natural Resource Museum. In 2011, REU's education team, consisting of one Energy Auditor/Education Program Coordinator and two REU Linemen, reached more than 2,000 4th and 5th graders as well as almost 600 junior high and high school students.

Truckee Donner partners with the Truckee Tahoe Unified School District and the Sierra Watershed Education Partnership in the development of *Trashion Shows,* where the District distributed over 1,800 conservation kits (low-flow hose spray nozzles with a flyer on energy/water conservation) to every elementary and middle school student in its service territory. The event is a combination of science, art, and peer-to-peer education led by the Truckee High School Envirolution Club. The students develop runway-quality costumes out of trash, each with a conservation or environmental message. *Trashion Shows* were held at general assemblies at each elementary and middle school and the TDPUD's conservation kits were integrated into the show and then distributed, by the high school students, to the younger children at the end of each show. This partnership was very cost-effective in delivering important energy and water savings measures to customers. Truckee Donner considers the benefits of peer-to-peer education and the resulting leadership from high school students to be invaluable.

Finally, Roseville Electric, through its Utility Exploration Center (UEC) dedicates itself to educating customers and school children about energy conservation and a sustainable lifestyle. Open since 2007, the UEC is attempting to quantify the contribution of education within the community to reductions in kilowatt hour usage and summer peak demand. Roseville Electric strongly believes that customer education leads to greater energy efficiency and conservation. The UEC partners with regional elementary schools to provide tours to approximately 3,000 school children, designed to be consistent with state grade level educational standards.

The Impact of the Recession on Utility Energy Efficiency Programs

The wide range of best practices noted above is most impressive, considering the difficulties California consumers have experienced in connection with the economy. California continues to endure one of the deepest economic recessions it has experienced since the Great Depression. Statewide unemployment remains among the highest in the country, with job growth lagging behind other regions, and businesses struggling to stay afloat. While there are signs of some level of economic recovery in areas along the coast, the regions of the Central Valley, the High Sierra, and the southeastern desert continue to struggle from the impacts of the recession. Another barometer of economic health, home foreclosures, has not really improved, and continues to be a troubling reality.

These struggles have further increased and extended the difficulties for California utilities to effectively deploy aggressive energy efficiency programs. Utility customers are challenged by the lack of disposable income, and their savings are even further depleted, which precludes them from investing in energy efficiency programs, even if the investment would produce energy savings that would pay for itself in a very short timeframe. Utilities are hampered by severe budgetary considerations at both the local and state level, which reduce the level of staffing available for customer outreach and key account communication, decreases staff training that is critical for the development of new and innovative programs, and often results in a suboptimal package of programs that are ultimately offered to customers.

Clearly, California's economic situation has impacted every utility in the state, small and large, north and south, public power and investor-owned utility. Unemployment rates in a number of communities served by POUs are well above the national and state averages. The following data for December 2011 provides an example of a few public power utilities experiencing high unemployment rates: Gridley - 28.0%, IID - 26.8%, Shasta Lake- 18.1%, Lompoc - 15.2%, and LADWP – 12.8%. In areas where unemployment is high, there is less disposable income available to spend on energy efficiency programs. In many cases, while cost effective energy efficiency programs may reduce energy costs in the long term, these customers leave the energy efficiency opportunities behind as they select the basic necessities like food and housing expenses.

Consider the following examples that confronted certain utilities in 2011:

- Alameda: Energy efficiency has been particularly difficult to deploy for small and medium businesses who typically lease their space. According to a recent RKS Commercial Customer Survey performed for the city, over two-thirds of Alameda businesses report the economy is having a major impact on their willingness to invest in energy efficiency.

- Biggs: The recession has adversely affected the city's Residential DSM Program, dropping participation by 87 percent over the past four years. Residential DSM measures represent all savings for the reporting period. In 2010, an extensive industrial lighting retrofit project was approved for the city's largest industrial customer, but the customer failed to move forward with the installation. Thus, allocated rebate funds were never disbursed and no energy savings were realized.

- Lompoc: The downturn in the economy has affected customer willingness to spend money on energy efficient appliances. Even if the old appliance 'breaks down' it has become evident that they will not purchase the most energy efficient appliance or the type of first choice, but instead will purchase the least expensive model that will meet minimum needs. Lompoc offers rebates to replace working appliances with more efficient equipment, but the number of customers willing to participate in the programs has decreased in the past two years. This is also evident when approaching commercial customers to discuss the lighting retrofits. Lompoc pays 85-95 percent of the cost to retrofit existing fixtures, but business owners have been reluctant to participate in this highly cost-effective program.

- Modesto Irrigation District: According to Construction Industry Research Board data, total building permit valuations for the County of Stanislaus declined dramatically in the past few years (from $653.4 million in 2007 to $212.9 million in 2010). As a result of these conditions, Modesto has witnessed a decline in its rate of load growth, a slowdown in the general business activity in its service area, and an increase in the amount of delinquent accounts.

- Plumas-Sierra: With the near halt of new construction and economic downturn, actual energy efficiency savings compared to forecasted energy efficiency goals have been drastically impacted. Ground source heat pump installation, a major feature of Plumas-Sierra's program offerings, has declined by 87 percent since 2006. Electric service write-offs during that time period have increased by more than 40 percent.

Despite these challenges, in some areas, the economy is beginning to show signs of recovery and program activity is beginning to rebound. In Lodi, the utility engaged more commercial/industrial customers in discussions pertaining to energy efficiency projects than it has in recent fiscal years. Although some larger energy users continued to express concerns about the health of the economy,

many did feel greater confidence in the years ahead. If the economy continues to improve, more investments will be made in energy efficiency.

In the case of Riverside, despite a weak local economy and the sunsetting of federal tax credits for energy efficiency measures, the utility has taken aggressive steps to move forward with its program offering. Riverside reports that at least part of this result is driven by the deployment of an aggressive marketing program to its customers. In the past year alone, program participation rose from 22,000 applications to 31,000 applications. Such an approach might serve as an example for other mid-sized utilities to follow as a way to respond to difficult economic conditions. However, considering the diversity of utility operations, many utilities may simply not have the physical ability to dedicate scarce resources to such efforts.

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

With a number of jurisdictions realizing the full impact of the recession, a number of public power utilities have placed considerable efforts towards using a one-time opportunity to enhance its program offerings in 2011, courtesy of the federal government. ARRA was signed into law in February 2009, providing more than $60 million to 29 municipal communities in California, under the Energy Efficiency and Conservation Block Grant (EECBG) program and $175 million in smart grid funding.[4]

For cities with a population exceeding 35,000, the dollars included in the EECBG program were provided to municipalities directly by the U.S. Department of Energy. Small cities, however, receive their funding directly from the CEC. As of February 2012, California cities with public power utilities spent approximately $43 million, with much of the activity providing a positive impact to 2011 program activities.[5]

As these dollars became available, it is important to note that, while such grants could be used for energy efficiency and conservation programs by the local utility, it could appropriately be used by cities for communitywide projects, as well as renewable energy installations on government buildings, and related activities defined by the federal government. Projects defined to be eligible for funding include the following:

- Development of an energy efficiency and conservation strategy,
- Building energy audits and retrofits, including weatherization,

[4] Public utility districts and irrigation districts were not eligible for funding under the EECBG program.

[5] In terms of reported savings, program funded exclusively with ARRA dollars were not included in total reported savings.

- Financial incentive programs for energy efficiency such as energy savings performance, contracting, on-bill financing, and revolving loan funds,
- Transportation programs to conserve energy and support renewable fuel infrastructure,
- Building code development, implementation, and inspections
- Installation of distributed energy technologies including combined heat and power and district heating and cooling systems,
- Material conservation programs including source reduction, recycling, and recycled content procurement programs,
- Reduction and capture of greenhouse gas emissions generated by landfills or similar waste-related sources,
- Installation of energy efficient traffic signals and street lighting,
- Installation of renewable energy technologies on government buildings, and
- Any other appropriate activity that meets the purposes of the program and is approved by DOE

Even with the wide range of uses, significant attention was dedicated to energy efficiency programs, the focus of this section. While not exhaustive, the following provides a snapshot of EECBG program activity undertaken by the public power communities in California.

Alameda

Energy audits for all City facilities were completed in 2011. A team was created to develop an Energy Plan to implement all cost effective measures, provide retro-commissioning, and establish an ongoing monitoring process to ensure continuous energy improvement. Occupancy sensors were installed throughout City Hall. In addition, energy audits for all school district facilities were completed in 2011. Alameda is now working its local school district to implement the measures.

Anaheim

Anaheim used its EECBG funds to supplement its public benefits programs for weatherization, lighting incentives and rebates, and small and medium business programs. In FY10/11, these programs were supplemented by approximately $196,000.

Azusa

Azusa participated in the EECBG program by installing new higher efficiency HVAC equipment at the Azusa Police Department, using the entire $191,600 of funds available to the City.

Glendale

Glendale received $1,883,700 in EECBG funding. Funding expenditures included $1.2 million for City facilities retrofits and $683,000 for various other energy efficiency projects in the private sector. The

total annual energy savings was 7,649,717 kilowatt hours. It is estimated that the grant funds created approximately 20 jobs with a total of 13,596 labor hours.

Biggs, Gridley, Healdsburg and Ukiah

The cities of Biggs, Gridley, Healdsburg and Ukiah joined in a coordinated project led by NCPA to install LED street lighting as a demonstration project. The $203,000 in funding resulted in the installation of 50 lights in Biggs, 72 in Gridley, 103 in Healdsburg, and 117 in Ukiah.

Lodi

Lodi received $586,200 in EECBG funds. Lodi fully expended its $586,200 federal grant, as well as $300,000 of matching funds from its public benefits program fund for 10 different programs and projects: enhanced rebates for residential building envelope improvements; energy efficiency improvements to a parks building; installation of a new energy management system at the community center complex; installation of a new blade server project for the City of Lodi information systems office; energy efficiency rebates for Lodi's hotel/lodging facilities; purchase and installation of solar-powered refuse containers placed at City parks; installation of high efficiency lighting at the Lodi Grape Bowl sports facility; and an energy efficiency educational program for Kindergarten through 6th grade students.

Lompoc

Lompoc received $165,000 of EECBG funding. One hundred thousand dollars was used to retrofit existing street lighting from high pressure sodium (HPS) to LED lighting. Sixty-five thousand dollars plus $30,000 from other funding was used to offer rebates to commercial businesses to retrofit existing T12 lighting to more energy efficient lighting. Installation of occupancy sensors was also included in this program.

LADWP

LADWP received $8 million from the City's $ 37 million EECBG award, to be used for energy efficiency programs and measures. These include:

- Incentives for commercial building retro-commissioning,
- Rebates for residential whole house fans and cool roofs,
- Energy efficiency audit/retrofit program for non-profit agencies,
- Community outreach by non-profit agencies, and
- Rebates for residential whole-house retrofit measures (Energy Upgrade California).

LADWP also received ARRA grant funds through the California Department of Community Services and Development for the development and implementation of a low income residence weatherization assistance program.

Palo Alto

Palo Alto developed two projects with its EECBG funding. They include the early replacement of High Pressure Sodium (HPS) street lights on selected streets with LED street lights and implementation of Home Energy Reports for residents.

Pasadena

Pasadena leveraged ARRA funds with its capital improvement and efficiency rebate funds to complete the retrofit of 803 HPS street lights to induction lighting. This project resulted in up to 40 percent annual savings of over 400,000 kilowatt hours with a demand reduction of 117 kilowatts. Induction lighting has a 100,000 hour rated life compared to the 20,000 hour life of the HPS bulbs and is expected to reduce maintenance due to the lifecycle improvements. A second phase is in progress to replace 2- and 4-foot fluorescent tube lamps with LED tube lamps in municipal offices and facilities. Four building projects have been completed to date.

Rancho Cucamonga

Rancho Cucamonga received $1,367,760 in EECBG funding. Of that amount, $573,890 was used to replace the existing 19 year old variable air volume (VAV) boxes and HVAC control system with Direct Digital Control (DDC) VAV boxes and an advanced digital controlled system for the City Hall complex, serviced by the utility. The system will provide much greater efficiency in controlling air conditioning and heating comfort as well as a variety of heating and cooling strategies which can be easily modified from the central station or off-site using web based access. Based on recent studies, an upgraded and highly efficient HVAC mechanical and electrical system can increase energy efficiency by 15-20 percent.

Redding

Redding received an EECBG allocation of $892,700 and implemented a whole-house based, deep energy retrofit and weatherization program for income-qualified customers. Part of this program included 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. The success of this program was highlighted in the January 2012 issue of the internationally recognized *ASHRAE Journal* which included empirical savings that showed more than a 30 percent energy reduction and a 50 percent or more reduction in air conditioner tonnage (peak demand reduction), with improved comfort and indoor air quality in all of the homes that were part of REU's program. These program successes have led Redding to develop a comprehensive public benefits funded rebate program to support and encourage the growth of Home Performance Program in its community.

Riverside

The City of Riverside was allocated $2,499,810 of EECBG dollars, of which slightly more than half of the funds used for specific energy efficiency related projects:

• Government Building Retrofits	$308,030
• Whole House Rebate Program	714,000
• Street Lighting Retrofit LED	254,050
• Lighted Street Name Sign Reduction	450,030

Roseville

Roseville was awarded $1,073,700 in EECBG funding. The City approved disbursement of these funds to small business energy efficiency retrofit rebates, city owned facility lighting retrofits and an LED City streetlight pilot project. These activities and related energy savings are in addition to Roseville's reported Public Benefit program results. In 2010-2011, approved projects and completions include:

- Small Business Lighting Retrofit Program: $312,400 rebated, 355 kilowatts and 1,408,000 kilowatt hour per year reductions realized,
- Small Business Reach In/Walk-in Refrigeration Retrofit Program: $257,200 rebated, 188 kilowatt and 1,304,000 kilowatt hour per year reductions realized,
- City LED Street Light Project: $43,200 spent. Completed installation and evaluation of LED fixtures and submitted final report for future street light specifications,
- Roseville Facility Lighting Retrofit: $219,000 spent, 85 kilowatt and 350,000 kilowatt per year reductions realized.

City and County of San Francisco

San Francisco Public Utilities Commission (San Francisco PUC) is administering San Francisco's EECBG grant funds. In FY 10-11 17 energy retrofit projects were completed in 10 municipal buildings. Total program costs were $3.7 million, of which $3 million was from the EECBG grant.

Silicon Valley Power

The City of Santa Clara was awarded $1,180,900 in EECBG funds. The programs that were administered through Silicon Valley Power were the following:

- Retro-commissioning 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 Santa Clara, and
- A low income & multifamily weatherization program

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 1 summarizes POU energy efficiency program savings and cost information for fiscal years 2006 through 2011.[6] During FY10/11, POUs spent approximately $132 million on energy efficiency programs, which, when added to previous investments, a slight increase compared to the previous year. Supporting those investments were reductions in peak demand last year close to 81 megawatts as well as more than 460 million kilowatt-hours of energy saved over the course of the year. As noted earlier, with higher expenditures, the drop in savings largely reflects a shift in the energy savings benchmarks from DEER 2005 to DEER 2008.

Table 1 Program Summary

2006 2011 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
FY09/10	93,712	522,928,998	5,586,299	$ 123,433,250
FY10/11	81,121	459,458,539	4,604,364	$ 132,689,906

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. From a state policy perspective focused on the need to understand the diversity of public power utilities, it is important to understand the energy efficiency program trends of the other POUs across the state.

Table 2 attempts to do so, highlighting public power's 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

[6] 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 FY10/11 is actually calendar year 2011. CMUA, NCPA, SCPPA, and CEC staff recognize this data nuance.

savings. During FY10/11, the remaining utilities spent about $52 million on energy efficiency programs, the highest level since collaborative reporting started six years ago. Peak load reductions increased slightly to 38 megawatts, while total annual savings dropped to 162 million kilowatt hours.

Table 2 Program Summary (excluding LADWP & SMUD)

2006 2011 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
FY09/10	37,781	219,315,182	2,529,693	$ 51,301,075
FY10/11	38,285	161,571,624	1,909,185	$ 52,378,517

Looking at it yet another way, the largest 15 utilities measured by annual kilowatt hours of savings provided more than 96 percent of the amount reported by the entire POU community. Table 3 provides the FY 10/11 data for these 15 utilities and shows their combined energy savings as a percentage of the total POU energy savings for the year. For the second consecutive year, SMUD is ranked as the utility with the largest level of annual savings. The newest addition to the Top 15 this year is SF Public Utilities Commission, which is reporting in this collaborative effort here for the first time.

Table 3 Utilities Most Heavily Influencing Energy Efficiency Savings

Utility	Net Peak KW Savings	Net Annual KWh Savings	Utility Percent of Total Savings	Percentage of Total Savings
SMUD	23,440	170,640,740	37.1%	37.1%
LADWP	19,397	127,246,175	27.7%	64.8%
Silicon Valley Power	2,207	24,575,528	5.3%	70.2%
Riverside Public Utilities	5,076	22,395,710	4.9%	75.1%
Anaheim Public Utilities	4,254	13,102,684	2.9%	77.9%
Burbank Water & Power	4,262	12,244,346	2.7%	80.6%
Pasadena Water and Power	2,070	12,244,298	2.7%	83.2%
Modesto Irrigation District	1,841	11,941,532	2.6%	85.8%
Glendale Water and Power	6,145	11,763,873	2.6%	88.4%
Imperial Irrigation District	2,882	10,034,126	2.2%	90.6%
Roseville Electric	2,001	8,633,947	1.9%	92.5%
City of Palo Alto Utilities	642	6,457,345	1.4%	93.9%
Turlock ID	1,136	4,329,618	0.9%	94.8%
San Francisco PUC	592	3,633,801	0.8%	95.6%
Truckee Donner Public Utility District	1,136	3,400,293	0.7%	96.3%

Table 4 provides a comprehensive summary of energy efficiency savings and an aggregated measure of cost effectiveness, including all of the 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. The two largest municipalities (LADWP, SMUD) had peak savings during the reporting period that exceeded 42 megawatts. Another 11 utilities (Anaheim, Burbank, Glendale, Imperial Irrigation District, Modesto Irrigation District, Pasadena, Riverside, Roseville, Silicon Valley Power, Turlock Irrigation District, and Truckee Donner Public Utility District) had peak savings that are between 1-7 megawatts.

Table 4 Summary of Utility Results FY 10/11

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 ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)	TRC
Alameda	241	1,433,126	13,171,486	7,264	224,026	429,790	653,816	1.46
Anaheim	4,254	13,102,684	171,106,773	101,445	3,329,255	-	3,329,255	4.35
Azusa	481	2,574,938	22,436,459	13,622	1,010,329	102,687	1,113,016	1.62
Banning	147	141,124	2,324,803	1,456	90,937	164,922	255,859	0.67
Biggs	176	80,905	404,733	213	255	500	755	3.72
Burbank	4,262	12,244,346	142,787,475	86,594	3,090,831	580,679	3,671,510	1.26
Colton	20	84,045	678,838	396	62,492	15,000	77,492	0.67
Corona	74	28,774	345,290	206	27,300	15,264	42,564	0.13
Glendale	6,145	11,763,873	87,170,986	52,622	4,466,867	317,111	4,783,978	1.02
Gridley	59	237,462	2,605,447	1,431	99,406	52,843	152,249	1.24
Healdsburg	73	237,419	2,533,865	1,403	56,493	37,783	94,275	1.29
Hercules	1	445	5,703	3	550	-	550	0.19
Imperial ID	2,882	10,034,126	129,563,049	77,554	3,737,701	2,568,479	6,306,179	1.54
LADWP	19,397	127,246,175	1,329,959,715	805,770	31,755,079	17,774,121	49,529,200	2.50
Lassen	100	160,848	1,643,643	895	83,781	145,832	229,613	0.46
Lodi	793	2,904,519	29,400,322	16,164	499,667	140,558	640,225	1.74
Lompoc	34	82,620	790,666	434	28,139	18,000	46,139	0.91
Merced	23	3,320,586	25,448,764	13,953	390,699	308,237	698,936	2.23
Modesto	1,841	11,941,532	133,447,311	73,189	1,355,945	1,316,857	2,672,803	2.13
Moreno Valley	-	439,298	4,392,978	2,602	41,261	-	41,261	4.82
Needles	7	6,239	112,299	71	150,000	-	150,000	4.29
Palo Alto	642	6,457,345	44,530,304	25,044	895,810	1,310,473	2,206,283	1.32
Pasadena	2,070	12,244,298	184,536,914	110,801	2,828,933	282,894	3,111,827	1.10
Pittsburg	42	138,493	1,549,102	857	14,446	5,999	20,444	2.37
Plumas-Sierra	11	51,131	644,277	374	38,556	69,264	107,821	0.60
Rancho Cucamonga	41	211,663	3,386,610	2,006	29,621	32,000	61,621	3.09
Redding	1,159	723,256	9,853,658	5,689	1,008,512	190,551	1,199,063	1.07
Riverside	5,076	22,395,710	271,508,597	162,488	5,180,052	1,369,419	6,549,470	1.77
Roseville	2,001	8,633,947	126,157,001	68,474	1,702,986	930,218	2,633,204	4.30
SMUD	23,440	170,640,740	1,365,218,596	552,914	15,179,207	15,602,983	30,782,190	2.85
San Francisco PUC Power Enterprise	592	3,633,801	58,140,816	30,652	3,330,621	219,486	3,550,107	1.18
Shasta Lake	268	724,942	8,738,637	4,856	202,365	141,842	344,207	2.05
Silicon Valley Power	2,207	24,575,528	320,012,944	171,025	2,589,436	2,414,186	5,003,622	2.22
Trinity PUD	-	8,762	175,248	106	32,659	-	32,659	0.70
Truckee Donner	1,136	3,400,293	30,824,481	16,624	580,138	387,698	967,836	2.81
Turlock ID	594	4,329,618	42,669,638	23,363	459,028	288,252	747,280	1.56
Ukiah	339	1,095,800	10,991,140	6,094	492,315	100,874	593,189	1.22
Vernon	495	2,128,125	25,095,083	14,863	242,069	47,340	289,409	4.72
-		-						-
-	-	-	-	-	-	-	-	-
Summary	81,121	459,458,539	4,604,363,653	2,453,518	$85,307,766	$47,382,141	$132,689,906	2.46

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

With respect to cost effectiveness, the aggregated TRCs for public power equals 2.46 in FY10/11, meaning that public power energy efficiency programs produce $2.46 in societal benefits for every dollar spent. In 30 different cases, TRCs reported for individual utilities satisfied the theoretical criteria for providing a portfolio of cost-effective programs to their communities. For those that did not meet the theoretical threshold, many were severely impacted by customer decisions largely driven by customers' individual economic situations.

Table 5 reviews the aggregated results by program sector. From the table, 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 accounted for the majority of program expenditures, although about one-third of the total was dedicated to utility marketing, administrative costs, and measurement and verification efforts.

Table 5 Summary by Program Sector FY 10/11

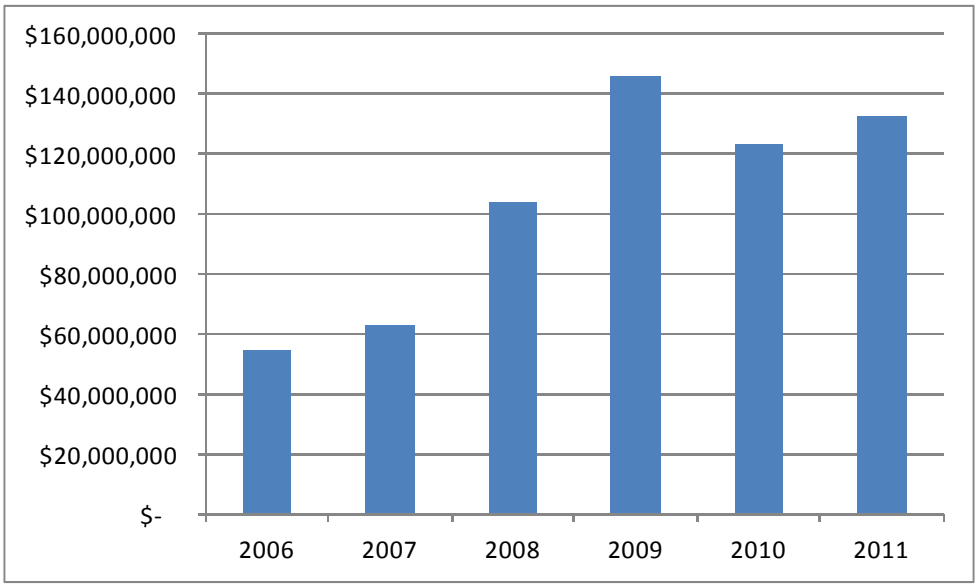
All POU Summary		Resource Savings Summary						Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	7,913	1,050	1,050	857,321	11,005,641	5,634	$ 537,156	$ 700,121	$ 1,237,278
HVAC	Res Cooling	60,556	6,464	7,695	10,652,053	204,893,368	115,496	$ 6,818,965	$ 3,023,769	$ 9,842,735
Appliances	Res Dishwashers	3,491	285	285	116,561	1,387,898	732	$ 186,226	$ 248,226	$ 434,452
Consumer Electronics	Res Electronics	45,506	1,334	1,334	14,637,819	146,397,573	59,325	$ 906,253	$ 1,234,211	$ 2,140,465
HVAC	Res Heating	744	351	348	1,231,577	22,278,701	9,122	$ 378,532	$ 197,152	$ 575,684
Lighting	Res Lighting	2,160,524	12,401	6,444	60,425,105	495,734,753	205,881	$ 4,505,600	$ 2,491,626	$ 6,997,226
Pool Pump	Res Pool Pump	1,415	128	128	733,959	7,339,589	4,198	$ 558,181	$ 90,252	$ 648,433
Refrigeration	Res Refrigeration	44,299	2,824	2,818	22,900,217	195,463,074	107,076	$ 9,602,872	$ 1,693,701	$ 11,296,573
HVAC	Res Shell	11,423	1,938	1,959	2,750,774	48,026,306	29,933	$ 2,784,412	$ 657,677	$ 3,442,089
Water Heating	Res Water Heating	9,730	20	20	224,555	3,527,321	1,620	$ 129,960	$ 60,295	$ 190,254
Comprehensive	Res Comprehensive	59,870	1,058	1,053	11,118,132	53,041,322	31,310	$ 3,149,703	$ 1,482,384	$ 4,632,088
Process	Non-Res Cooking	1			3,756	15,025	8	$ 750	$ 197	$ 947
HVAC	Non-Res Cooling	26,628,446	14,846	13,963	67,456,626	885,347,931	510,272	$ 11,522,352	$ 8,165,880	$ 19,688,232
HVAC	Non-Res Heating	3			8,601	102,915	57	$ 1,814	$ 3,496	$ 5,310
Lighting	Non-Res Lighting	4,584,360	30,493	28,800	147,681,235	1,379,693,706	769,878	$ 27,504,550	$ 15,210,868	$ 42,715,418
Process	Non-Res Motors	329,959	622	507	6,688,182	81,076,201	43,883	$ 945,968	$ 435,010	$ 1,380,977
Process	Non-Res Pumps	1,811	130	79	1,090,503	14,710,344	8,114	$ 300,090	$ 92,354	$ 392,445
Refrigeration	Non-Res Refrigeration	1,568,878	3,341	3,498	23,407,460	124,545,157	68,057	$ 2,291,855	$ 1,358,510	$ 3,650,365
HVAC	Non-Res Shell	3,099	112	116	203,418	2,260,075	1,342	$ 48,847	$ 11,118	$ 59,965
Process	Non Res Process	50	2,160	2,159	17,605,975	175,827,722	71,355	$ 300,586	$ 622,809	$ 923,395
Comprehensive	Non Res Comprehensi	28,417,718	8,884	8,835	68,140,167	747,091,274	407,539	$ 12,472,337	$ 7,132,746	$ 19,605,083
Other	Other	1,987	28	28	1,524,542	4,597,757	2,685	$ 360,756	$ 2,469,739	$ 2,830,495
SubTotal		63,941,782	88,471	81,121	459,458,539	4,604,363,653	2,453,518	$ 85,307,766	$ 47,382,142	$ 132,689,907
T&D	T&D	2	5	5	299,843	11,937,720	6,305		$ 65,910	$ 65,910
Total		63,941,784	88,476	81,127	459,758,382	4,616,301,373	2,459,823	$ 85,307,766	$ 47,448,052	$ 132,755,818

EE Program Portfolio TRC Test	**2.46**

TRC excludes T&D

Table 6 shows the trends in public power program expenditures since 2006. With total expenditures now at $132 million, 2011 represents the fourth consecutive year that public power expenditures have topped the $100 million threshold.

Table 6 Program Expenditures



Understanding Public Power Energy Efficiency Funding Sources

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." To that end, unless otherwise noted, it is assumed in this report that program funding for energy efficiency programs within the public power community comes from the traditional public goods charge that is collected from each utility customer.

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. Over the years, certain restrictions have been imposed on this discretion, limiting how future dollars 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, or even increase the public benefits surcharge to a level above the minimum 2.85% of

sales requirement. Additional dollars as a practical matter come directly from the general funds from each utility, but could, from an energy policy context, be considered a means to defer procurement investment, to put it in context that is consistent with the language of AB2021. For the 2011 report, specific investments beyond the public benefits fund were reported by Alameda, Burbank, Modesto Irrigation District, Palo Alto, Roseville, and Truckee Donner. Pasadena takes a slightly different approach, assessing its public benefits charge at a level exceeding the minimum 2.85% sales requirement, generating additional funding for energy efficiency programs.

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 7 shows POU expenditures as both a percent of retail sales, and as the total program cost per net unit of energy saved in the first year. With energy efficiency expenditures at 1.82 percent of retail sales, it is clear that California's POUs have established a very high priority for the efficient and effective delivery of energy efficiency programs to its customers, without specific mandates to do so.

Table 7 Efficacy of Public Power Efficiency Programs

2011 Estimated retail sales	$ 7,296,802,860
2011 Efficiency program expenditures	$ 132,689,906
Expenditures as a percent of sales	1.82%
Program cost per (net) MWH saved	$ 289

Energy Efficiency Targets: Measuring Progress to Plan

Last year, each POU in California adopted a set of 10-year energy efficiency targets covering the years 2011-2020. In this report, we compare actual to targeted savings for 2011. 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, guidance to the California Air Resources Board (CARB) in its greenhouse gas program, and other related policy objectives.

Despite the impacts of the economic recession, actual savings for public power utilities are tracking reasonably close to targeted savings. As shown in Table 8, after accounting for the continuing economic

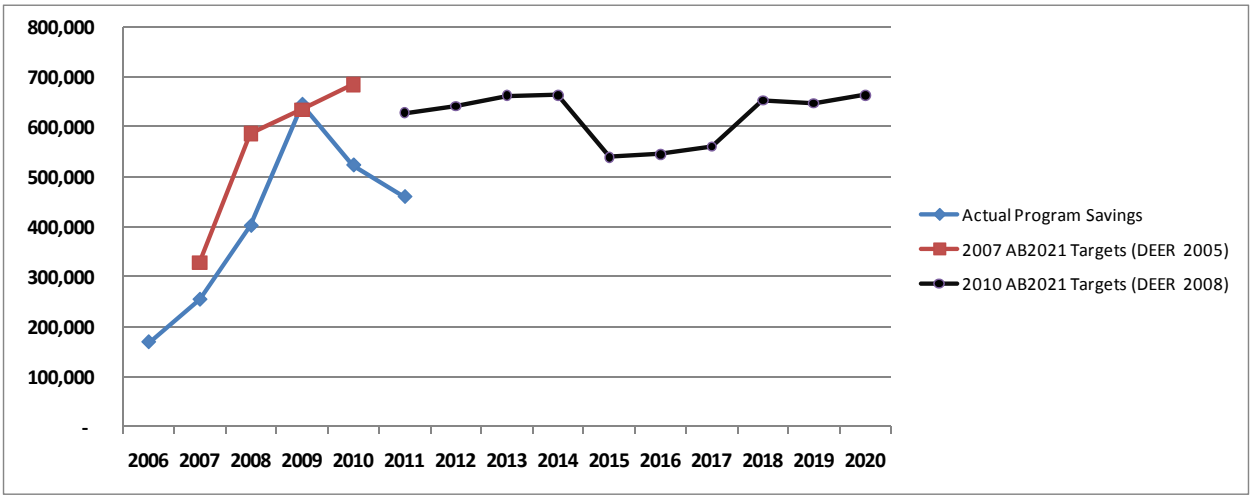
downturn, public power's progress to plan amounted to 76 percent. Smaller POUs managed to achieve savings that were approximately 95 percent of the targeted level. Of the total, 17 utilities reported actual savings that exceeded their adopted targets.

Table 8 Progress Toward AB 2021 Targets

	2011 Actual Savings MWH	2011 AB2021 Targets MWH	Savings as a Percent of Target
Alameda	1,433	1,574	91.0%
Anaheim	13,103	24,264	54.0%
Azusa	2,575	2,068	124.5%
Banning	141	962	14.7%
Biggs	81	44	184.1%
Burbank	12,244	8,768	139.6%
Colton	84	3,162	2.7%
Corona	29	166	17.3%
Glendale	11,764	11,060	106.4%
Gridley	237	75	316.6%
Healdsburg	237	420	56.5%
Hercules	0	75	0.6%
Imperial ID	10,034	19,743	50.8%
LADWP	127,246	271,000	47.0%
Lassen	161	375	42.9%
Lodi	2,905	2,296	126.5%
Lompoc	83	517	16.0%
Merced	3,321	1,316	252.3%
Modesto	11,942	16,207	73.7%
Moreno Valley	439	274	160.3%
Needles	6	205	3.0%
Palo Alto	6,457	5,799	111.4%
Pasadena	12,244	14,500	84.4%
Pittsburg	138	42	329.7%
Plumas-Sierra	51	237	21.6%
Rancho Cucamonga	212	46	460.1%
Redding	723	2,523	28.7%
Riverside	22,396	19,016	117.8%
Roseville	8,634	8,390	102.9%
SMUD	170,641	166,000	102.8%
San Francisco PUC Power Enterprise	3,634	-	n/a
Shasta Lake	725	8,390	8.6%
Silicon Valley Power	24,576	23,055	106.6%
Trinity PUD	9	14	62.6%
Truckee Donner	3,400	1,978	171.9%
Turlock ID	4,330	12,900	33.6%
Ukiah	1,096	250	438.3%
Vernon	2,128	8,020	26.5%
-			
-			
Summary	459,459	635,732	75.7%

Table 9 looks at the information from the previous chart in a slightly different way, looking at public power's progress toward reaching the 10-year targets since targets were initially adopted in 2007. Public power is now in the first year of a three-year target setting cycle, and in this case, provides its first apples-to-apples comparison of data using DEER 2008. The reduction in energy savings reflects major changes in DEER savings, as noted in an earlier section of this report and illustrated in the chart.

Table 9 Charting Progress Towards AB 2021 Targets



V. Demand Reduction Programs

As noted in previous reports, many of the large POUs have some form of demand response program or are in the process of implementing new programs. This section provides an update on some of the innovative programs being undertaken by public power systems, including an update on smart grid efforts tied to ARRA funding. Such programs benefit from the ability of public power utilities to effectively collaborate on program design and deployment.

Smart Grid Projects

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. To date, approximately 10,000 Anaheim customers have been converted to smart meters. An eMeter Energy IP Meter Data Management System has been installed and is fully operational. Additionally, the utility has installed a TIBCO Enterprise Service Bus to facilitate the integration of AMI and its Outage Management System. Finally, this summer, the utility launched a new web site hosted by Opower designed to help customers conserve energy and save money.

Burbank

Burbank's Smart Grid Program is a comprehensive, secure integration of multiple intelligent Smart Grid infrastructure systems and control processes designed to modernize the utility's electrical energy delivery systems. This multi-year $60 million capital improvement program is funded in part by a $20 million ARRA Smart Grid Investment Grant (SGIG) administered by the Department of Energy. The Smart Grid Program is expected to be fully funded through new efficiencies, savings, asset utilization revenues and grants.

Primary components of the program include:

- Communication Systems - Fiber optic Ethernet network and Wifi Secure Mesh radio network.
- AMI/MDMS Development – Installation of 51,000 AMI meters.
- Mission Critical Asset Protection physical and cyber security programs and systems.
- Distribution Automation Projects – Automated station and electric feeder circuits.
- Smart Grid Control Systems – Distribution Management and Outage Management systems.
- Demand Management and Control – Management of Demand Response and Distributed Energy Resources.
- Thermal Energy Storage – 30 Ice Bear space cooling systems with a total capacity equivalent of 2 MW.
- Electric Vehicle Charging Demonstration Program – Publicly accessible AC and DC charging stations.
- Microgrid and Energy Storage demonstration project – Large battery energy storage system.

BWP's progress update through December 2011 includes the following:

- BWP's Smart Grid investments total $28 million.
- City-wide fiber optic network expanded, and city-wide wireless network, Meter Data Management System, Water AMI, and Outage Management System are now complete.
- Electric AMI meters installation is 97 percent complete, and Water AMI meters installation is complete.
- New substation relays and automatic reclosing is on 50 percent of electric circuits.

- Opower Home Energy Reports are provided to 50 percent of residential customers.
- 11 Public access Electric Vehicle charging stations are in service.
- Completed Power flow model deployment and have begun system studies.
- SCADA system upgrade and Integrated Automatic Dispatch Systems is in deployment

Glendale

GWP was one of 33 public power utilities across the nation selected by the U.S. Department of Energy for a $20 million smart grid grant. Additionally, GWP was selected by the CEC to receive a $1 million Public Interest Energy and Research grant. The total value of the Glendale City AMI-Smart Grid Initiative is over $70 million. GWP began the project in August 2009 and completed the installation of 85,000 electric and 33,000 water meters in September 2011. Since project conception in August 2009, GWP has installed an AMI communications Backhaul, Meter Data Management System and 1.27 MW of Thermal Energy Storage. It will be completed over the next three years and include an Outage Management System/Demand Management System, Enterprise Service Bus, a Home Area Network, a web-portal for electric and water usage presentment and a Plug-In Electric Vehicle program.

The Glendale City AMI-Smart Grid Initiative will have the following infrastructure and functionality:

- Smart meters with large data storage capabilities and two-way communications hardware and software:
  - Electric meters with remotely-controllable switches to allow for remote service disconnect and re-connect
  - Water meters with leak detection and tamper alarm functionality.
- A wide area network to allow two-way communications between the utility and each meter in its service territory.
- A communications backbone for distribution automation, direct load control, distributed generation, demand response, and new customer directed 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 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.
- New smart grid enabled energy efficiency, load management, and demand response programs based on innovative critical peak pricing, time of use, and dynamic pricing programs.
- Deployment and integration of distributed resources and generation, including renewable resources.
- 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 ‘smart' appliances and consumer devices) for metering, communications concerning grid operations and status, and distribution automation.

- Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.

Additionally, the Glendale City AMI-Smart Grid Initiative will provide for:

- Improve reliability, security, and efficiency of the electric grid by increased use of digital information and controls technology.
- Dynamic optimization of grid operations and resources, with full cybersecurity.

LADWP

LADWP is collaborating with a consortium of research institutions to develop new Smart Grid technologies, quantify costs and benefits, validate new models, and create prototypes to be adapted nationally. The total project value is $120 million, of which $60 million is funded from the U.S. Department of Energy, and $60 million from non-DOE sources. The project consists of four broad initiatives, including:

- **Demand Response (DR)**: perform an integrated demonstration of Smart Grid operations and technology as applied to DR. Test bed sites will investigate a full range of user environments: residential, commercial, light industrial, and institutional.
- **Electric Vehicle (EV) integration into the LADWP Grid:** demonstrate aspects such as smart charging and battery aggregation, renewables and EV battery integration; an operational microgrid; and EV test bed sites at the University of Southern California and the University of California at Los Angeles.
- **Customer Behavior:** demonstrate a comprehensive portfolio of studies and focused surveys related to the impact of Smart Grid communications systems and processes on customer usage; energy savings from using Smart Grid enabled interfaces; pricing options and programs; and effective messaging and incentives regarding electric vehicles.
- **Next-Generation Cyber Security:** demonstrate technologies to show grid resilience against physical and cyber-attack; an operational testing approach for components and installed systems; and redefine the security perimeter to address Smart Grid technologies.

The final design phase is expected to be complete in the first quarter of 2012. The construction phase, testing and commissioning phases should be finished in the second quarter of 2013, with operations starting the following quarter.

Modesto Irrigation District

MID continued its development of a smart grid. MID has 100 percent of its AMI meters implemented across its service area, which exceeds 100,000 meters. MID installed equipment at one substation for its distribution system automation project that is intended to control end-of-line voltage. These projects received

approximately $1.5 million ARRA Smart Grid Investment Grant. In addition, MID prepared and adopted a Smart Grid Deployment Plan (per SB17). For 2012, MID will continue implementing the SGIG funded projects.

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, the County of Sacramento, and the Los Rios Community College District. To date, the utility has spent $75 million on the project.

SMUD started installing AMI, using Silver Spring Networks and Landis + Gyr meters, during the fourth quarter 2009. Full deployment of more than 600,000 meters is expected by mid-2012. The AMI system will allow for two-way communication with all customers and will enable additional opportunities for energy efficiency and peak load reduction. These systems enable more informed participation by customers. In addition to AMI, SMUD will implement distribution automation, test dynamic rates, install approximately 200 electric vehicle charging stations, incorporate demand response capability with programmable thermostats and controls in up to 10,000 homes, incorporate Auto DR in many commercial facilities, test energy storage at homes, distribution transformers and substations, test the impacts of high-penetration photovoltaic systems on the grid, and a number of additional smart grid-related projects.

Other key milestones include completion of distribution automation deployment and customer system deployment by the first quarter of 2013 and a consumer behavior study evaluation to be completed by the second quarter of 2014.

Other Projects

In addition to the significant attention being focused on the development of the smart grid, public power utilities also engage in other programs designed to reduce levels of peak demand. One of the more significant projects has focused on thermal energy storage.

Thermal energy storage is growing increasingly popular for public power utilities located in areas that have high summer peak demand usage. Many public power utilities are now investing in an energy storage product called Ice Bear, developed by Ice Energy. The product is designed to reduce 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.

SCPPA and a number of its members are investing more than $100 million in smart-grid enabled advanced energy storage, while Redding has committed more than $2 million for the first phase of its multi-year thermal energy storage program. Once the project is complete, approximately 1,500 units are expected to have been installed by SCPPA utilities, providing 53 megawatts of load shifting during the height of the peak cooling season. Ice Energy is providing for the manufacturing and delivery of

equipment through to installation and commissioning; including milestones, measurement, payment criteria, and all other required terms.[7]

Glendale has installed 162 Ice Bear units to date, shifting 1.3 megawatts of peak energy. In addition to installing Ice Bear units, Glendale worked with Ice Energy to replace approximately 337 tons of aging, inefficient City HVAC units on City Facilities at the same time they installed the Ice Bear units thereby taking advantage of available preferred pricing and reduced installation costs.

Burbank has installed 30 units to date, shifting an average of 186 kilowatts of peak energy on a daily basis. The utility is in the process of installing additional units, focused on two megawatts of peak-shifting capability. A two-year implementation plan is currently in development whereby hundreds of Ice Bear units will be installed at business customer locations.

Redding has completed its second phase of a multi-step program for the widespread deployment of the Ice Bear systems throughout its service territory. During FY 10/11, REU completed the installation of 50 additional units throughout the city. This program will continue into FY 11/12 and beyond as REU completes its full market potential study for Ice Bear installations. Based on results of the city wide survey to date, REU can reasonably expect to achieve 8 megawatts or more of permanent peak load shifting over the course of a multi-year program with Ice Energy.

VI. Conclusions and Lessons Learned

CMUA appreciates the opportunity to provide to the CEC this sixth assessment of public power energy efficiency programs in California. This analysis reaffirms the fact that public power energy efficiency programs are continuing to produce significant energy savings for the state in the most cost-effective manner. The following bullets provide the key findings of this analysis:

- POUs continue their long-standing commitment to energy efficiency, despite being impacted by the second year of a severe recession. During FY10/11, POUs spent more than $132 million on energy efficiency programs, the fourth consecutive year the $100 million threshold has been exceeded.
- Reductions in electricity consumption remain strong within the public power community with the wide range of energy efficiency programs being offered by 41 public power utilities in California. In the most recent reporting year, peak demand dropped nearly 81 megawatts and more than 460 million kilowatt hours of energy were saved.
- Public power energy efficiency programs are cost-effective. Applying the TRC societal test, the principal measure used in the industry to determine whether programs are cost-effective, the weighted average TRC for all publicly owned energy efficiency programs in FY10/11 was 2.46.

[7] SCPPA is installing a number of Ice Bear systems at its new corporate headquarters, located in Glendora.

By definition, any TRC greater than 1.0 comes with the theoretical assumption that the program is indeed cost-effective.

- The 15 largest POUs account for approximately 96 percent of public power's total energy efficiency savings. Ten of these utilities had annual net energy savings that exceeded 10,000 megawatt hours.
- Lighting programs continue to provide the largest share of energy efficiency savings to public power utilities, despite the fact that the assumed energy savings associated with these programs have been adjusted downward since the 2011 report was published.
- Applying efficiency targets that were adopted in 2010, California's POUs still perform well when actual results are compared to targets. Among the entire group, actual results exceeded 75 percent of savings targets for the reporting cycle, and approximately 96 percent when the two largest POUs are removed from the calculation.

CMUA looks forward to our continuing partnership with policymakers on energy efficiency issues and the aggressive promotion of the state's energy loading order. The next edition of this report will be submitted to the CEC on March 15, 2013.

Appendix A: Description of Utility Programs

ALAMEDA MUNICIPAL POWER

- Established in 1887, the oldest municipal electric utility in the west
- 34,200 customers, 88% are residential, 12% commercial
- Peak demand: 70.8 megawatts, occurs in the early evening in the winter
- Alameda Municipal Power (AMP) load does not have large demand spikes like most of California
- There is no residential air-conditioning and minimal industry
- Annual energy use is 400 gigawatt-hours
- 91 employees

Alameda Municipal Power Energy Efficiency Program Background

- Since 1991, AMP has spent more than $2.5 million on direct customer rebates.
- The energy efficiency programs have resulted in a demand reduction of more than 8.2 MW, 12% of peak demand, and energy use reduction of 28,000 MWh/yr, almost 7% 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.
- Pre and post installation inspections are done on 100% of the commercial rebates to ensure reliable savings.

Alameda Municipal Power Energy Efficiency Highlights FY 2011

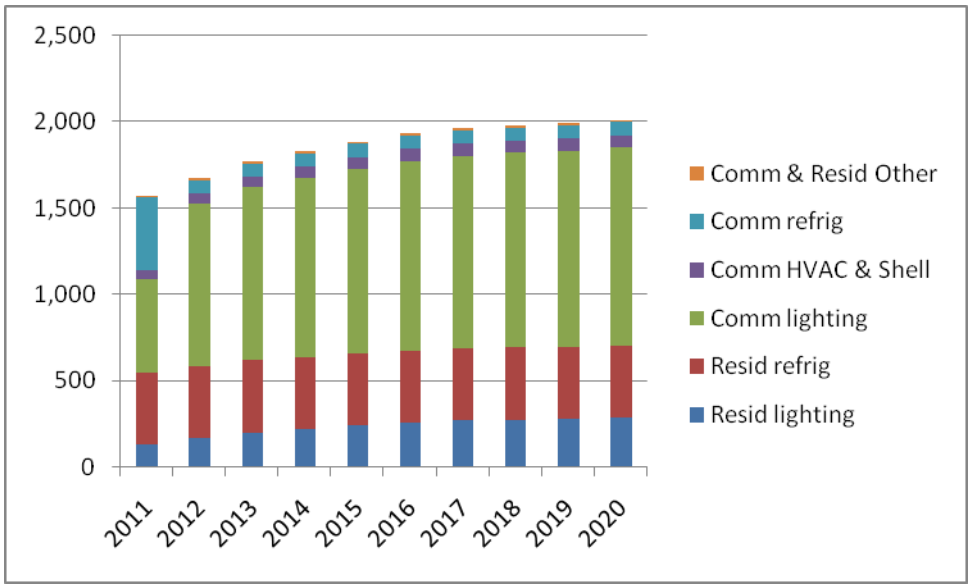
The net energy efficiency savings for FY 2011 was 1,433 MWh/yr, which is 91% of AB2021 target savings of 1,574 MWh/yr. AB 2021 requires that all POUs, in consultation with the CEC, develop an estimate of all potentially achievable, cost-effective energy-efficiency savings and establish annual targets for energy-efficiency savings and demand reductions over 10 years. The targets must be updated every 3 years.

Fiscal Year	Net MWh/yr savings	AB2021 Target Savings MWh/yr
2007	923	760
2008	2,136	760
2009	2,211	760
2010	1,326	760
2011	1,433	1,574

- The 1,433 MWh/yr savings achieved is equal to the annual energy use of 349 average Alameda residential customers. The resulting annual greenhouse gas emissions reduction from the FY 2011 energy-efficiency programs is 687 short tons of equivalent carbon dioxide (CO2e), which is equal to the annual emissions of 122 cars.

  The table shown at the end of this section lists the AB 2021 target for the 10-year period from 2011 to 2020. The AB2021 target was generated in 2010 from CalEERAM, a computer model, which is based upon an Excel spreadsheet that integrates energy efficiency impacts and costs, utility customer characteristics, utility load forecasts, utility avoided costs, and rate schedules.

Target of Savings by End Use – AB 2021



Commercial lighting is projected to provide more than half of the energy efficiency savings and residential refrigeration and commercial HVAC are expected to be consistent over the 10-year period.

The following table compares the projected AB 2021 energy efficiency savings for FY 2011 to the actual energy efficiency savings for FY 2011.

End Use	AB2021 Projected (MWh/yr)	Actual Savings (MWh/yr)
Comm & Resid Other	11	0
Comm Refrig	423	571
Comm HVAC	52	113
Comm Lighting	537	524
Resid Refrigeration	416	170
Resid Lighting	135	55
TOTAL	1,574	1,433

The annual actual and the projected energy efficiency will most likely vary for the following reasons.

1. Computer models, such as CalEERAM have limitations. For example, the data is dated and based upon studies completed seven to ten years ago. The building and appliance data is disaggregated to the general climate zone level and not specific to the City of Alameda. Also, the commercial sector types and associated energy-efficiency measures are too general for AMP. For example, AMP's largest customer load is the Maritime Administration, which consists of nine ships. There was limited ability to customize the energy-efficiency measures in the model.
2. Also, light emitting diode (LED) technology is minimally included in the CalEERAM model because the model is based upon earlier energy-efficiency measure databases and does not make projections on newly commercialized or emerging technologies. LED lighting is expected to continue to develop and diversify as reliability of this technology is expected to increase, and associated costs are expected to decrease. Staff anticipates that LED's may play a significant role in AMP's energy-efficiency savings over the next 10 years, particularly in the area of commercial lighting.
3. There are uncertainties regarding energy efficiency technologies and customer acceptance, such as the full marketing potential and diversity of applications of LED lighting in Alameda over the 10-year period.
4. The scope and timing of large customer projects such as the Maritime Administration ships, College of Alameda, and the shipyard Bay Ship, and Yacht are difficult to predict.
5. The time needed to start a new program is lengthy due to the contracting process and the program ramp up time.

- The total energy efficiency expenditures including overhead for FY 2011 was $653,816, of which 79% ($518,190) was from public benefits and 21% ($135,626) was from the power procurement budget.

- The Total Resource Cost for FY 2011 is 1.46 and exceeds the 1.00 threshold.

- The total utility cost for energy efficiency for FY 2011 was $0.06/kWh, which is comparable to AMP's assumed avoided power generation cost of $0.11/kWh, a cost that includes power generation, transmission, distribution, and environmental externalities. The total utility cost of $0.06/kWh is the cost of the energy efficiency measure over the lifetime of the measure.

- The cost to get energy efficiency savings is increasing from year to year as shown in the table below. Energy efficiency spending increased by 11% and the energy savings increased by 8%. According to a recent report from the Edison Foundation's Institute for Electric Efficiency we can expect this trend to continue.

Year	Rebates to Customers	Other Costs – Admin, EM&V, Marketing, etc.	Total Cost to Utility	Net Savings (MWh/yr)	Utility Cost per kWh
2010	$115,465	$463,603	$579,068	1,326	$0.05
2011	$224,026	$429,790	$653,816	1,433	$0.06

- As the low hanging fruit is picked, such as compact fluorescents and high performance T8 fluorescent lamps, energy efficiency savings will be harder to get and will likely cost more in the near future. Newly commercialized light emitting diode lighting is still expensive and the applications are limited. Although the utility cost per kWh will vary from year to year dependent upon the programs and measures, overall the cost for energy efficiency is expected to increase.

- Energy efficiency is a tough sell during these volatile economic conditions, and particularly difficult for small and medium businesses who typically lease their space. Small commercial customers are 81% of AMP's commercial customer base. The tenant pays the electric bill, but is not responsible for capital improvements to their space such as lighting and air-conditioning equipment.

  According to the recent RKS Commercial Customer Survey, over two-thirds of Alameda businesses (38%) report the economy is having a major impact on their willingness to invest in energy efficiency.

- An evaluation, measurement, and verification (EM&V) of the FY 2010 and 2011 commercial energy efficiency programs is being conducted by a third party, Energy & Resource Solutions (ERS). The objectives of the EM&V project are as follows.

  - Compliance with AB2021
  - Evaluate the impacts of the energy efficiency programs
  - Improve energy efficiency program design and implementation

  For FY 2010 the focus is on six commercial lighting retrofit projects. The projects are varied such as bi-level outdoor light emitting diode lighting, retail, biotech, storage facility, a bank, and a church.

  For FY 2011 the focus is on the commercial refrigeration program "Keep Your Cool" and several other commercial projects. The retrofit projects include lighting and high efficiency heat pumps for a hotel, a retail lighting retrofit, and a retail variable frequency drive project. Also included was a sizeable commercial new construction lighting project.

  The evaluation consisted of four primary sets of activities: conducting research, developing evaluation plans, collecting data, and estimating energy savings. A site measurement and verification plan was developed. ERS visited twenty-seven sites and collected data to verify the energy saving attributes of each retrofit project. The results were analyzed and energy savings estimates were developed using standard engineering principles and estimated evaluation methodologies.

  The realization rate – the ratio of verified savings to the reported savings - for the projects and programs evaluated is 89.7%. A rate of above 80% is considered good. AMP's realization rate of 89.7% is average for municipal utilities and above investor owned utilities.

- Through the Northern California Power Agency (NCPA), AMP has started the process to develop and implement a comprehensive web-based energy efficiency data management tool. The tool will be used by many NCPA members and other municipal utilities.

- Alameda is an island city and nearly 8% of the energy use is maritime. AMP's largest customer is the Maritime Administration, a Department of Transportation agency with nine ships on a long term lease. The nine cargo ships are on reserve and must be able to sail in 5 days anywhere in the world.

  In FY 2011 AMP provided MARAD, at no cost, a detailed energy audit of the ship Cape Orlando. The audit report included operations and maintenance measures as well as energy efficiency retrofit measures. The operations and maintenance measures have been completed. MARAD completed the Ship Manager's specifications for the energy efficiency retrofit measures and is implementing this project. Audits will be done on two more ships in 2012.

For FY2011 AMP provided the following energy efficiency and low income programs:

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. Trade-Ins for CFLs – Trade in events where customers bring in their incandescent lights and exchange those for compact fluorescents (CFL).
4. Monitor Lending Program – Borrow a monitor to measure the energy use of appliances.
5. Onsite Energy Audits – Residential audits at no cost.
6. Weatherization Cash Grant Program – Grant for up to 80% of the cost of weatherizing homes with electric heat.
7. On-line Energy Audit – On-line residential energy audit and associated tools such as an appliance calculator and energy library on AMP website.
8. LED/Advanced Technologies – Promote advanced technologies such as LED down lights.
9. Energy Upgrade California – AMP provided support and promotion to the statewide program, in the form of community workshops and various advertising.

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.

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. Keep Your Cool – A commercial refrigeration retrofit program.

4. Commercial On-Site audits – Free energy audits for lighting, HVAC, refrigeration, process systems, etc.
5. New Construction Design Assistance - Grants of up to $10,000 for energy efficient design work.
6. New Construction Rebates – Whole building and systems rebates for energy efficient new construction.
7. LED/Advanced Technology Program – Increased rebates to promote advanced technologies such as LED lighting.

Alameda Municipal Power Investment in Renewables

Approximately 64% of AMP's electricity comes from California Energy Commission 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.

In FY 2012, a new 2 MW landfill-gas-to-energy projects will come online.

Projects to extend the life and improve the efficiency of the Geysers Geothermal field are continuing. Examples of these improvements are wells to inject water to increase steam output and the addition more efficient turbines.

Status of Federal Economic Stimulus Funds FY 2011

Energy Efficiency Conservation Block Grant Program –

1. City Facilities – Energy audits for all City facilities were completed in 2011. The total potential for savings is 835,882 kWh/yr. Some measures are more cost effective than others. A team has been created to develop an Energy Plan to implement all cost effective measures, provide retrocomissioning, and establish an ongoing monitoring process to ensure continuous energy improvement.
2. City Hall Occupancy Sensors – Installed lighting occupancy sensors throughout City Hall.
3. Alameda Unified School District Facilities – Energy audits for all school district facilities were completed in 2011. The total potential for savings is 1,631,394 kWh/yr. Some measures are more cost effective than others. AMP has been working with the school district to implement the measures.

State Energy Program

AMP partnered in these State programs to enhance and supplement AMP energy efficiency program efforts.

1. Energy Upgrade California in Alameda County – A countywide program, using a whole building approach, for improving the immediate and long-term environmental performance of existing buildings. 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.
2. Energy Smart Jobs Program – A statewide program that will develop new jobs and employ Californians by delivering commercial refrigeration energy efficiency measures and associated retrofit measures.

ALAMEDA MUNCIPAL POWER

Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Alameda		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	2,352	66	9	65,213	54,689	299,616	160	$24,548	$7,028	$31,576
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	553	36	36	270,223	170,195	1,063,332	577	$36,255	$27,759	$64,014
HVAC	Res Shell										
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	3	36	18	137,218	112,716	1,764,310	1,069	$10,631	$85,747	$96,378
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	5	104	52	580,454	524,797	6,049,124	3,352	$61,636	$184,913	$246,548
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	1	252	126	671,446	570,729	3,995,104	2,106	$90,956	$124,343	$215,299
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		2,914	494	241	1,724,554	1,433,126	13,171,486	7,264	$224,026	$429,790	$653,816
T&D	T&D										
Total		2,914	494	241	1,724,554	1,433,126	13,171,486	7,264	$224,026	$429,790	$653,816

EE Program Portfolio TRC Test	**1.46**

Excluding T&D

Alameda Municipal Power – AB 2021 Energy Efficiency Targets 2011 to 2020

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Customer Load (MWh/yr) Forecast January 2010	387,400	389,600	393,600	398,500	401,500	403,200	405,000	406,900	409,100	411,800
Energy Efficiency as a % of Load Forecast	0.41	0.43	0.45	0.46	0.47	0.48	0.485	0.487	0.488	0.489
MWh/yr Target	1,574	1,675	1,771	1,833	1,887	1,935	1,964	1,982	1,996	2,014
MWh Cumulative EE Savings	1,574	3,249	5,020	6,854	8,741	10,676	12,640	14,622	16,618	18,632

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: 75% Commercial/Industrial, 24% residential and 1% miscellaneous
- Peak demand: 580 megawatts established September 2010
- Retail annual energy used: 2,371 gigawatt-hours.
- 377 full-time employees and 67 part-time employees

Overview of Public Benefit Programs

From January 1998 through June 2011, public benefits expenditures totaled $92.6 million as follows: Energy Efficiency 61%; RD&D 13%; Renewable Energy Resources 19%; and Income-Qualified 7%. Energy Efficiency programs includes every residential customer, including low income. Residential customers who participate in Energy Efficiency Programs are not identified by income level. In actuality, there are far more income-qualified customers participating in the residential programs than the 7% reflected above. Conservation of electricity and water is important in helping Anaheim Public Utilities defer the future purchase of more costly resources. In the short-term, conservation is vital in helping maintain stable rates.

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 (meet SB-1) goals
- Promote Green Buildings
- Develop effective communications and marketing plans

Current Commercial Customer Programs

Total annual program cost: $1,173,733

Resulting in: 935 kilowatt demand reduction and 6,571,598 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.
- **Economic Development/Business Retention Rate -** Provides qualifying businesses with rate discounts with an efficiency measures installation component.
- **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 50 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 exceed Title 24.
- **Commercial Water Equipment Rebates -**Businesses and companies are eligible for rebates by installing or retrofitting with qualifying water-saving devices through the "Save a Buck" Program
- **Toilet Rebate Programs -** Rebates for ultra-low-flush and high efficiency toilets.

Current Residential Customer Programs

Total Annual Program Costs: $1,902,406

Resulting in: 1,579 kilowatt demand reduction and 3,349,729 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.

- **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.
- **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 $1,365,334

Resulting in: 2,048 kilowatt demand reduction and 511,291 kWh saved.

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

Anaheim Public Utility (APU) EM&V Efforts

- APU 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 2008-2009 (July 1 – June 30). Projects reviewed represent a random sampling from the full spectrum of APU's energy efficiency program portfolio. The independent third party's EM&V analysis has concluded however the report is still in progress.

  APU's verification study will be submitted to the CEC for its review when the report has been finalized and accepted by APU. A preliminary report has been submitted by the contractor and comments returned. The findings will be made available for review as soon as the revisions are completed.

Public Facilities

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

Proposed Energy Efficiency Programs and Services 2011-12

- 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

Low Income

- Expand the low-income programs to respond to our customer's needs
- 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 one large scale thermal energy storage project.

American Reinvestment and Recovery Act (ARRA) Stimulus Funds

Energy Efficiency Conservation Block Grant Program – Funds that were expended and corresponding net energy efficiency savings and demand reductions committed in FY 10/11 are depicted in the table below.

Advantage Services	Program Costs	Actual Net kW Saved- E3 Model	Actual Net kWh Saved- E3 Model	Participants	Rebates/Misc. Recov. Chrgs. Provided
Residential Services and Community Outreach					
Weatherization Program-Non Stimulus	**$143,376**	**32**	**105,243**	**187**	**$0**
Weatherization Program	**$143,376**	**32**	**105,243**	**187**	**$0**
Weatherization Program- Consol STIMULUS	$30,325	7	22,260	39	$0
Weatherization Program- Consol MATCHING	$0	0	0	0	$0
Weatherization Program-Total	**$173,701**	**39**	**127,503**	**226**	**$0**
Residential Services and Community Outreach-Stimulus Subtotal	$30,325	$7	$22,260	39	$0
Commercial/Industrial Services					
Lighting Incentives-Non Stimulus	**$306,663**	**303**	**3,343,956**	**18**	**$211,458**
Lighting Incentives	**$305,477**	**302**	**3,331,023**	**17**	**$305,477**
Lighting Incentives- STIMULUS	$22,214	22	242,229	1	$22,214
Lighting Incentives- MATCHING	$1,186	1	12,933	0	-$94,019
Lighting Incentives-Total	**$328,877**	**325**	**3,586,185**	**18**	**$233,672**
Small/Medium Business Program-Non Stimulus	**$374,065**	**277.5**	**730,619.8**	**216**	**$211,458**
Small/Medium Business Program	**$343,698**	**254.9**	**671,306.6**	**199**	**$0**
Small/Medium Business Program- STIMULUS	$30,367	22.5	59,313.2	18	$89,487
Small/Medium Business Program- MATCHING	$30,367	22.5	59,313.2	18	$0
Small/Medium Business Program-Total	**$404,433**	**300.0**	**789,933.0**	**234**	**$89,487**
Commercial/Industrial Services-Stimulus Subtotal	$52,581	$44	$301,542	19	$111,701
Total Stimulus	$82,906	51.3	323,802.2	58	$111,701
Total Matching	$31,553	23.7	72,245.7	17.6	-$94,019
Total Non Stimulus	**$824,104**	**613**	**4,179,819**	**421**	**$422,916**
Total	**$907,011**	**664.0**	**4,503,621.0**	**478**	**$323,159**

Total of Non Stimulus (Matching Funds + Regular PBC Funds)	**Green Text**
Regular PBC Funds	**Bold Black Text**
Stimulus Funds	Black Text
Matching Funds	Black Text
Total of Simulus Funds + Matching Funds + Regular PBC Funds	**Red Text**

Programs funded with stimulus funds or other funding sources.

There are some programs that produce kWh savings and kW demand reductions with little or no expenditure of money.

ANAHEIM PUBLIC UTILITIES

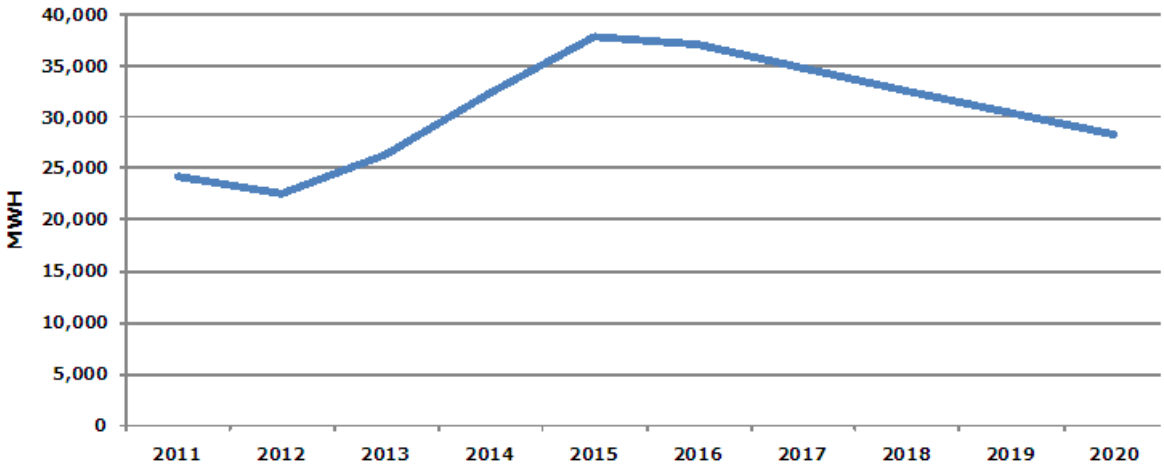
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Anaheim		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling	2	15	15	415,706	332,565	6,651,296	4,243	$912		$912
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	2	189	26	213,474	181,033	905,165	513	$165,218		$165,218
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	4	334	327	1,670,558	1,337,516	9,170,340	5,407	$591,572		$591,572
HVAC	Res Shell	1	36	36	8,232	6,586	118,541	71	$29,376		$29,376
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive	5	789	784	2,593,426	2,209,022	19,231,853	11,899	$684,341		$684,341
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	3	2,245	2,206	2,069,489	1,757,849	27,901,614	16,962	$1,440,334		$1,440,334
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	4	622	523	5,810,238	4,796,874	72,564,189	42,384	$307,456		$307,456
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration										
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive	4	383	337	2,761,549	2,481,239	34,563,775	19,967	$110,046		$110,046
Other	Other										
SubTotal		25	4,612	4,254	15,542,672	13,102,684	171,106,773	101,445	$3,329,255		$3,329,255
T&D	T&D										
Total		25	4,612	4,254	15,542,672	13,102,684	171,106,773	101,445	$3,329,255		$3,329,255

EE Program Portfolio TRC Test	4.35

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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 65 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 266,250 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 $8,800,000 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: $372,100; resulting in approximately 636 kilowatts of demand reduction and over 20,218,700 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.
- Small Business Audit/Retrofit Program: Provide free utility audit, free CFL retrofit, free packaged A/C tune-ups, the first $1,500 free lighting retrofit and recommendations for further energy saving measures with a corresponding 50% rebate up to a maximum rebate of $10,000 per customer account.

Current Residential Customer Programs: (Annual program cost: $123,350; resulting in approximately 220 kilowatts of demand reduction and over 4,277,700 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: $48,350; resulting in approximately 3.0 kilowatts of demand reduction and 548,900 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 2009-2010)

- 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 additional 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.

EM&V - Azusa Light and Water has contracted with an independent third party to evaluate randomly selected programs and rebates as part of its designed measurement and verification plan. For fiscal year 08-09, projected energy savings are being verified for the Business Energy Partnership Rebate Program, the Small Business Utility Audit and Retrofit Program and the Residential Rebate Program. These programs were chosen because the majority of the funds are expended in these three programs and they provide for the majority of the corresponding savings.

ARRA Funding – Azusa Light and Water participated in the EECBG Stimulus Funding Program through the installation of new higher efficiency HVAC equipment on the Azusa Police Department at a total estimated cost of $191,600, which equates to the entire prescribed ARRA funding for the City of Azusa.

AZUSA LIGHT & WATER

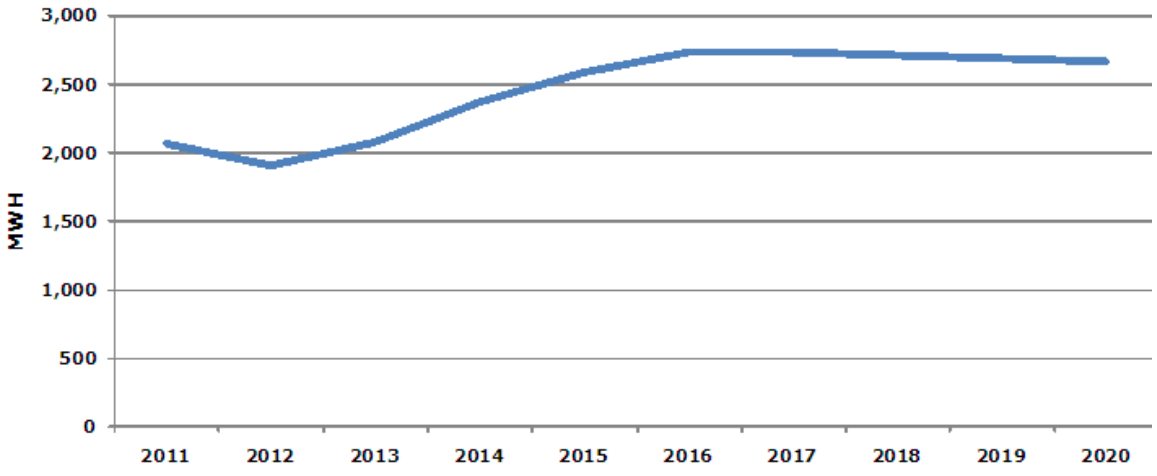
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Azusa		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers	1			155	155	2,015	1	$678	$38	$715
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	7	2		575	443	2,213	1	$1,704	$26	$1,730
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	94	2	2	13,413	10,600	157,037	90	$10,782	$2,423	$13,205
HVAC	Res Shell	1	2	2	1,170	1,170	23,400	14	$9,050	$433	$9,483
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	6	4	4	7,327	7,327	118,482	72	$29,146	$2,212	$31,357
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	15	161	161	407,545	407,545	4,513,117	2,741	$78,955	$83,314	$162,269
Process	Non-Res Motors	1	11	11	32,297	32,297	484,455	294	$10,000	$9,061	$19,061
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	2	1	1	5,273	5,273	63,276	38	$5,863	$1,177	$7,040
HVAC	Non-Res Shell	3	7	7	14,268	14,268	214,020	130	$20,850	$4,003	$24,853
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		130	189	187	482,023	479,077	5,578,014	3,383	$167,027	$102,687	$269,714
T&D	T&D										
Total		130	189	187	482,023	479,077	5,578,014	3,383	$167,027	$102,687	$269,714

EE Program Portfolio TRC Test	5.23

Excluding T&D

Energy Savings Targets 2011-2020



	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%

CITY OF BANNING ELECTRIC UTILITY

- Established in 1922.
- 26 employees.
- Of the 11,812 customers, 90 % are residential.
- Average demand during FY10/11 was 16.0 MW, down 2.4% from the period prior.
- Peak demand during FY 10/11 was 45.0 MW, up 7.7% from the period prior. Peak demand is primarily due to air conditioning load during the summer.
- Retail energy sales in FY 10/11 were 130,214,132 kWh, down 3.9% from the period prior. Retail sales are broken down as 50 percent residential and 50 percent commercial/industrial.
- 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 10/11, Banning spent $255,859 on energy efficiency programs, which provided 147 kW demand and 141,124 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.
- 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: (2011-12)

- 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.

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.
- The City has contracted to participate in a renewable energy project in Arizona with a 2 MW capacity interest. The project is expected to come on line in 2015. The expected output from the power plant would increase Banning's renewable energy supply from currently 20% renewable to an estimated 26.5% renewable.
- Banning has met its California SB1 requirements by providing $2.4 million in rebates for the installation of solar photovoltaic systems in its service territory. The rebates have helped install approximately 0.75MW of customer-owned solar photovoltaic capacity in the city.

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 Electric Utility has hired third-party firms, such as Lincus, Inc., to perform EM&V studies in previous years. The City will continue with its EM&V programs and practices.

CITY OF BANNING ELECTRIC UTILITY

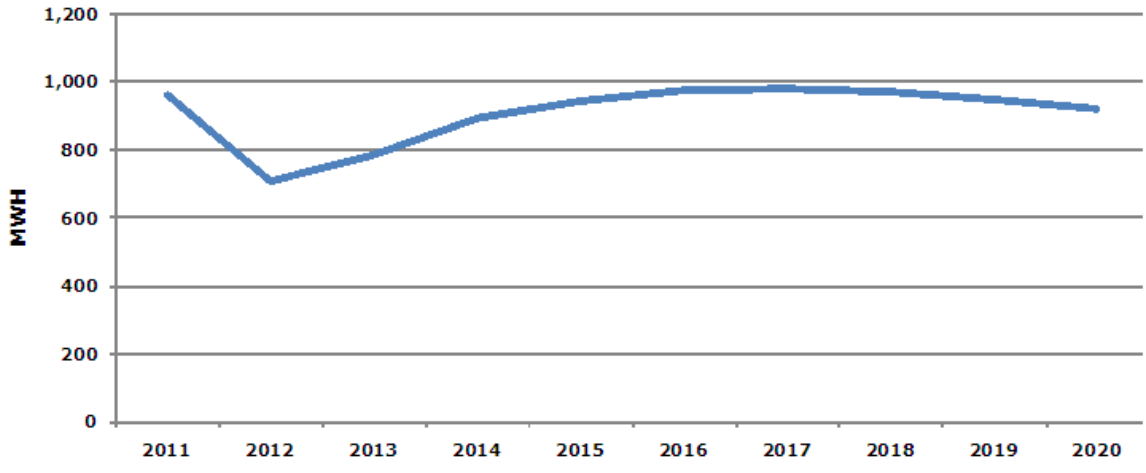
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Banning		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	65	13	13	5,884	5,002	60,018	36	$6,500	$2,829	$9,329
HVAC	Res Cooling	153	25	104	72,407	57,685	1,015,070	642	$39,653	$74,612	$114,265
Appliances	Res Dishwashers	46	4	4	1,601	1,281	14,090	8	$3,450	$615	$4,065
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	2			356	271	2,706	2	$100	$106	$206
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	188	7	7	54,406	39,076	476,735	269	$30,834	$20,761	$51,595
HVAC	Res Shell	104	18	18	68,744	37,809	756,184	499	$10,400	$66,001	$76,401
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		558	68	147	203,398	141,124	2,324,803	1,456	$90,937	$164,922	$255,859
T&D	T&D										
Total		558	68	147	203,398	141,124	2,324,803	1,456	$90,937	$164,922	$255,859

EE Program Portfolio TRC Test	0.67

Excluding T&D

Energy Savings Targets 2011-2020



	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%

CITY OF BIGGS

- Biggs has 612 residential, 37 commercial, 12 municipal and 3 industrial customers.
- The City of Biggs projects a growth rate of 1% per year.
- Peak demand – in June 2011 was 4.0 MW
- Annual energy use: 16.9 gWh.
- Power content: Geothermal 11.5%, small hydro 0.6%, large hydro 40.6%, Unspecified 47.3%

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 DSM rebate expenditures of 96%.

- The recession of the last four years adversely affected our Residential DSM Program, resulting in a drop in participation of 87%. Residential DSM measures represent 100% of our annual kWh savings for this reporting period. In 2010, an extensive industrial lighting retrofit project was approved for our largest industrial customer, but customer failed to move forward with the installation, so allocated rebate funds were never disbursed and no energy savings were realized.

- Third-party Evaluation, Measurement and Verification studies performed at the close of fiscal years 2008, 2009 & 2010 confirmed an average of 97% of energy savings reported by the City of Biggs in our annual SB1037 report. Verification of demand savings averaged 96%. The City of Biggs has moved to a three year EM & V reporting period, with the next report due at the end of fiscal year 2013.

- In August of 2009, Biggs indicated their intent to participate in the Energy Efficiency and Conservation Block Grant Program. A joint Application for Grant Funding was executed by

Northern California Power Agency on behalf of Biggs, Ukiah & Healdsburg. The EECBG LED Streetlight Project was completed in January 2012.

In order to meet our demand-side management goals, Biggs is aggressively promoting commercial DSM Programs with the two largest energy consumers in town. Biggs will continue to work with SunWest Milling to move forward on a comprehensive lighting retrofit program for its warehouses and milling facilities and work with our school district to install additional energy efficiency measures.

Current Demand-side Management Programs and Services

- ***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.

- ***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.

- ***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.

- ***Residential Energy Audits:*** The City of Biggs offers free residential energy audits, including insulation assessment, HVAC assessment, weatherization assessment and a review of energy usage. Specific recommendations to improve energy efficiency and reduce energy use are provided.

CITY OF BIGGS

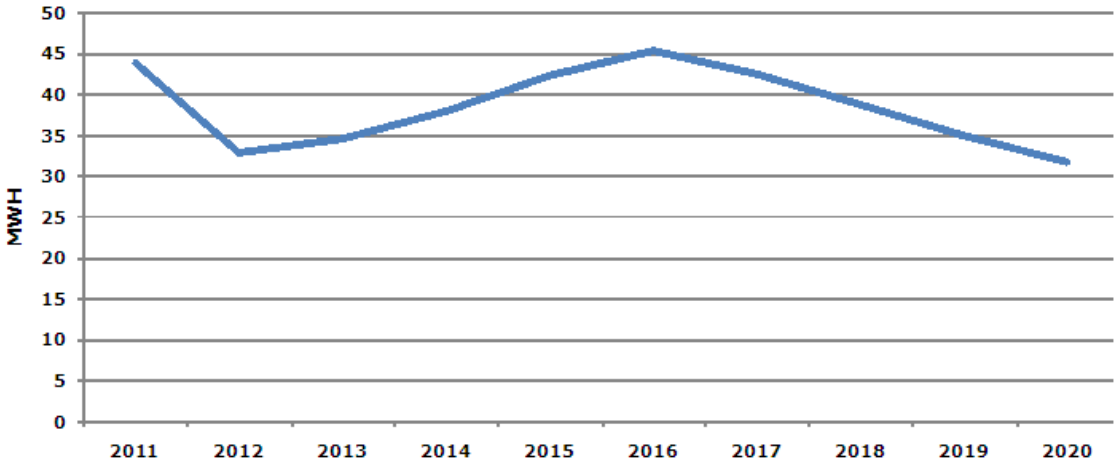
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Biggs		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	5	1		990	891	4,455	2	$25	$6	$31
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration										
HVAC	Res Shell	2			25	14	278		$230	$1	$231
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	10	176	176	100,000	80,000	400,000	211		$494	$494
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		17	177	176	101,015	80,905	404,733	213	$255	$500	$755
T&D	T&D										
Total		17	177	176	101,015	80,905	404,733	213	$255	$500	$755

EE Program Portfolio TRC Test	**3.72**

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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 321.8 megawatts on September 27, 2010
- Annual energy use is approximately 1,120 gigawatt-hours
- Burbank Water and Power employs about 330 employees, including eight in the Marketing and Conservation group

Goals

During FY 2010-11, BWP spent $2.9 million, excluding overhead costs, in Public Benefits Charge (PBC) funds on energy efficiency programs, and an additional $170,000 on water conservation programs. These programs resulted in net annual energy savings of more than 12,244 MWh and net peak demand savings of 4.3 megawatts (MW). BWP's FY 2010-11 goals were to reduce energy usage by one percent, with specific goals of 11,187 MWh and 3.2 MW. Against these goals, BWP attained 110 percent of the energy goal and 133 percent of the peak demand goal.

BWP's Fiscal Year 2011-12 Public Benefits budget has $3.1 million, excluding overhead costs, budgeted for energy efficiency programs. BWP operates its portfolio with decision flexibility and management dedication to best allow attainment of our one percent savings goal. This remains our internal target, although the Navigant (formerly Summit Blue) efficiency target setting process derived an average annual 0.8 percent savings of sales forecast target for 2011-2020. Despite BWP's goal achievement in FY 10-11, energy savings are highly dependent on market conditions, and are not easily replicated from year to year. The Navigant target may be more reasonable, given the ongoing economic woes that have affected many households and businesses. However, BWP continues to operate and evaluate its full suite of programs with the expectation that it will achieve the one percent goal annually.

BWP annually provides to the Burbank City Council a written report and presentation on its program results and efficiency targets. The most recent presentation was in May 2011. The Council had a very positive reaction to BWP's portfolio of efficiency programs for residents and businesses.
BWP anticipates achieving these goals during the current fiscal year with the introduction of the Home Energy Reports program and modifications to the Green Home House Call program. Additionally, BWP is still working on the implementation of a demand and energy reduction residential program on a pilot basis with a local company, TerraTrim.

New and Modified Programs

- Home Energy Reports: BWP implemented its Home Energy Reports program, utilizing Opower, in April 2011. The program combines behavioral science techniques and experimental design to produce cost-effective energy savings. In the first year of this two year program, each Burbank household in a 25,000 household "test" group receives a bimonthly home energy report that details its energy consumption compared to a peer group in the service territory, and provides recommendations of efficiency measures. The comparison with the peer group spurs the customer to reduce his/her consumption, either through behavioral changes or the installation of these measures.

  In order to produce a robust savings estimate, Opower compares the consumption from the test group with a 20,000 household "control" group, containing households that did not receive a home energy report. Studies of similar programs have shown energy savings between one and three percent, with an annual cost of about $20, per participating customer.

  In year two, the test and control groups are flipped, allowing each BWP customer to receive and react to a home energy report over the program lifetime. Since the program began at the end of FY 2010-11, savings will be reported as part of FY 2011-12 in order to produce an annualized estimate.

- Green Home House Call: In November 2009, BWP implemented a whole house-type efficiency program, Green Home House Call. BWP selected KEMA as the implementation contractor, and the program has several components, all provided at no charge to participants. These include an in-home audit with energy and water education, free CFL installations, and free installation of attic insulation and duct testing and sealing for homes with central air conditioning, as well as water conservation measures.

  In FY 2010-11, BWP installed measures in more than 1,100 households, with an average savings of more than 660 kWh per household. In addition, BWP began working with the Southern California Gas Company to provide even more extensive services for income-qualified households in Burbank. In FY 2011-12, BWP added central air conditioning tune-ups to the GHHC program, as a means to simplify and increase participation.

- TerraTrim: In December 2010, BWP received a Department of Energy grant to implement a unique residential energy efficiency and demand response program with TerraTrim. The $500,000 grant will allow BWP to install a custom device at up to 700 households with in-ground pools over two years. As designed, the TerraTrim device would track a household's energy use on a real time circuit basis, and the company's custom software would reveal patterns of energy use. TerraTrim would then provide recommendations to reduce energy use and shift energy to off-peak hours, in the form of a monthly report, texts, or emails. BWP selected this program in order for it to run concurrently with the Home Energy Reports program; unfortunately, TerraTrim has experienced significant delays related to the commercialization of the device, and the pilot program has yet to be implemented.

Current Customer Programs

Below are descriptions and updates of BWP's existing efficiency programs:

Residential Sector

- Home Rewards Rebates: For residential customers, energy efficient products have higher upfront costs than standard efficiency products (even if the operating costs are lower). The Home Rewards Rebate program seeks to minimize the incremental cost by offering rebates to residents who purchase and install ENERGY STAR appliances and other high efficiency products. The rebate amounts are typically in the range of 25 to 75 percent of the incremental cost. Higher rebate amounts are available for customers if the product was purchased in Burbank. The most common measures are refrigerators, clothes washers, dishwashers, central and room air conditioners, as well as building envelope measures such as insulation and low-e windows. In FY 2010-11, BWP provided 3,300 rebates to more than 2,300 customers.

- Refrigerator Round-Up: The Refrigerator Round-Up Program targets residential customers' second refrigerators, typically found in garages. These second refrigerators are more a convenience than a necessity, and because they have been operating for 15 or more years, are inefficient and could be costing the customer up to $150 annually on their energy bill. BWP arranges with Appliance Recycling Centers of America (ARCA) to have the working refrigerator picked up and environmentally recycled, and provides the customer with a $100 bill credit. In FY 2010-11, BWP retired about 270 refrigerators.

- Refrigerator Exchange: This is similar to the Round-Up program, except that it targets low income customers' primary refrigerators. The old, inefficient refrigerator is picked up and recycled by ARCA, and replaced with a new ENERGY STAR refrigerator. The only participation requirements are that the customer meets a certain income guideline and that the refrigerator is at least ten years old. In FY 2010-11, BWP replaced about 220 refrigerators.

- Compact Fluorescent Light (CFL) Distributions: CFLs use about one-third to one-fourth of the energy used by traditional incandescent light bulbs, and have a lifetime about six times longer. However, customers often object to CFLs' higher upfront costs and different light quality. In order to overcome these barriers, BWP provides free, high-quality CFLs to attendees its events, as well as to participants in the Refrigerator Round-Up and Refrigerator Exchange programs. As incandescent lamps are phased out and CFLs become the efficiency standard, BWP plans to initiate pilot programs with light-emitting diode (LED) lamps and provide residential customers with samples of this newer, more efficient lighting technology. In FY 2010-11, BWP provided customers with more than 6,400 free CFLs.

- Made in the Shade: The purpose of the program is to provide shading for residential and commercial buildings, and thereby reduce the need for air conditioning. Through this program, residential customers can receive up to three, and commercial customers up to 20 shade trees, selected by the customers and delivered to them for free. The installation of the trees is done at the customer's expense, though the installation is verified by BWP's contracted arborist. In FY 2010-11, BWP provided about 340 trees to its customers.

- Home Energy Analyzer: Since 2003, BWP has offered residential customers a free on-line energy audit. The audit provides estimates of energy consumption by end use and recommendations to reduce usage. About 200 customers annually conduct the audit. In order to reduce program costs and increase participation, BWP discontinued this program in October 2011 and plans to make available a more sophisticated home energy tool, developed by the Lawrence Berkeley National Laboratory (LBNL), in January 2012.

- LivingWise: LivingWise is an educational and residential savings program for Burbank Unified School District 6th grade students. LivingWise combines classroom learning, a home audit, and minor retrofits completed by students and parents. Annually, about 1,200 students receive a LivingWise kit containing energy and water saving devices in their home. The program contractor, Resource Action Programs, compiles the savings estimates based on reporting from the students.

Commercial Sector

- Energy Solutions: BWP offers custom and prescriptive rebates to businesses who replace existing equipment with high efficiency equipment. A business customer can receive incentives based on either five cents per kWh saved or 25 percent of the project cost, up to an annual maximum of $100,000. In addition, customers can receive specific incentives for efficient HVAC systems, motors, and other equipment. Any non-residential customer is eligible to participate, and the program is typically BWP's largest in terms of energy savings. In FY 2010-11, the program had 23 unique participants who implemented 81 projects.

- Business Bucks: The majority of Burbank's 6,000 businesses are small companies whose owners and managers often lack both the time and expertise to better manage their utility usage and costs. The Business Bucks program was specifically designed for this hard-to-reach market, and provides free audits of the facility's energy use, and up to $2,000 in equipment and installation costs. The most common measure types include lighting, HVAC (cooling), and refrigeration. In FY 2010-11, BWP provided about 375 small businesses with an average of $1,300 in free energy efficiency upgrades.

- Air Conditioning Tune-Ups: Air conditioning is a necessity in the warm Southern California climate, and makes up about 10 to 15 percent of BWP's total residential and commercial load. However, at least two-thirds of central air conditioner systems provide cooling at less than their rated efficiency, even among new equipment. This is due primarily to incorrect refrigerant charge, low evaporative coil airflow, and leaky duct systems. This program offers incentives to contractors who become certified program technicians. The certified technicians utilize special software that correctly identifies an air conditioning unit's efficiency, and are rewarded with cash incentives when the unit operates at the highest efficiency possible. In FY 2010-11, the program served 457 residential and 145 commercial customers. In FY 2011-12, the program will serve only commercial customers, as residential customers will receive tune-up services through the Green Home House Call program. This program modification does not result in any decrease in portfolio energy savings.

- Ice Bears: BWP operates a demonstration program where Ice Energy has installed 30 of its Ice Bear units at city-owned buildings. The Ice Bear is a peak-shifting thermal energy storage unit that works with air conditioners. The unit is simply a tank containing water that is frozen during off-peak hours; the ice is then used to provide cooling during peak hours. By connecting to an Ice Bear unit, the air conditioning unit's compressor can be turned off for several hours without any loss of cooling to the building. Each Ice Bear unit shifts about seven kW of on-peak energy use to off-peak hours, and also provides some energy savings. In FY 2010-11, the number of installed units reached 30, providing about 210 kW of peak demand capacity reduction. For FYs 2011-12 and 2012-13, BWP is developing a two year implementation plan, where Ice Bear units with a total capacity of up to 2 MW will be installed at business customer locations.

- Leadership in Energy and Environmental Design (LEED) Certification Incentives: BWP provides this incentive program to encourage the construction of environmentally preferred buildings in Burbank.

- Energy Saved through Water Conservation Efforts: BWP provides water services to 26,000 customers, and has set an annual goal to reduce water consumption by 1%, or about 110 million gallons. In FY 2010-11, BWP estimated savings from its water conservation programs of 223 million gallons. BWP relies on local groundwater for nearly half of its water resources needs, and supplies electricity to its municipal pumping system. Because reduced water demand leads to less electricity consumed, then BWP can save energy through its water conservation program. This concept is known as the embedded energy of water. BWP estimates net energy savings of 0.36 kWh for every hundred cubic feet of water (748 gallons) conserved. This results in about 107,000 kWh savings indirectly flowing from our water conservation programs.

ARRA and Other Stimulus Funded Programs

In addition to PBC funds, BWP utilizes grant funding for a variety of operational and energy efficiency projects. Below are some relevant projects:

- Congressionally Directed Smart Grid Grant: As detailed above, BWP was awarded a $500,000 Department of Energy grant for the TerraTrim program.

- Smart Grid Project Grant: In December 2009, BWP received a four year, $20 million grant for a city-wide Smart Grid initiative. The program includes deployment of a comprehensive, secure integration of multiple, intelligent Smart Grid infrastructure systems and control processes designed to accelerate the modernization and address the challenges of the local grid. The project addresses all aspects of utility operations, with a portion of the grant set aside for Customer Smart Choice Programs. These retail programs will likely begin in FY 2011-12.

- Energy Efficiency Community Block Grant (EECBG): Burbank Water and Power was awarded an ARRA EECBG of $1.1 million in support of a renewable energy project. The project design specified a 263 kW solar photovoltaic carport on our campus, bordering a heavily used thoroughfare. The purpose of this project is 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 BWP's LEED Platinum application for campus-wide improvements. The solar carport was completed in August 2011.

Evaluation, Measurement, and Verification (EM&V) Efforts and Plan

Along with most other POUs in California, BWP uses the E3 Reporting Tool to ensure accurate reporting of energy and peak demand savings and cost-effectiveness. In order to verify these savings, and meet the requirements of AB 2021, BWP also builds evaluation, measurement, and verification elements into every program, and facilitates independent third-party studies.

In 2010, Lincus Energy completed an EM&V study of BWP's FY 2008-09 program savings. The Lincus study focused on four energy efficiency programs (Energy Solutions, Home Rewards Rebates, Refrigerator Round-Up, and Made in the Shade) that accounted for 82 percent of gross, unverified energy savings. Lincus reported realization rates of 97 percent for energy savings and 102 percent for peak demand savings, signifying that the energy savings reported in the E3 Tool were nearly identical to the savings reported at customer sites. The Lincus study is available on the NCPA website, and BWP will continue to make EM&V reports available to the CEC and other parties.

BWP plans to continue third-party EM&V work, focusing on programs that produce the greatest energy savings. BWP's plan is to evaluate at least one significant program annually.

In addition, below are elements of BWP's internal EM&V process.

- Home Rewards Rebates – Each application requires a receipt of the purchased products. BWP's Program Managers verify the products against the ENERGY STAR website to ensure that the specifications are met.
- Refrigerator Round-Up and Refrigerator Exchange – For both programs, BWP relies on the implementation contractor, ARCA, to verify information related to the refrigerator being replaced.
- Made in the Shade – The program arborist verifies that the shade trees have been planted.
- Energy Solutions – All rebate installations are verified by BWP's Key Account Representatives, who are trained in electrical engineering.
- Business Bucks – The program contractor, RHA, conducts a pre-installation audit and verifies all installed measures.

- Air Conditioning Tune-Ups – The program uses Proctor Engineering Group's "CheckMe" software. Incentives are paid to air conditioning contractors only for items that are verified by Proctor.

Summary

BWP remains committed to providing our residential and business customers with safe, reliable and affordable services. Concurrently, BWP is making significant efforts to reduce consumption of both electricity and water in line with the state's environmental goals.

BURBANK WATER & POWER (BWP)

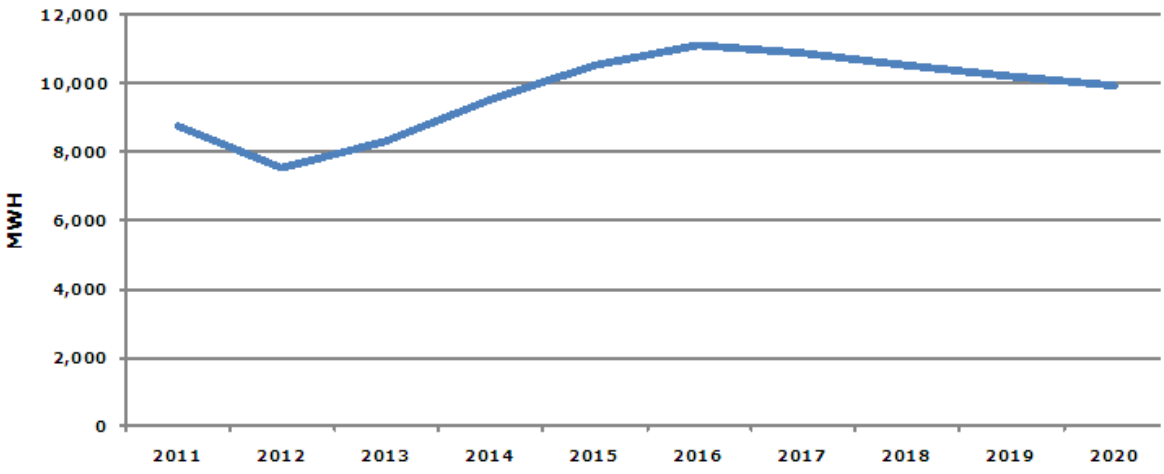
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Burbank		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	794	107	107	49,228	41,844	502,126	299	$77,924	$1,198	$79,121
HVAC	Res Cooling	2,836	428	427	446,937	371,503	4,947,031	3,143	$388,700	$39,585	$428,285
Appliances	Res Dishwashers	655	55	55	20,109	16,087	176,955	105	$48,075	$396	$48,471
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	12,222	485	67	460,265	387,997	2,036,269	1,155	$54,909	$7,798	$62,707
Pool Pump	Res Pool Pump	14	1	1	4,494	3,595	35,952	20	$1,100	$79	$1,179
Refrigeration	Res Refrigeration	1,387	79	79	479,442	344,142	2,726,071	1,539	$282,766	$51,291	$334,057
HVAC	Res Shell	2,314	255	255	839,731	669,179	7,302,166	4,668	$636,294	$101,045	$737,339
Water Heating	Res Water Heating	2,368			24,623	11,360	105,804	67	$22,496	$405	$22,901
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	90	2,325	2,325	4,205,343	3,811,788	50,894,311	32,555	$696,457	$165,786	$862,243
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	2	727	727	3,398,167	3,090,509	30,940,507	18,325	$397,745	$75,339	$473,084
Process	Non-Res Motors	1	191	191	2,039,430	1,835,487	22,025,842	12,275	$76,888	$45,862	$122,750
Process	Non-Res Pumps	1			125,735	106,875	641,250	357	$166,195	$1,224	$167,418
Refrigeration	Non-Res Refrigeration	150	10	10	200,188	170,160	680,639	379	$18,713	$41,215	$59,928
HVAC	Non-Res Shell	1	11	11	26,239	23,615	354,227	215	$1,742	$1,019	$2,762
Process	Non-Res Process										
Comprehensive	Non-Res Comprehensive	3	6	6	1,504,942	1,360,206	19,418,327	11,490	$220,829	$48,438	$269,267
Other	Other										
SubTotal		22,838	4,681	4,262	13,824,872	12,244,346	142,787,475	86,594	$3,090,831	$580,679	$3,671,510
T&D	T&D										
Total		22,838	4,681	4,262	13,824,872	12,244,346	142,787,475	86,594	$3,090,831	$580,679	$3,671,510

EE Program Portfolio TRC Test	1.26

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

COLTON ELECTRIC UTILITY (CEU)

COLTON ELECTRIC UTILITY (CEU)

- Colton Electric Utility was established in 1895 by the City of Colton
- CEU has three substations and owns a 43-megawatt gas combustion turbine generator
- CEU has 18,688 electric meters, with Residential making up 28 percent, Commercial 27 percent, Industrial 42 percent and 3 percent Municipal of total sales
- Peak demand for 2010 was 85.856 megawatts on August 26 at 2:00 p.m.
- In 2010, Colton Electric Utility sold 356,451 Megawatt-hours
- CEU has 43 employees

CEU Energy Efficiency Program Highlights

From FY 1999 through FY 2010, Colton spent $6,977,833 on Public Benefits Programs. During that time, spending for the major efficiency programs was $3,402,982, demand was reduced by 12,147 kilowatts, annual energy use was reduced by 92,074,228 kilowatt-hours and lifecycle energy use was reduced by 28,941,656 kilowatt-hours. The budget for FY 10/11 was $1,793258.14.

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. We are winding down our commercial T-12 to T-8 replacement program because almost all of our commercial and industrial customers have had their fluorescent lighting upgraded. We are still providing incentives for any remaining commercial customer that can reduce demand through lighting upgrades and several industrial customers have had significant demand and energy reductions by replacing HID fixtures with high output T-5 fixtures. The most dramatic peak reductions have occurred when the lights were combined with daylight sensors in large building with skylights. CEU is following the rapidly increasing quality and the reduction in prices of LED lighting and will see what incentives might benefit the utility and customers. We are also looking to develop cost effective testing, tune-up and replacement programs for residential and commercial air conditioning and industrial motors.

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 200 -2008 free direct install lighting program expanded to cumulatively serve 572 customers and reduced peak demand by 649 kW saving customers 2,212,289 kWh. The program's cost was $505,937 and saved customers an average of $450 dollars annually.

- 2009-2010 The commercial lighting program concentration was to complete the medium and small business free lighting upgrades and to provide rebates to retrofits large facilities that had used HID and 8 foot inefficient fluorescent lamps to single and multiple fixtures with high output t-5 lamps with as appropriate daylighting and occupancy sensing controls. Together these projects replace more than 10612 fixtures and lamps at a cost of $4000,659. The peak demand savings especially with the daylighting controls was conservatively calculated to be 436 kW and the annual energy savings was 61,650,096. The expected net GHG saving was calculated to be more than 266,747 tons. The benefits of the controls that reduced or turned off lights when adequate daylight was available or when an area was empty was exceptionally cost effective was extremely obvious when viewing the load profiles of the facilities when on sunny days demand suddenly dropped in the late morning and all afternoon.

Current Residential Customer Programs 2010-2011:

- All 16,000 residential customers have been provided with two free compact fluorescent lamps.
- One lamp uses 15 watts to provide the light of a 60 watt incandescent lamp. The other is a higher output lamp that provides the light of a 75 Watt lamp and uses less than 20 Watts. The amount spent on this program was $116,944, it reduced peak demand by 179 kilowatts, overall demand was reduced by 1408 kilowatts, and energy usage was reduced by 1,248,000 kilowatt-hours per year. The total lifecycle carbon saving is calculated to be equal to 4,550 tons of CO2.
- The CFL mailing program so far has sent out 112,000 lamps to 16,000 customers reducing demand by 4,126 kW and providing a cumulative saving of 17,977 Megawatt-hours. We have ended our programs for mass distribution of compact fluorescent lamps to our residential customers due to the low cost and easy availability of CFLs at many outlets.
- 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:

- 2299 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. $346,875 was spent with an average benefit of $150 per customer.

- In 2010-11, 94 customers were assisted by a refrigerator replacement program that provided a new energy saving refrigerator and recycled the old refrigerator. $51,198 was spent for a 10 kW peak demand reduction and a lifecycle savings of 6,164,928 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 had extremely old air conditioners replaced with high efficiency units.
- We did our first small demonstration LED project in the city by installing 58 recess can down lights at the police department where reliability is as an important concern as energy saving.

Measurement and Verification Activities:

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

Proposed CEU Energy Efficiency Programs: for 2010-2012

Residential:

- Low-income residential refrigerator replacement will spend $320 per customer. Expected $32,000 annual budget 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 assistance will reach more customers, but will be capped at $150 per year to allow more to participate
- We will complete the surveys of 1000 of the highest energy using residences and the results of the study will be used to plan for programs in the following year to provide the most cost effective energy solutions to customer problems.

Commercial:

- Specific measures for cooling and refrigeration with be funded some of the planned work is for markets, restaurants, and large office and school buildings. We have found measures as simple as tune-ups and improved controls to evaporatively cooled condensors can be very effective in reducing energy and peak demand loads.

Renewable Energy Development Plans:

The Photovoltaic Rebate Program, which began in 2005 and offered $4.00 per watt, had an exponential increase in requests for incentives. In 2010-2011 there were 15 more projects than in the previous 5 years combined. There were 12 commercial projects totaling 522 kW and one industrial installation of

564 kW. We spent $807,451 dollars on rebates and committed an estimated 1.5 million dollars for future performance based incentives on two large projects.

Colton is no longer offering incentives for customer owned PV installations because we have fulfilled our SB1 commitment to make up to four million dollars available for PV incentives between 2005 and 2015. We are considering developing a program that would purchase the RECs from customers that have installed PV or other renewable energy technologies in our service territory to help meet our RPS standards.

Other renewable energy expenditures in 20010-2011 were $185,000 for landfill gas electric and wind energy. Colton is investigating investment and purchases from geothermal, Photovoltaic, solar thermal, low head hydroelectric, wind, and bio-fuel generation from various resources.

CEU Demand Reduction Programs:

CEU currently does not have any demand reduction programs in place. 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 4,900 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)

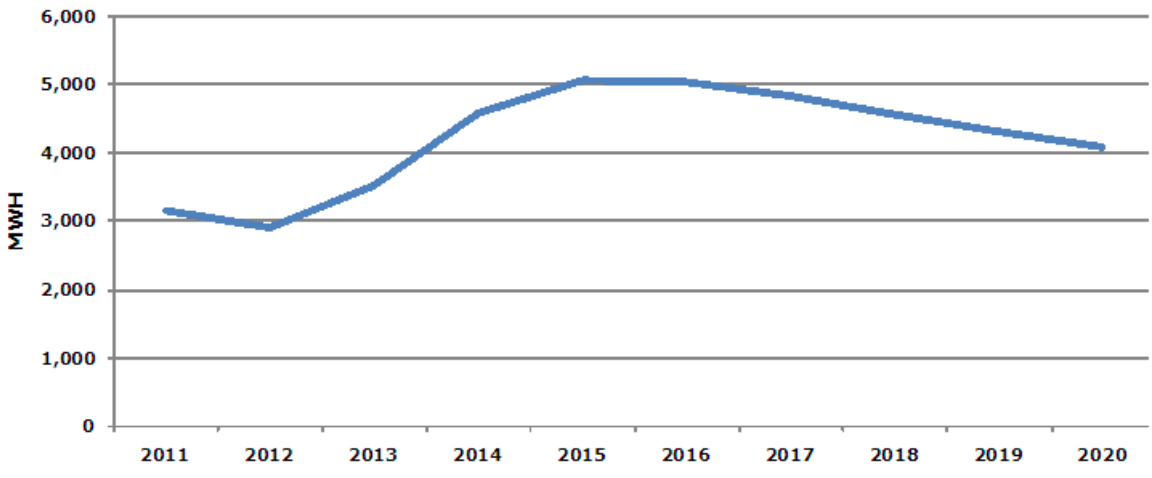
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Colton		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting										
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	94	10	10	71,158	43,691	218,455	123	$36,002	$10,000	$46,002
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	1,522	10	10	46,430	38,913	454,619	269	$25,990	$4,955	$30,945
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	1			1,695	1,441	5,763	3	$500	$45	$545
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		1,617	20	20	119,283	84,045	678,838	396	$62,492	$15,000	$77,492
T&D	T&D										
Total		1,617	20	20	119,283	84,045	678,838	396	$62,492	$15,000	$77,492

EE Program Portfolio TRC Test	**0.67**

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

CORONA DEPARTMENT OF WATER AND POWER (CDWP)

- Electric utility established in 2001
- Consumption of energy: 99% commercial/industrial
- Peak Demand: 27.5 megawatts (15 megawatts of UDC Bundled Load subsumed within Corona's service territory and 12.5 megawatts of Direct Access Load)
- Annual energy use: 149 gigawatt-hours
- CDWP's self-defined mission is to "protect public health"

CDWP Energy Efficiency Program Highlights

In FY10/11, Corona spent $27,300 in rebate incentives to increase energy efficiency for the community. The High Efficiency Washer Rebate program reduced load through the use of Energy Star® appliances. CDWP collaborates with the Metropolitan Water District of Southern California (MWD) who administers a regional rebate program.

Current Commercial Customer Programs:

- Solar Rebate Program: The maximum commercial rebate amount in 2010 was $54,250 ($2.19/kW) and the maximum commercial rebate amount in 2011 was $46,500 ($1.86/kW). CDWP did not receive any requests for solar rebates in FY10/11.
- Energy Efficiency Technical Support Effort: CDWP offers technical support to facilitate installation and operation of air conditioning and lighting controls for commercial customers. CDWP performed three energy audits in FY10/11.

Current Residential Customer Programs:

- Solar Rebate Program: Maximum residential rebate amount in 2010 was $6,570 ($2.49/kW) and $5,580 ($1.86/kW) in 2011. CDWP did not receive any requests for solar rebates in FY10/11.
- Residential High Efficiency Washer Rebate Program: Rebates are provided to customers who purchase and install Energy Star® clothes washing machines. CDWP provided 546 rebates in FY10/11.
- Energy Efficiency Technical Support Effort: CDWP offers technical support to identify energy savings opportunities for residential customers. CDWP performed 2 energy audits in FY10/11.
- Energy Efficiency Kits: CDWP offers energy efficiency kits to all residential customers. These kits included a refrigerator thermometer, two 15 watt CFL bulbs, draft stoppers, air filter whistle, low flow showerhead, low flow faucet aerators, toilet dye tabs, and energy conservation tips. CDWP delivered 471 energy efficiency kits to residents in FY10/11.

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: (2011-2012)

- The City of Corona will continue to offer its existing programs at current funding levels. It will also explore ways to expand and improve upon its existing energy efficiency programs.

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)

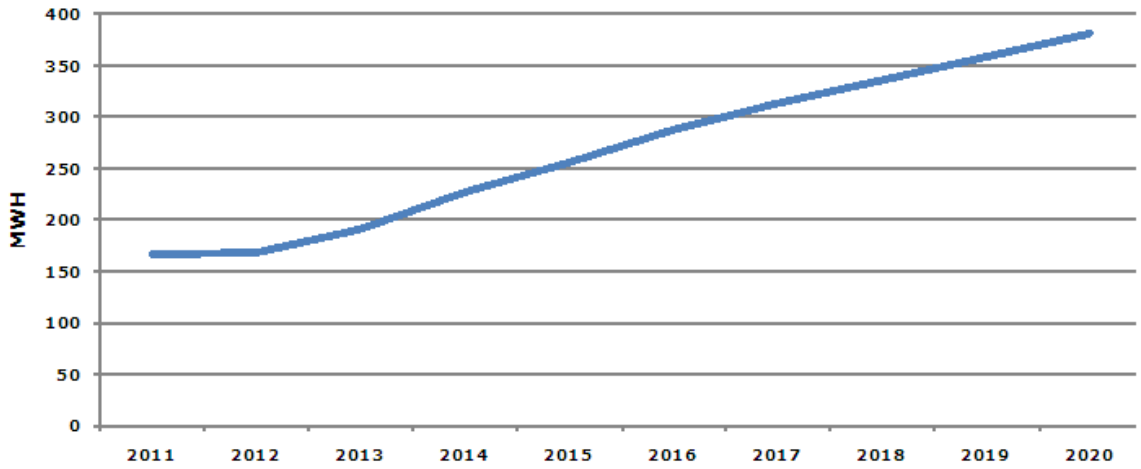
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Corona		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	546	74	74	33,852	28,774	345,290	206	$27,300	$15,264	$42,564
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	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		546	74	74	33,852	28,774	345,290	206	$27,300	$15,264	$42,564
T&D	T&D										
Total		546	74	74	33,852	28,774	345,290	206	$27,300	$15,264	$42,564

EE Program Portfolio TRC Test	**0.13**

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

GLENDALE WATER AND POWER (GWP)

Utility Summary

GWP manages a service territory with over 85,000 customer meters and an all time peak load of 343 MW in September 2010. GWP owns a local natural gas and landfill gas fired generation plant with a nameplate capacity of 287 MW. GWP also owns or has power purchase agreements for a 40 MW share of Magnolia Power Plant, a 20 MW share of Hoover Dam generation, a 36 MW share of Intermountain Power Project, a 10 MW share of Palo Verde Nuclear Generating Station, a 20 MW share of San Juan Unit 3, a 10 MW share of Tieton Hydroelectric Plant, and approximately 80 MW from other power sources, including renewable resources. Approximately 22 percent of GWP retail sales are supplied by renewable resources. This diverse renewable resource mix includes wind, geothermal, local landfill gas, solar and hydroelectric. In December 2011, the Glendale City Council called for GWP to set procurement goals to meet 33 percent renewable by 2020 as required by California statute (SBX1 2). GWP partially owns transmission and has long term contracts on various transmission lines in the LADWP transmission grid. To reduce current load requirements and offset increased supply needs in future, GWP has made significant investments in energy efficiency through its public benefit programs and in customer owned photovoltaic generation through an incentive program.

Glendale City AMI-SMART GRID Initiative

The CEC supports the adoption of new technologies to support automated load control, demand response, dynamic rates, and other Smart Grid enabled programs to reduced electricity load in the State. The adoption of these technologies is slow due to the high cost of entry and lack of successful implementations to serve as models for others to follow. This is particularly true in municipal utility service territories.

GWP was 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. Additionally, GWP was selected by the CEC to receive a $1 million Public Interest Energy and Research (PIER) grant. The total value of the Glendale City AMI-Smart Grid Initiative is over $70 million. GWP began the project in August 2009 and completed the installation of 85,000 electric and 33,000 water meters in September 2011. GWP is perhaps one of the only utilities in the nation to implement AMI water and electric Smart Meters simultaneously. Since project conception

in August 2009 through present GWP has installed an AMI communications Backhaul, Meter Data Management System and 1.27 MW of Thermal Energy Storage. One of the goals of the Glendale City AMI-Smart Grid Initiative is to serve as a model for other municipal utilities to follow in the state and across the nation. It will be completed over the next three years include an Outage Management System/Demand Management System, Enterprise Service Bus, a Home Area Network, web-portal for electric and water usage presentment and Plug-In Electric Vehicle program.

Glendale Water & Power defines smart grid as an electric system that:

- Will enable active participation by consumers. The Smart Grid will provide the tools necessary to transform our customers into informed, involved, and active consumers. These tools will include access to in home displays, web portals, demand response, electric vehicles, and distributed energy resource options.
- Will accommodate all generation and storage options. The Smart Grid will integrate new sources of electrical generation, electric vehicles, and storage systems using simplified interconnection processes and universal interoperability standards to support a "plug-and-play" level of convenience.
- Will enable new products, services, and markets. The Smart Grid will support a new mature, well-integrated wholesale market as the market grows to meet the needs for our customers.
- Will optimize asset utilization and operate efficiently. The Smart Grid will greatly expand data acquisition and data sharing across business units with an eye toward improving load factors, lowering system losses, preventing energy theft, and dramatically improving outage and asset management, reducing maintenance and capital costs with the goal of keeping downward pressure on consumer prices.
- Will anticipate and respond to system disturbances. The Smart Grid will heal itself by automatically detecting and responding to problems thereby minimizing adverse impacts on customers.
- Will operate resiliently against attack and natural disaster. The Smart Grid will incorporate the latest in cyber security standards to make the system resilient to attack and natural disasters and provide for rapid restoration capabilities.

The Glendale City AMI-Smart Grid Initiative will have the following infrastructure and functionality:

- Smart meters with large data storage capabilities and two-way communications hardware and software:
  - Electric meters with remotely-controllable switches to allow for remote service disconnect and re-connect
  - Water meters with leak detection and tamper alarm functionality.
- A wide area network to allow two-way communications between the utility and each meter in its service territory.
- A communications backbone for distribution automation, direct load control, distributed generation, demand response, and new customer directed 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 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.
- New smart grid enabled energy efficiency, load management, and demand response programs based on innovative critical peak pricing, time of use, and dynamic pricing programs.
- Deployment and integration of distributed resources and generation, including renewable resources.
- 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 'smart' appliances and consumer devices) for metering, communications concerning grid operations and status, and distribution automation.
- Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.

Additionally, the Glendale City AMI-Smart Grid Initiative will provide for:

- Improve reliability, security, and efficiency of the electric grid by increased use of digital information and controls technology.
- Dynamic optimization of grid operations and resources, with full cyber-security.

New Smart Grid Programs – FY 2011-2012

CEIVA Energy In- Home Displays
GWP has partnered with CEIVA Energy, LLC to provide a unique In-Home Display (IHD) solution to residential and small business customers. The CEIVA IHD is a digital picture frame that integrates customer's personal photographs with meaningful and useful historical water usage information and near real time electric consumption information. The CEIVA IHD is SEP 1.1 compliant and works as a home gateway that simultaneously communicates with GWP's electric Smart Meters as well as the customer's existing home networks via Wi–Fi, Ethernet and analog phone lines. In addition to providing energy and water consumption usage information, GWP has the ability to enhance outreach, via the IHD by pushing energy efficiency program, conservation and event messages. GWP is piloting 50 CEIVA IHD's over the next six to eight months to a broad cross section of residential and small business customers.

OPOWER Smart Grid Web Portal
GWP partnered with OPOWER to provide Home Energy Reports to 75,000 residential customers and will be embarking on an effort to give customers web-access to electric usage information for their Smart Meters. The Home Energy Reporting system is a proprietary technology platform that integrates usage data with an array of third-party housing, GIS, and demographic data to derive personalized insights about customers and their energy use. The software analytics engine enables the coupling of insightful messaging with specific, targeted action steps for each household to help the customer reduce their electricity consumption. Currently, the program is integrating the existing two month billing data and a

wealth of external data sources to educate customers on how they can save energy. The addition of AMI electric usage data will give customers the ability to view their usage in monthly, weekly, daily or hourly intervals. This information coupled with the analytic engine will provide customers with greater insight into their usage and provide more in-depth ways for them to save energy and money.

Progress Toward AB2021 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, and renewed its 1.0 percent energy savings commitment in the March 2010 CMUA SB1037 report. In 2007, GWP set a cumulative energy savings target through June 2010 of 45,229 MWH. As reported in the March 2011 CMUA SB1037 report to the CEC, GWP surpassed that goal with 49,995 cumulative MWH saved through June 2010. The GWP cumulative MWH goal for June 2011 was 56,289. In FY 10-11, GWP saved an additional 11,764 MWH, bringing our FY 10-11 cumulative energy savings to 61,759 MWH, which exceeded our cumulative energy savings goal by 5,470 MWH. It should be noted that GWP's retail sales in FY 10-11 were 1,050,450 MWh, which was significantly below the sales projection of 1,106,000 MWh used to set out energy savings goal for FY 10-11 in the March 2011 CMUA SB1037 report. As such, the incremental energy savings of 11,764 MWh equates to 1.11% of FY 10-11 retail sales.

Demand Side Management (DSM) Highlights

TOTAL DSM INVESTMENTS

- $4,466,867 invested in FY 2010-2011.
- Over $35 million invested since January 2000.

TOTAL DEMAND AND ENERGY SAVINGS – FY 2010-2011

- Incremental demand reductions of 6,370 KW.
- Incremental coincident peak demand reductions of 6,145 KW.
- Incremental net energy savings of 11,764 MWH.
- Incremental energy savings as a percent of GWP annual load of reached 1.11%.
- Estimated cumulative demand reductions since January 2000 of over 38,000 KW.
- Estimated cumulative energy savings since January 2000 of over 109,500 MWH.

SUMMARY OF ACTIVE DSM PROGRAMS – FY 2010-2011

- 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 5,240 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 2,542 tons of energy inefficient Peak Hogs in Glendale apartments.

- General Residential DSM Programs
  - 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, 245 refrigerators have been recycled and 1,470 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 14,570 in home audits and energy education sessions, installed over 55,195 CFLs, 4,722 water heater blankets, and conducted 4,264 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 37,840 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 10,050 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 14,111 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 2,559 trees since July 2004.
  - GWP has partnered with OPOWER to provide Home Energy Reports to residential customers. The Home Energy Reporting system is a proprietary technology platform that integrates usage data with an array of third-party housing, GIS, and demographic data to derive personalized insights about customers and their energy use. The software analytics engine enables the coupling of insightful messaging with specific, targeted action steps for each household to help the customer reduce their electricity consumption. Currently, the program is integrating the existing two month billing data and a wealth of external data sources to educate customers on how they can save energy. With the deployment of Smart Meters throughout Glendale's service territory, customers with the new Smart Meters will be mailed an OPOWER home energy report that includes their Smart Grid data and access to the website where they can review their energy usage. OPOWER Home Energy Reports have saved participating customers an estimated $1.2 million combined and reduced system wide demand by 3.9% through December 2011.

- 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. Since July 2006, this program has replaced 2,224 tons of energy inefficient Peak Hogs in Glendale small businesses.
    - 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 4,129 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 7,100 tons of HVAC have been tuned since February 2000.
    - Vending Miser is our CMUA award winning program installs "EnergyMiser®" intelligent energy controllers that use passive infrared sensors to power-down refrigerated vending machines, glass door coolers or snack machines when the area around the machine is not occupied. If there is no foot traffic in front of the machine for 15 minutes the machine is shut down. If someone walks by the machine, the sensor will sense the movement and send power back to the machine, keeping the product cold while significantly reducing energy use and costs. As a result, the technology produces an average energy savings of 46 percent. This program has installed 731 vending miser units since July 2009.
- 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 248 retrofit projects since January 1999.
- City Building/School Retrofits
    - Working with Glendale Public Works Department, Glendale Unified School District, Private Schools, and GWP, this program implements energy and water savings retrofits in government and school buildings. Since 1999, this program has invested $9.9 million in energy efficiency programs, including replacement of all city traffic signals with LED lighting, lighting retrofits for city and school buildings, and major HVAC retrofits in city and school facilities.

Energy Efficiency Conservation Block Grant (EECBG)

On October 26, 2009 GWP was awarded an Energy Efficiency Conservation Block Grant totaling $1,883,700. Funding Expenditures included $1.2 million for City Facilities Retrofits and $683,000 for

various other Energy Efficiency projects in the private sector. The total annual energy savings was 7,649,717 kWh. It is estimated that the grant funds created approximately 20 jobs with a total of 13,596 labor hours.

Time Period for Program Performance Data

- Fiscal Year Ending June 30, 2011

Load Management Programs FY 2010-2011

- GWP entered 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. The project installed 162 Ice Bear units at local small and medium sized businesses in Glendale as well as on city facilities. 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 337 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 64,000 in annual energy costs.
- GWP implemented 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

- In 2010, Lincus completed GWP's EM&V plan and received GWP's approval to proceed with the detailed study 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 & Power. Measuring/monitoring the units can vary between an hour and a week depending on the measure. Lincus has completed the EM&V study report. The initial draft study report was sent to GWP on January 2011 and was finalized in September 2011. The report is composed of both process and impact evaluations of selected GWP energy efficiency programs including verification of installations, numbers of sizes of installations, review of selected energy savings 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 is to ensure that measures are installed as claimed by GWP and to lend credibility to GWP's savings reports as compared to the industry standards that were available at the time of GWP's program processing and implementation. In addition to meeting regulatory compliance requirements, EM&V studies are essential for a number of other reasons, namely: 1) to measure the effectiveness of existing programs and 2) to educate the program implementer on ways to improve existing and future programs.

GLENDALE WATER AND POWER (GWP)

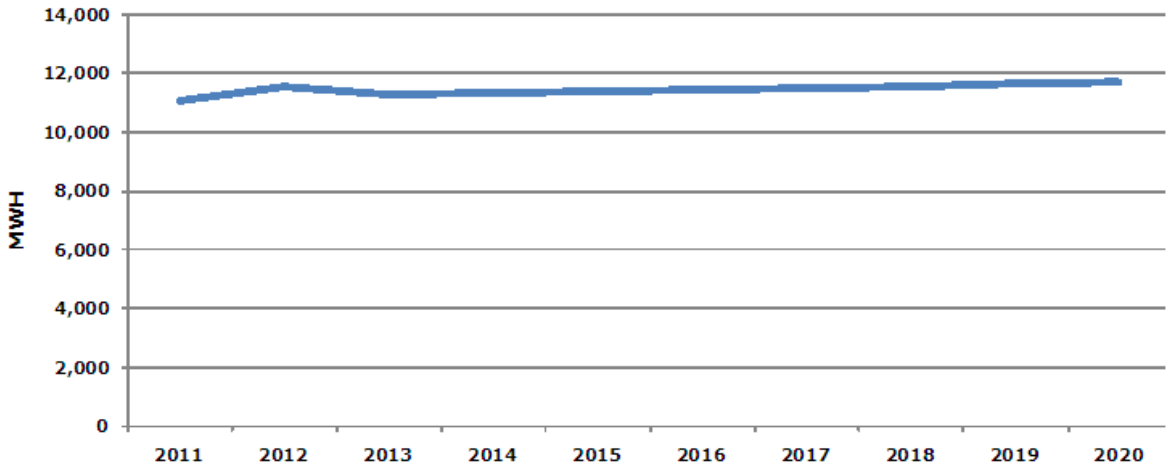
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Glendale		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	855	171	171	78,489	66,716	800,588	477	$17,656		$17,656
HVAC	Res Cooling	1,318	204	260	202,947	179,215	3,783,604	2,464	$246,732		$246,732
Appliances	Res Dishwashers	423	41	41	14,805	11,844	130,284	77	$23,155		$23,155
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	8,018	348	48	336,756	286,243	1,431,213	812	$68,437		$68,437
Pool Pump	Res Pool Pump	18	1	1	5,778	5,778	57,780	35	$2,272		$2,272
Refrigeration	Res Refrigeration	2,169	91	91	879,151	771,623	12,235,360	6,906	$482,069		$482,069
HVAC	Res Shell	1,123	197	212	195,940	148,310	2,379,114	1,416	$103,810		$103,810
Water Heating	Res Water Heating	422	5	5	32,072	18,602	279,026	166	$6,035		$6,035
Comprehensive	Res Comprehensive	4,510	92	92	6,201,001	6,057,052	9,719,039	5,920	$735,877		$735,877
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	135	2,543	2,543	1,379,444	1,241,500	21,901,374	13,302	$444,793		$444,793
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	548	2,591	2,591	2,579,225	2,446,980	31,858,263	19,571	$2,244,969		$2,244,969
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	329			530,348	450,796	1,803,183	1,005	$75,769		$75,769
HVAC	Non-Res Shell	327	86	90	93,195	79,216	792,158	472	$15,294		$15,294
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		20,195	6,370	6,145	12,529,151	11,763,873	87,170,986	52,622	$4,466,867		$4,466,867
T&D	T&D										
Total		20,195	6,370	6,145	12,529,151	11,763,873	87,170,986	52,622	$4,466,867		$4,466,867

EE Program Portfolio TRC Test	1.06

Excluding T&D

Energy Savings Targets 2011-2020



	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%

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 2,603 customers (82.4% Residential; 17.2% Commercial; 0.4% Industrial). The City of Gridley experienced a growth rate of 2.5% during FY2011. Peak demand is 10.6 megawatts and is usually experienced on a July or August afternoon. Annual energy use for GMU between July 1, 2010 and June 30, 2011 was 32.7 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, refrigeration 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 is available for GMU 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 upon request, the customer is provided a written report summarizing findings and recommendations and/or additional visits to answer questions.
- Appliance Rebates: GMU provides rebates for the purchase of several ENERGY STAR® qualified appliances.
- Residential Cooling Rebates: GMU offers rebates for residential and small business customers who install high performance heat pumps, central air-conditioners, or evaporative coolers that exceed current state requirements. GMU also offers a rebate for regular maintenance of cooling equipment (tune-ups every 3 years).
- Residential Lighting Rebates: GMU offers rebates to homeowners who install Energy Star qualified compact florescent lamps (CFLs) and/or LED holiday lights.
- Residential Electric Water Heaters: GMU offers customers a rebate toward the installation of a new, energy efficiency electric water heater.
- Weatherization Incentives: GMU provides financial incentives for homeowners who invest in weatherization measures, including insulation, window treatments/replacement and air/duct sealing and radiant barriers.

Commercial and Industrial Energy Efficiency Programs:

- Energy Audits and Rebates: On-site energy audits by GMU energy specialists are available to commercial customers. Energy efficiency measures are recommended based on each audit and follow up visits support implementation of recommended measures. Energy efficiency rebates are available for upgrades identified during these audits.
- Commercial Lighting: A commercial lighting retrofit program is offered to businesses in the city's electric service territory. 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. GMU provides technical assistance and financial incentives for the installation of energy efficient lighting upgrades.
- Commercial Refrigeration: A commercial refrigeration retrofit program, Keep Your Cool (KYC), is offered to businesses in the city's electric service territory. The KYC contractor audits the age and condition of existing refrigeration equipment and makes recommendations to improve the energy efficiency of equipment. Efficiency measures installed in the KYC program include programmable EC motors, motor controllers, anti-sweat heater control units, LED case lighting, door gaskets, auto door closers and strip curtains.
- Custom Energy Efficiency Projects: GMU offers financial incentives to commercial customers based on site-specific consumption. Incentives are tailored to the individual customer needs based on the audit and the potential energy savings associated with the custom project.

Performance Results for FY2011

The City of Gridley's AB2021 Energy Reduction Target for FY2011 was 75,000 kWh. In FY2011, the city exceeded their target by 216%, with a total net energy reduction of 237,462 kWh.

The City of Gridley's AB2021 Demand Reduction Target for FY2011 was 22 kW. In FY2011, the city surpassed their target, with a total demand reduction of 59 kW.

The commercial sector delivered the bulk of savings in FY2011. The commercial lighting retrofit program served 3 businesses, yielding a net savings of 166,824 kWh. The KYC program served 1 small commercial business with a comprehensive mix of measures, yielding a net savings of 58,861 kWh.
The City of Gridley's FY2011 EE Program Portfolio had a Total Resource Cost (TRC) of 1.24.

Performance Results for FY2011
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The City of Gridley's FY2011 EE Program Portfolio had a Total Resource Cost (TRC) of 1.24.

FY2012 Forecast

The City of Gridley is forecasting that it will meet the AB2021 targets by continuing to offer the current suite of energy efficiency rebates and by identifying opportunities for special program offers, with the commercial sector contributing the vast majority of the energy savings.

The city's energy efficiency rebates were revised for FY2011-FY2013 based on the Measure Quantification Report issued by KEMA in December 2009. The FY2011-FY2013 energy efficiency program reflects a comprehensive suite of measures that are cost-effective based on the rebate level offered and the quantified savings in the KEMA report. The city's forecast indicates that the FY2012 target of 75,000 kWh can be met with a funding level of $86,000 for rebates and administration; however, the city anticipates the FY2012 funding level will support higher performance results (similar to FY2011). A 3% increase in program activity will cost the city approximately $157,000 for rebates and administration.

Evaluation, Measurement and Verification

In 2011, GMU decided to forego an EM&V report and instead in order to perform a more comprehensive evaluation effort in the next year that will include work done between July 1, 2009 and June 30, 2012. That report will be completed and posted on the NCPA website sometime after June of 2012.

ARRA Activity

In the fall of 2009, the City of Gridley joined in a coordinated proposal that included Biggs, Gridley, Healdsburg and Ukiah to install LED street lighting as a demonstration project to test their efficacy and energy savings. The proposal was coordinated by the Northern California Power Agency (NCPA) and submitted as an Energy Efficiency Conservation Block Grant to the California Energy Commission (CEC) under the federal stimulus - ARRA program. The proposal received CEC approval in the fall of 2010. In 2011, Gridley completed the installation of the lighting funded by this Grant. The city installed 72 street lighting fixtures out of a total of 285 system-wide fixtures (approximately 25%).

GRIDLEY MUNICIPAL UTILITY (GMU)

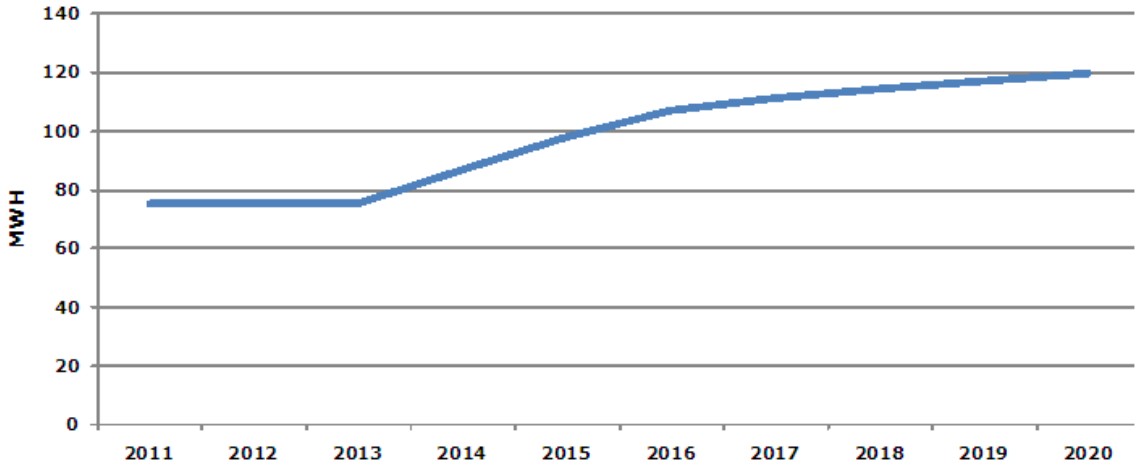
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Gridley		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1	1	1	471	377	4,522	2	$75	$2,852	$2,927
HVAC	Res Cooling	10	1	1	1,713	1,244	19,268	12	$1,369	$13,057	$14,426
Appliances	Res Dishwashers	3	1	1	198	168	1,851	1	$180	$1,165	$1,345
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting										
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	8			1,452	1,089	15,246	8	$600	$8,835	$9,435
HVAC	Res Shell	6	1	1	1,872	1,066	21,313	14	$1,219	$8,011	$9,230
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling										
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	3	49	49	196,263	166,824	1,970,842	1,092	$44,825	$15,094	$59,919
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	1	6	6	66,208	58,925	471,400	249	$11,139	$3,175	$14,313
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive	1			9,712	7,770	101,005	53	$40,000	$654	$40,654
Other	Other										
SubTotal		33	59	59	277,889	237,462	2,605,447	1,431	$99,406	$52,843	$152,249
T&D	T&D										
Total		33	59	59	277,889	237,462	2,605,447	1,431	$99,405.87	$52,843	$152,249

EE Program Portfolio TRC Test	1.24

Excluding T&D

Energy Savings Targets 2011-2020



	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%

CITY OF HEALDSBURG

Demographics and Load Data

The City of Healdsburg's Electric Department provides electric service to a population of just over 11,200 through roughly 5,500 individual electric services. These electric services are predominantly residential (4,581 meters) with the remaining portion ranging from small commercial through moderately sized industrial facilities. While the city does continue to experience small increases in commercial development, the forecasted growth rate for electric consumption continues to center around 1 percent per year. The 2010-2011 fiscal year energy use was 78,169 megawatt-hours. The City's historical peak coincidental demand was 21.1 megawatts in July 2006. In 2010, the City's power content is as follows: Geothermal 40 percent, small hydro 1 percent, large hydro 19 percent, and undefined market purchase totaling 41 percent.

City of Healdsburg Energy Efficiency Program Overview

Healdsburg's Electric Department manages a comprehensive energy efficiency program for residential and commercial customers focusing on peak load reduction as well as energy conservation. For residential customers, rebates incentivize the installation of a variety of energy efficiency measures. For commercial customers, rebates are available for upgrading lighting, HVAC equipment, and custom programs where detailed analysis shows a benefit to cost ratio consistent with the Electric Department's existing programs.

Coordination with the City of Healdsburg's Green City Committee will continue in facilitation of a broad community focus on 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."

Residential Programs:

- Energy Efficiency Hotline: The city's electrical customers can call a local number 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: The city provides rebates for the purchase of several ENERGY STAR® rated appliances.

- Residential Heat Pump and Efficient Air Conditioning Rebates: The city offers rebates for residential and small business customers who install high performance heat pumps, central air-conditioners or evaporative coolers that exceed current state requirements.

- Residential Lighting Rebates: The city offers rebates to homeowners who install ENERGY STAR qualified compact fluorescent lamps (CFLs) and LED holiday lights.

- Residential Electric Water Heater: The city offers customers a rebate toward the installation of new, energy efficient electric water heaters.

- Weatherization/Window Incentives: The city provides financial incentives for homeowners who invest in home weatherization and window replacement projects.

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. Energy Efficiency Rebates are available for upgrades identified through these audits.

- Commercial Lighting: This program engages local lighting and electrical contractors to promote and install energy efficient lighting upgrades through technical assistance and financial incentives available from Healdsburg's Electric Department.

- Custom Energy Efficiency Programs: The Healdsburg Electric Department will consider custom energy efficiency programs for site-specific consumption. The Electric Department will require that the city's contractor review and endorse all custom programs. This review may result in a small cost adder to the proposed project but validates the benefit to cost ratio of the program. The Healdsburg Electric Department retains the sole right to approve or deny custom projects.

Additional Programs:

- Time Based and Seasonal Rates: The City of Healdsburg has implemented Time Based (Time of Use) and seasonal rates for both residential and commercial customers. The time based and seasonal rates offer customers a better understanding of market pricing and the need to conserve when the electric system is approaching peak capacity. Time based and seasonal rates reward customers that shift their electrical loads to off-peak or partial-peak periods.

- 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 FY2010

For FY2011-FY2013, Healdsburg's City Council adopted ambitious energy efficiency goals that were more than double the EE goals of the previous reporting period. Energy efficiency activities not completed in FY2011 and a reduction in participation in the commercial lighting program resulted in Healdsburg not meeting the AB2021 goal set for FY2011.

The City of Healdsburg's Energy Savings Target for FY2011 was 420,000 kWh. In FY2011, the city fell short of their annual target, but did accomplish a total energy reduction of 237,419 kWh.

The City of Healdsburg's AB2021 Demand Reduction Target for FY2011 was 118 kW. FY2011 end with the city under the annual target, netting a demand reduction of 97 kW.

The largest contributor to savings in FY2011 was the commercial lighting retrofit program, which yielded 204,259 net annual kWh and 45 net kW. The City of Healdsburg's FY2011 EE Program had a Total Resource Cost (TRC) of 1.29.

FY2012 Forecast

The City of Healdsburg is forecasting to meet their AB2021 targets by continuing to offer a comprehensive suite of energy efficiency rebates and other program offers to their customers, with commercial lighting, a residential lower-income lighting program, and commercial custom projects for the city contributing the vast majority of the energy savings.

The city's energy efficiency rebates were revised for FY2011-FY2013 based on the Measure Quantification Report issued by KEMA in December 2009. The FY2011-FY2013 energy efficiency program reflects a comprehensive suite of measures that are cost-effective based on the rebate level offered and the quantified savings in the KEMA report. While the city's forecast indicates that the FY2012 target of 420,000 kWh could be met with a funding level of $167,000 for rebates and administration, participation is forecasted to be level with system growth (1%) which will result in lower energy savings than targeted and associated program cost reduction to approximately $95,000 for rebates and administration. In FY2011, the city also set aside $100,000 for custom project rebates to upgrade pumps at the city's water district facilities. With an expected completion in FY2012, the exact energy savings are not known but are expected to be a significant portion of the annual total.

Evaluation, Measurement and Verification

Healdsburg's last EM&V report was for FY2009. Utilities have the option of performing EM&V reports annually, or once every three years. Healdsburg is currently evaluating this option, and our decision in this area has not yet been reached.

ARRA Activity

In the fall of 2009, the City of Healdsburg joined in a coordinated proposal that included Biggs, Gridley, Healdsburg and Ukiah to install LED street lighting as a demonstration project to test their efficacy and energy savings. The proposal was coordinated by the Northern California Power Agency (NCPA) and submitted as an Energy Efficiency Conservation Block Grant to the California Energy Commission (CEC) under the federal stimulus - ARRA program. The proposal received CEC approval in the fall of 2010.

On November 30, 2011, Healdsburg finished installing all the LED streetlights related to the ARRA grant. There were 101 LED streetlights installed (71 – 4bar @ 103watts ea. and 30 – 5bar @127wattsea. Each light replaced a 250watt HPS (actual draw for each existing HPS light fixture is roughly 293 watts). This results in an annual energy savings of roughly 78,764 kilowatt hours.

CITY OF HEALDSBURG

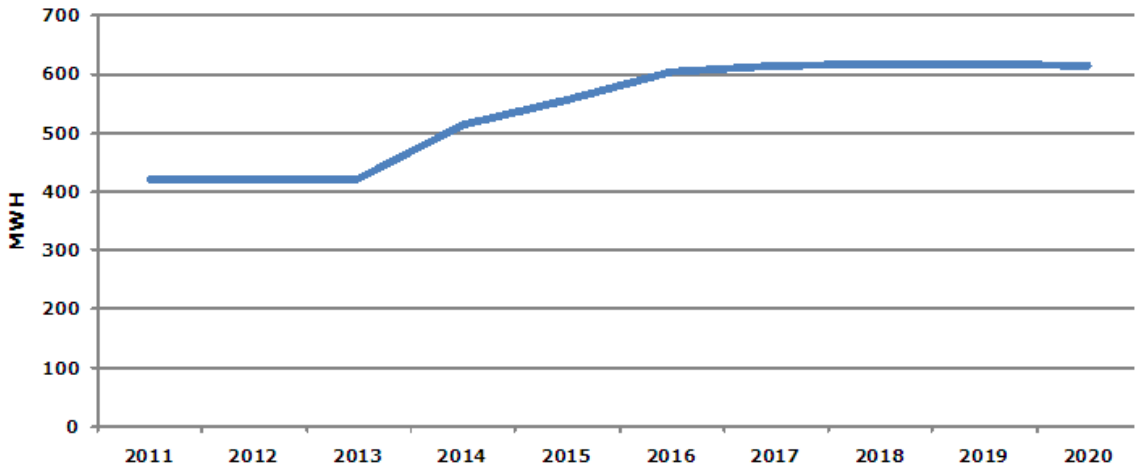
Time Period for Reporting Data: Fiscal year ending 6/30/2011

Healdsburg		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	19	18	18	8,949	7,159	85,910	47	$1,550	$10,096	$11,646
HVAC	Res Cooling	21	3	4	1,423	1,096	19,735	12	$2,474	$2,624	$5,097
Appliances	Res Dishwashers	7	1	1	462	393	4,320	2	$400	$506	$906
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	527	28	3	22,338	18,900	99,686	53	$1,490	$2,219	$3,709
Pool Pump	Res Pool Pump	3			1,787	1,233	12,327	7	$375	$1,407	$1,782
Refrigeration	Res Refrigeration	27	1	1	4,803	3,602	50,243	27	$2,000	$5,449	$7,449
HVAC	Res Shell	5	1	1	1,413	777	13,391	8	$669	$2,222	$2,891
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling										
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	12	45	45	240,305	204,259	2,248,253	1,246	$47,535	$13,260	$60,795
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		621	97	73	281,480	237,419	2,533,865	1,403	$56,493	$37,783	$94,275
T&D	T&D										
Total		621	97	73	281,480	237,419	2,533,865	1,403	$56,493	$37,783	$94,275

EE Program Portfolio TRC Test	1.29

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

CITY OF HERCULES MUNICIPAL UTILITY (HMU)

The Hercules Municipal Utility ("HMU") was created in 2001, with initial operations beginning in 2003, providing safe, reliable and cost-effective electric service to retail consumers in certain parts of the City of Hercules, including virtually all the redevelopment areas, and the Water Pollution Control Plant that is jointly owned by the Cities of Hercules and Pinole. Hercules Municipal Utility serves over 800 residential and commercial customers in a territory where most 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.

Although not energy efficiency program specific, there has been recent interest with regard to time-of-use rates and in addition, charging rates for battery electric vehicle (BEV) and plug-in hybrid electric vehicle (PHEV) recharged via a recharging outlet at the customer's premise.

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 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)

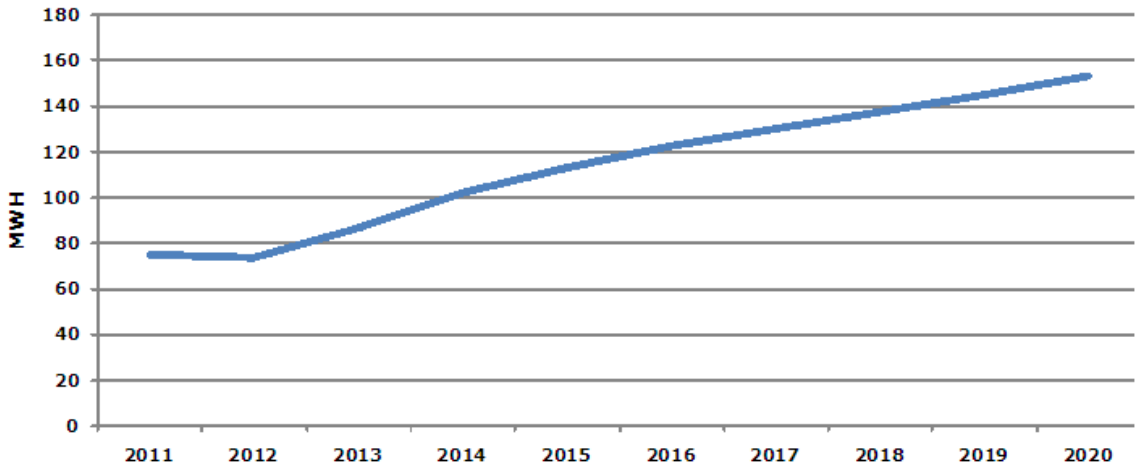
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Hercules		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	5	1	1	310	264	3,162	2	$375		$375
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting										
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	2			242	182	2,541	1	$175		$175
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		7	1	1	552	445	5,703	3	$550		$550
T&D	T&D										
Total		7	1	1	552	445	5,703	3	$550		$550

EE Program Portfolio TRC Test	0.19

Excluding T&D

Energy Savings Targets 2011-2020



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%

CITY OF INDUSTRY

Overview

- 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;
- 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.

Proposed Renewable Projects and Services:

- IPUC has a photovoltaic power generation program, which facilitates their projects in the LA Basin.
- IPUC has investigated a pumped storage electric project located in the LA basin.

Demand Reduction Programs:

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

PITTSBURGH POWER COMPANY dba ISLAND ENERGY

- Doing business as Island Energy, the Pittsburg Power Company owns, operates an electrical and natural gas distribution system located on Mare Island, Vallejo, California.

- Island Energy supplies electric and natural gas services to about 180 commercial and 278 residential accounts. Commercial customers account for 92% of Island Energy's electricity sales and residential customers account for the remaining 8%.

- Peak demand is approximately 4 megawatts, which usually occurs during noon to 4pm.

- Island Energy purchases 100% of its electricity through long-term contracts. About 35-70% of electricity that Island Energy purchases are hydroelectric.

- Island Energy's Public Benefits Fund is collected through a kilo-watt hour usage-based charge and supports the Energy Efficiency Programs, Low Income Assistance Program, and Solar Incentive Program on Mare Island.

Island Energy Efficiency Program Highlights

Electrical Substation Upgrade: Island Energy has committed $3,000,000 of its reserve to upgrade its electrical substations and backbone distribution system to improve system efficiency. The three-phased project involves replacements of aged transformers with new and more efficient transformers, installation of two new SF6 circuit to replace oil circuit breakers to reduce GHG emission and stabilization of a series of substations to improve system reliability.

Mare Island Lighting: Island Energy has worked closely with Lennar Mare Island, the master developer on Mare Island, to promote efficiency lightings throughout Mare Island. This program has been implemented throughout residential areas on Mare Island. Island Energy is also working with the City of Vallejo to replace old street lights with LED street lights.

Commercial Energy Efficiency Programs:

Island Energy's Commercial Energy Efficiency Programs are designed to encourage energy efficiency measures to commercial customers. Based on a study of existing business types and load profile on Mare Island, several programs were developed to improve energy efficiency and to maximize energy savings for existing businesses on Mare Island.

- **Commercial Lighting Rebate:** Island Energy offers up to $10,000 rebate for installation of energy efficient lighting fixtures, sensors & controls, LED signs or retrofit/de-lamping projects in commercial buildings. A recent lighting retrofit project to convert an old warehouse into a manufacture facility has installed 200 units of 6 lamp T5 High Efficiency Fluorescent lamps, saving 120,000 kilowatt-hours per year and a significant amount of energy savings during their life cycle.

- **Motors & Process Improvement:** Island Energy offers up to $15,000 rebates for installation of new, NEMA premium efficiency motors ranging in size of 5-200 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 $0.05/kWh of the first year's expected energy savings.

- **Compressed Air System:** Island Energy offers rebates up to $35,000 for installation of new compressed air system or redesigning or retrofitting an existing compressed air system. The rebate for this program is $0.05/kWh of the first year's expected energy savings. Island Energy has paid $35,000 in rebates since the inception of this program.

- **Solar Incentive Program:** Island Energy currently offers $1.84 rebates for per installed watt towards the purchase and installation of solar energy systems by commercial customers. A solar carport project with a nameplate rating of 84.20 kW was installed at a federal government building on Mare Island in 2010, and a rooftop solar project is under construction at the same facility.

- **LED Street Lights:** Island Energy offers rebates for replacement of old street lights with LED street lights. Rebate amount is based on the wattage of old street lights being replaced. Island Energy paid $3,325 in rebates for 25 LED street lights, replacing old street lights at a university campus in year 2010.

Residential Energy Efficiency Programs:

- Home Energy Audit Service: On-site free Energy Advisory service is available upon resident's request. Trained electrical and gas technicians can provide on-site analysis and offer specific strategies to help residents to reduce their energy bills.
- Residential Retail Lighting: Island Energy provides up to three free CFL light bulbs per year per household on Mare Island. 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 programs. Island Energy has given out over 1,200 CFL light bulbs over the years and accumulated energy savings is 24,000 kilowatt-hours per year.
- Appliance Efficiency Program: Island Energy offers rebates for installation of Energy Star-rated appliances, including dishwashers, clothes washers, refrigerators and air conditioners. Island Energy has paid $1,675 in rebates for over 30 Energy-Star qualified appliances since the inception of the program in 2008.
- Solar Incentive Program: Solar rebate is available to residential roof-top solar projects as well. Island Energy currently offers $1.84 rebates for per installed watt towards the purchase and installation of solar energy systems by residential customers. Island Energy paid $4,869 rebate for a 2.4 kW residential rooftop solar system in year 2010.

PITTSBURG POWER COMPANY dba ISLAND ENERGY

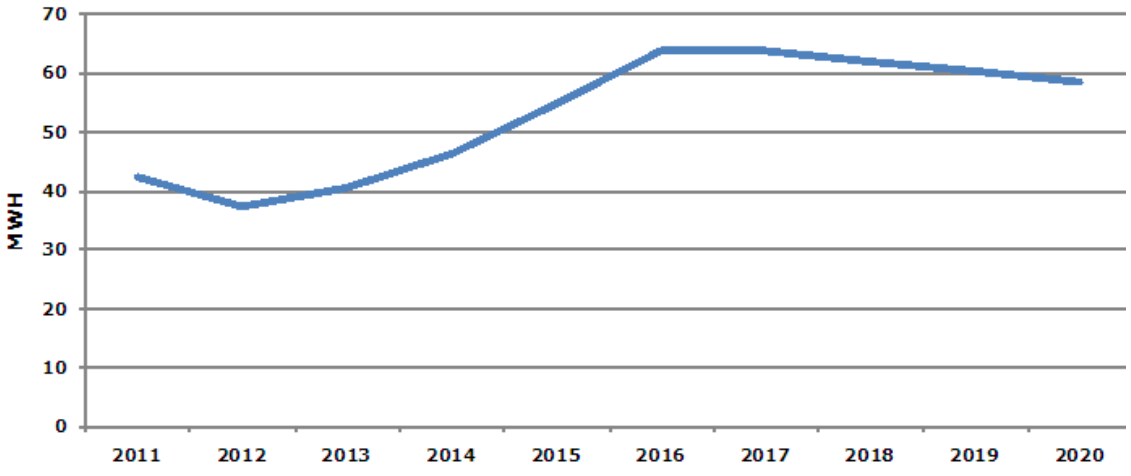
Time Period for Reporting Data: Calendar Year ending 12/31/2011

Pittsburg		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	5	1	1	310	264	3,162	2	$375	$303	$678
HVAC	Res Cooling										
Appliances	Res Dishwashers	2			62	50	546		$100	$109	$209
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	47	1		1,081	811	4,054	2	$141	$100	$241
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	2			242	182	2,541	1	$100	$139	$239
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	240	41	41	161,000	137,188	1,538,800	851	$13,730	$5,347	$19,077
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		296	43	42	162,695	138,493	1,549,102	857	$14,446	$5,999	$20,444
T&D	T&D										
Total		296	43	42	162,695	138,493	1,549,102	857	$14,446	$5,999	$20,444

EE Program Portfolio TRC Test	2.37

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

IMPERIAL IRRIGATION DISTRICT (IID)

- Established in 1936
- IID serves 148,196 customers
- Peak demand: 1,000 MW, on August 24, 2011
- Annual energy sales are 3,285 GWh in 2011

IID's Energy Efficiency Program Highlights

Total program expenditures of $6,306,179 in calendar year 2011 will result in estimated savings in excess of 10,034,126 kilowatt-hours annually. This investment in efficiency will reduce peak purchases by approximately 2,882 kilowatts. The IID service area, which consists of Imperial Valley in Imperial County and the Coachella Valley in Riverside County, continues to be impacted by the current economic recession. The area has a historically high unemployment rate and some cities within the service territory continue to top the nation's list.

IID has recently released its draft renewable energy procurement policy. Adhering to Senate Bill 2(1X) requirements, the policy includes a detailed enforcement program and procurement plan to fulfill California's Renewable Portfolio Standard. The plan aligns with California law that establishes three compliance periods and targets aimed to enforce progress in achieving the renewable energy mandate.

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.
- 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.

2011 Commercial Customer Programs:

- **Custom Energy Solutions Program (CESP)** – offers financial incentives for annual energy savings to medium and large commercial customers. The financial incentives are intended to offset the

costs to purchase and install qualifying lighting, refrigeration, air conditioning, food service, agricultural, and/or controls equipment. Qualifying EEMs must retrofit or upgrade old equipment with new, energy efficient technologies that exceed the applicable Title 24 energy efficiency requirements established by the California Energy Commission or, in some cases, current industry standards using IID-approved project baselines.

- **New Construction Energy Efficiency Program (NCEEP)** – is a non-residential new construction and renovation energy efficiency program that combines an integrated design process with financial incentives for energy saving design of at least 10% over current Title 24 requirements. The NCEEP assists customers in moving beyond initial cost considerations toward the realization of long-term energy cost savings and avoidance of lost opportunities as new non-residential buildings are designed and constructed.
- **Pumping Efficiency Program (PEP) – is an educationa**l and financial incentive program intended to improve overall water pumping efficiency and encourage energy conservation in the Imperial Irrigation District service area. Rebates are available to encourage the retrofit or replacement of eligible electrically powered water pumps to improve overall pumping efficiency.
- **Small Commercial Energy Audits** –allows commercial customers to quantify energy consumption and evaluate measures that can be applied to make a facility more energy efficient. An assessment will show problems that may, when corrected, save the customer a significant amount of money over time. IID offers energy audits and customized reports to customers.
- **Swimming in Savings** - designed to encourage IID residential customers and small homeowner associations to install qualified variable speed pool pump products. Customers have an option to receive $350 rebate for replacing single-speed pool pump in an operable condition or $200 rebate for single-speed or two-speed natural replacement.
- **Community Lighting** – targets both commercial customers and municipalities. The Community Lighting Program consists of the installation of dusk to dawn lighting. The outdoor lighting will be installed at no cost to the participating customer and programmed to turn on at dusk and off at dawn.
- **Open for Business Direct Install** – helps small businesses decrease their operating costs. A certified contractor works with eligible small businesses to evaluate energy use, identify energy-saving opportunities and install energy-efficient retrofit replacement equipment at no cost to the customer. Measures include compact fluorescent light bulbs, hard-wired compact fluorescent light fixtures, T-8 lighting, occupancy sensors, LED exit signs and vending machine controls.
- **Vending Misers** – designed to reduce energy consumption of installed vending machines through a direct install of vending misers, cooler misers, and snack misers at no cost to the participating customer.
- **Energy Rewards Rebate Program** - IID offers customer rebates for qualified energy efficient products. The 2011 qualifying equipment for nonresidential customers must retrofit, replace or upgrade old equipment with new, energy-efficient technologies that meet and exceed Title 24 standards in effect at the time of installation. The program offers rebates for the following product categories:
    - ENERGY STAR qualified programmable thermostats;
    - Packaged terminal air conditioners and heat pumps;
    - Commercial and Industrial HVAC equipment;
    - Lighting; and

- Energy efficient motors.

- **Rates** - IID offers interruptible and high voltage rates for its large commercial and industrial customers.

2011 Residential Customer Programs:

- **Residential Energy Audits** -allows residential customers to quantify energy consumption and to determine measures that can be applied to make customer's home more
- energy efficient. An assessment will identify conditions that may, when corrected, save the customer a significant amount of money over time. IID offers energy audits and customized reports to customers.
- **Energy Rewards Rebate Program** -IID offers customer rebates for qualified energy efficient products. The 2010 qualifying product categories for residential customer include:
  - Energy-efficient central air conditioners/heat pumps;
  - ENERGY STAR qualified room air conditioners;
  - ENERGY STAR qualified dual pane windows; and
  - Variable Speed Pool Pumps.
- **Weatherization** - provides no-cost energy-saving home improvements to income-qualified renters and homeowners. Measures installed include CFLs, hard fixtures (exterior and interior) and occupancy sensors.
- **AC Trade Up** – offers a higher per ton incentive for the early replacement of low-efficiency air conditioning units. Units must be in operable condition and have a rating of 10 SEER or lower.
- **Payment Assistance -** IID Energy offers several income-qualified assistance programs designed to help our customers meet their energy needs.
  - Residential Energy Assistance Program (REAP) offers income-qualified customers a discount of up to 30 percent discount on their electric billing rate.
  - Emergency Energy Assistance Program (EEAP) provides financial assistance to customers facing a financial crisis and disconnection for nonpayment.
  - Medical Equipment Energy Assistance Program (MEEAP) is an assistance program that reduces the electrical rate for a defined quantity of electricity used to operate medical equipment. The household must include a full-time resident who requires specific medically necessary electric equipment to sustain life or prevent deterioration of a person's medical condition.

Other 2011 Programs

- **CFL Recycling Events** – throughout the year, IID hosted various events where customers were allowed to recycle up to five incandescent light bulbs in exchange for CFLs. Approximately 3,800 CFLs were distributed in 2011.

Proposed IID Energy Efficiency Programs and Services: (2012)

The 2012 program portfolio will allow IID to meet their annual target of 16,480 mega-watt hours. There are several programs from 2011 that will continue into 2012, some with revised guidelines. Those programs are:

- Custom Energy Solutions Program
- New Construction Energy Efficiency Program
- Residential and Small Commercial Energy Audits

- Energy Rewards
- Weatherization
- Direct Install
- Payment Assistance

New Programs for 2012 include:

- **Community Solar** – IID has partnered with San Diego State University to create a renewable energy center that would serve as a focal point for research, workforce training and professional development for the renewable energy industry in the Imperial Valley. A solar farm will be located at the same facility, which will serve as the generation source for IID's community solar program and anchor project for SDSU's Renewable Energy Center.
- **LEAP Program** – designed to assist educational institutions, IID has developed a tier system that will provide a higher incentive for measures such as lighting and air-conditioning units.

Evaluation, Measurement & Verification:

IID will conduct an evaluation of their programs on a bi-annual basis, covering programs for the two-year cycle. Full results and report will be submitted to SCPPA and incorporated in the SB1037 report accordingly.

IMPERIAL IRRIGATION DISTRICT (IID)

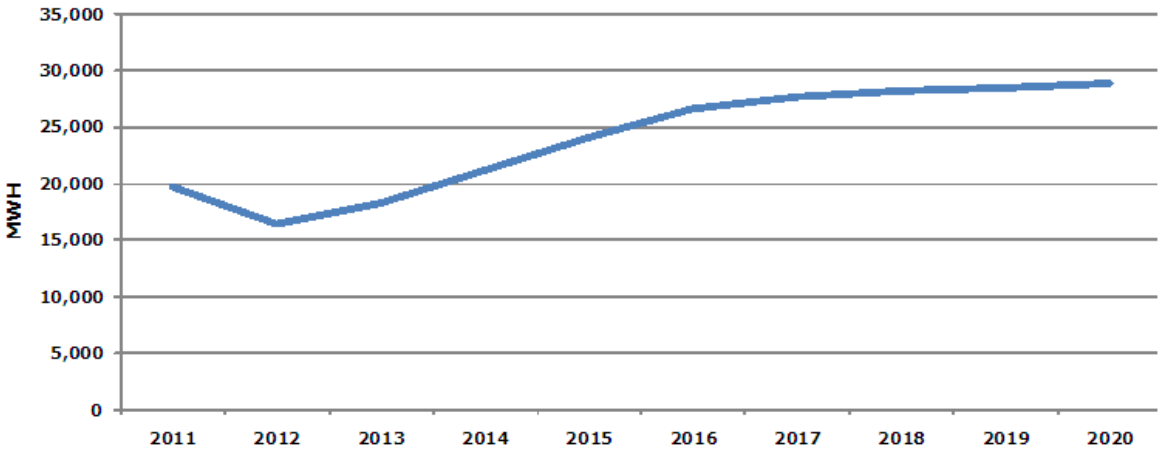
Time Period for Reporting Data: Calendar Year ending 12/31/2011

Imperial ID		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling	5,001	571	1,688	1,496,012	1,292,275	23,201,478	14,681	$1,076,798	$881,158	$1,957,955
Appliances	Res Dishwashers										
Consumer Electronics	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	6,614	249	39	311,647	286,445	1,451,045	823	$60,209	$112,546	$172,755
Pool Pump	Res Pool Pump	306	29	29	176,733	157,490	1,574,900	939	$91,298	$28,292	$119,590
Refrigeration	Res Refrigeration	792	14	14	95,832	83,374	1,167,234	659	$47,441	$17,889	$65,330
HVAC	Res Shell	185	34	34	69,076	60,138	1,201,773	792	$55,697	$42,451	$98,148
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive	745	52	52	283,845	241,268	723,805	411	$108,025	$117,692	$225,717
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	940	376	264	1,241,275	1,057,593	19,856,627	12,089	$355,281	$376,006	$731,287
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	57,161	1,311	761	6,477,953	5,829,497	67,475,280	39,963	$1,780,015	$854,472	$2,634,487
Process	Non-Res Motors										
Process	Non-Res Pumps	2	51		290,410	232,328	4,646,560	2,590	$25,239	$39,903	$65,142
Refrigeration	Non-Res Refrigeration	376	76		850,619	750,539	7,914,330	4,411	$130,339	$78,203	$208,542
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensiv	28	4		44,511	37,664	327,960	185	$5,349	$19,550	$24,899
Other	Other	15			5,805	5,515	22,059	12	$2,010	$316	$2,326
SubTotal		72,164	2,766	2,882	11,343,718	10,034,126	129,563,049	77,554	$3,737,701	$2,568,479	$6,306,179
T&D	T&D										
Total		72,164	2,766	2,882	11,343,718	10,034,126	129,563,049	77,554	$3,737,701	$2,568,479	$6,306,179

EE Program Portfolio TRC Test	**1.54**

Excluding T&D

Energy Savings Targets 2011-2020



	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%

LASSEN MUNICIPAL UTILITY DISTRICT (LMUD)

History and Load Data

Lassen Municipal Utility District (LMUD) was established in 1988. It serves 10,500 customers (12,500 meters). 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 in load demands for LMUD between winter and summer. Its annual energy use is 131 gigawatt-hours. LMUD's annual power content is largely hydroelectric (depending on the time of year) due to the utility's power purchase contract with Western Area Power Administration and its base resource allocation from the Central Valley Project. The remaining power is mixed between various renewable and non-renewable power. 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 Lassen MUD Energy 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, refrigeration equipment, 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: LMUD provides rebates to customers who purchase and install ENERYGSTAR® appliances and energy efficient electric water heaters and solar water heaters. LMUD also provides a residential lighting program, providing rebates for replacing incandescent bulbs with CFL's along with a variety of other lighting incentives. LMUD also offers rebates for the installation of energy efficiency heat pumps, central air conditioning and evaporative coolers. Finally, LMUD incentivizes homeowners to invest in home weatherization (insulation, window treatments/replacements and duct sealing) through the residential rebate program.
- 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 HSPF/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 replacing existing T-12 fluorescent bulbs 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 FY2011

LMUD's energy reduction target for FY2011 was 375,000 kWh. They fell short of their annual goal with a total net energy reduction of 160,848 kWh.

LMUD's demand reduction target for FY2011 was 93.40 kW. They exceeded their annual goal with a total net demand reduction of 176 kW.

LMUD's EE program portfolio was delivered at a Total Resource Cost of 0.46 in FY2011.

FY2012 Forecast

LMUD's energy efficiency rebates were revised for FY2011-FY2013 based on the Measure Quantification Report issued by KEMA in December 2009. The FY2011-FY2013 energy efficiency program reflects a comprehensive suite of measures that are cost-effective based on the rebate level offered and the quantified savings in the KEMA report. LMUD's forecast indicates that the FY2012 target of 375,000 kWh will be met with a funding level of $430,000 for rebates and administration.

LMUD Evaluation, Measurement and Verification

LMUD undertook its first EM&V report in 2009/2010. The report focused on the program that produced the largest amount of savings during the year, the Keep Your Cool program. Keep Your Cool provided LMUD customer's refrigeration door gaskets, strip curtains and door closers at no cost to the customers. The evaluation indicated that the program was well received overall and that most demand and consumption savings figures were reasonable and close. The one exception was glass reach-in freezer auto-closers which appeared to indicate a discrepancy between kW demand reduction, kWh savings and reasonable hours of operation. That issue is under consideration for the upcoming year.

Utilities have the option of performing EM&V annually, or once every three years. LMUD will most likely perform the next EM&V in 2012/2013.

LASSEN MUNICIPAL UTILITY DISTRICT (LMUD)

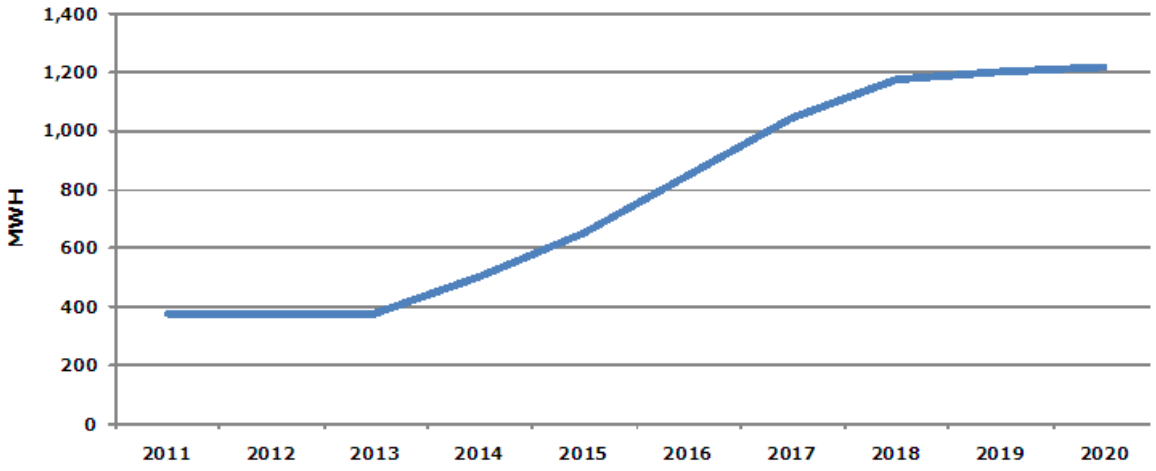
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Lassen		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	40	38	38	18,840	15,072	180,864	100	$1,400	$23,791	$25,191
HVAC	Res Cooling	52	20	19	4,033	3,181	65,597	40	$9,992	$8,974	$18,966
Appliances	Res Dishwashers	22	4	4	1,452	1,234	13,576	8	$770	$1,781	$2,551
Consumer Electronic	Res Electronics										
HVAC	Res Heating	66	19	19	16,370	11,459	206,261	104	$26,544	$12,698	$39,242
Lighting	Res Lighting	380	75	1	24,708	20,905	111,047	59	$2,625	$12,917	$15,542
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	84	2	2	14,564	10,923	151,594	82	$4,200	$18,349	$22,549
HVAC	Res Shell	29	8	8	6,455	3,709	74,181	47	$11,439	$12,390	$23,828
Water Heating	Res Water Heating	19			6,757	3,919	50,945	27	$3,999	$5,670	$9,669
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling										
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	4	3	3	46,017	39,114	430,259	238	$7,906	$28,827	$36,733
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	1	5	5	61,109	51,331	359,320	189	$14,906	$20,434	$35,340
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		696	176	100	200,303	160,848	1,643,643	895	$83,781	$145,832	$229,613
T&D	T&D										
Total		696	176	100	200,303	160,848	1,643,643	895	$83,781	$145,832	$229,613

EE Program Portfolio TRC Test	**0.46**

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

LODI ELECTRIC UTILITY (LEU)

- Established in 1910
- 28,935 customers (23,935 residential; 5,000 commercial/industrial; FY 10-11)
- Peak demand: 116 megawatts; occurs in: July daytime (FY 10-11)
- Annual Energy Use: 421,131,000 kilowatt hours (FY 10-11)

LEU Energy Efficiency Program Highlights

Since 1998, LEU has spent more than $8.3 million on demand-side management rebates and programs designed to increase energy efficiency for the community, resulting in a 18 percent peak demand reduction and an 16 percent energy reduction.

Current (FY 10-11) 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; rebates range from $250 to $7,500 for smaller to medium-sized customers.
- *Lodi Commercial/Industrial (G-3 to I-1) Rebate Program:* Provides rebates of up to $25,000 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 10-11) 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 (15+ 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 10-11) 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 10-11) School/In-Classroom Programs:

- *Lodi LivingWise Program:* Provides energy efficiency "kits" and manuals to 455 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 10-11) 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, second, third, and fourth year assessments of randomly selected programs and large rebates as part of the designed EM & V Plan. For the FY 10-11, projected energy savings were verified for five (5) large customer rebates (customized rebates) and for the Lodi Appliance Rebate Program; all were assessed in August of 2011. Note: LEU retained the services of Summit Blue/Navigant Consulting to assist in the creation of the aforementioned Lodi EM & V Plan, as well as the on-site, first, second and third year kWh savings verification processes. LEU utilized a different EM&V contractor, ERS, for the 2010-2011 FY EM&V assessment project.

Proposed LEU Energy Efficiency Programs and Services: (for 2011-2012)

- Maintain existing programs, while possibly expending additional Public Benefit Program funds on demand-side management rebates/incentives. We will add a refrigerator recycling program, as well as a new energy efficiency financing program.

LEU Demand Reduction Programs:

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

Economic Impacts on LEU Energy Efficiency Programs:

- During the 2010-2011 fiscal year, Lodi Electric Utility engaged more commercial/industrial customers in discussions pertaining to energy efficiency projects than in recent fiscal years (2008-2009 FY, 2009-2010 FY). We believe it is reflective of an improved state and national economy. Although some larger energy users continued to express concerns about the health of the economy, many did feel greater confidence in the years ahead. If the economy continues to improve, more investments will be made in energy efficiency.

LODI ELECTRIC UTILITY (LEU)

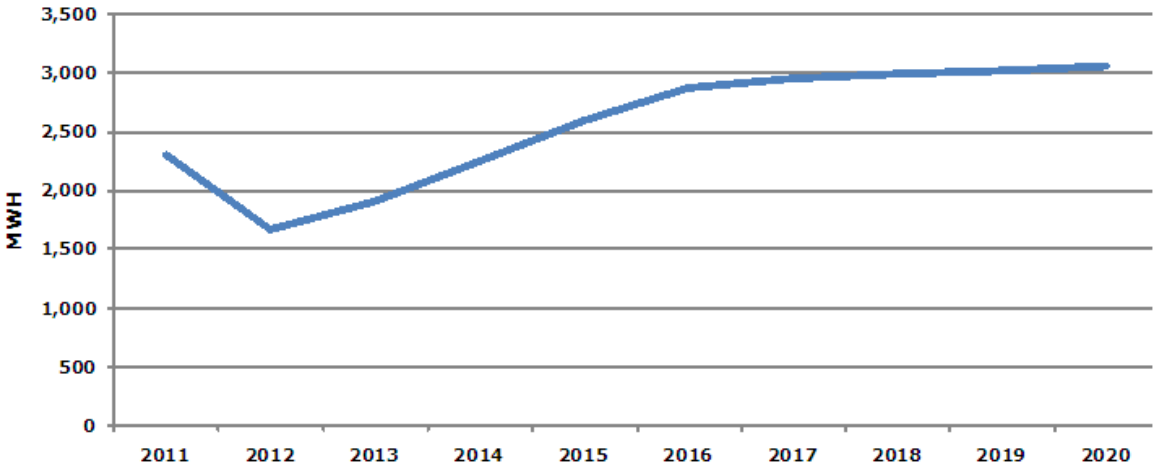
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Lodi		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	175	22	22	10,850	8,680	104,160	58	$8,650	$489	$9,139
HVAC	Res Cooling	320	46	50	23,876	18,621	291,964	180	$29,827	$2,637	$32,464
Appliances	Res Dishwashers	219	20	20	6,723	5,715	62,863	35	$5,475	$293	$5,768
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	1,479	1,864	28	289,166	595,704	2,838,262	1,515	$37,603	$9,597	$47,200
Pool Pump	Res Pool Pump	13	2	2	13,652	9,556	95,564	53	$3,920	$431	$4,351
Refrigeration	Res Refrigeration	152	14	14	108,246	81,185	1,136,583	617	$11,280	$4,929	$16,209
HVAC	Res Shell	548	138	138	38,160	29,243	629,281	361	$35,271	$3,492	$38,762
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	49	355	190	439,000	337,036	5,056,012	2,752	$37,252	$27,741	$64,993
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	107	337	315	1,976,524	1,583,126	18,238,755	10,090	$274,720	$87,553	$362,273
Process	Non-Res Motors	1	9	9	51,600	38,700	154,800	82	$7,500	$535	$8,035
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	113			177,458	150,766	603,065	318	$39,950	$2,090	$42,039
HVAC	Non-Res Shell	1	1	1	1,292	711	7,106	5	$194	$55	$249
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other	1	5	5	53,502	45,477	181,907	100	$8,025	$718	$8,743
SubTotal		3,178	2,812	793	3,190,050	2,904,519	29,400,322	16,164	$499,667	$140,558	$640,225
T&D	T&D										
Total		3,178	2,812	793	3,190,050	2,904,519	29,400,322	16,164	$499,667	$140,558	$640,225

EE Program Portfolio TRC Test	1.74

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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**: Provides a rebate to commercial customers who retrofit T12 to T8 fluorescent lighting that, for most businesses, will realize a 1.75 year payback. Or who replace incandescent lamps with hard-wired fluorescent fixtures with T-8 systems.
- **Exit Sign Rebate**: Provides a rebate of $15 to replace existing incandescent or fluorescent-lit exit signs with LED-lit signs, or $30 to replace the same signs with electro-luminescence signs. This rebate was first offered in 2002.

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
- **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.
- **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**: A rebate of $3.00 per watt is paid to electric customers who install a grid-tied photovoltaic system of 1 kw or larger in size. (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 efficient improvement not offered by other rebate programs.
- **Energy Audits:** Lompoc offers on-site energy and water audits for all customers or mail-in audit for residential customers. Customers receive money saving advice, a conservation kit that includes a CFL, refrigerator thermometer, water saving aerators and showerheads, a positive shut-off nozzle for outside watering, and learn about incentives designed wave water and electricity.
- **Equipment Loan:** The City has energy monitoring devices that can be borrowed to monitor energy usage of most appliances found in the average home.

Current Low Income Customer Programs:

- **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.
- **Income Qualifying Refrigerator Purchase Program:** For low-income customers, a payment of up to $635 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 an one-year. Of the $395 paid by the City, $50 is paid from energy efficiency funds and $345 is paid from low income Funds

Current Community Program:

- Education Programs: Lompoc encourages energy conservation through school and community education programs and presentations.
- The City offers electric safety programs through classroom presentations and community functions.

Proposed City of Lompoc Energy Efficiency Programs and Services:

- 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.
- Santa Barbara County has developed an AB811 financing program for property owners. The City works with the County and property owners to inform them of possible utilization of this funding mechanism to pay for energy efficiency and water efficiency improvements, and photovoltaic installations.

Energy Efficient Upgrades to City Facilities:
The City has contracted with the Chevron Energy Solutions Company to perform various energy efficient upgrades to City facilities that include lighting upgrades, HVAC system improvements, high efficiency pump installation at the water treatment plant and 141 kw solar. This projects is complete

System Upgrades:
Lompoc will continue the upgrade of all 4 kilovolts lines to 12 kilovolts distribution lines and continues to purchase 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 KW 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 received $165,000 of ARRA stimulus funding. One hundred thousand dollars ($100,000) will be used to retrofit existing street lighting from HPS to LED lighting. Sixty-five thousand dollars ($65,600) plus $30,000 from other funding was used to offer a rebate to commercial businesses to retrofit existing T12 lighting to more energy efficient lighting. Installation of occupancy sensors was included in this program.

Economic impact:

The downturn in the economy has affected customer willingness to spend money on energy efficient appliances. Even if the old appliance 'breaks down' and it is evident that 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. Since Lompoc offers rebates to replace working appliances, the number of willing customers to participate in our programs has decreased over the past two years.

This is also evident when approaching commercial customers to discuss the retrofit of the lighting. The rebate for the retrofit of lighting will pay for 85-95% of the cost to retrofit the existing fixtures to more energy efficiency lamps and ballasts, but still the City and contractors must convince the customer that the City will actually rebate to them what is proposed. Even though this will make the project payback six months or less, business owners are 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.

The only positive note is that customers are willing to install solar photovoltaic systems. The City is encouraging these systems by participating in an emPower Santa Barbara County (AB811 loan plan) for energy efficiency improvements and renewable energy systems installed on owner properties.

CITY OF LOMPOC

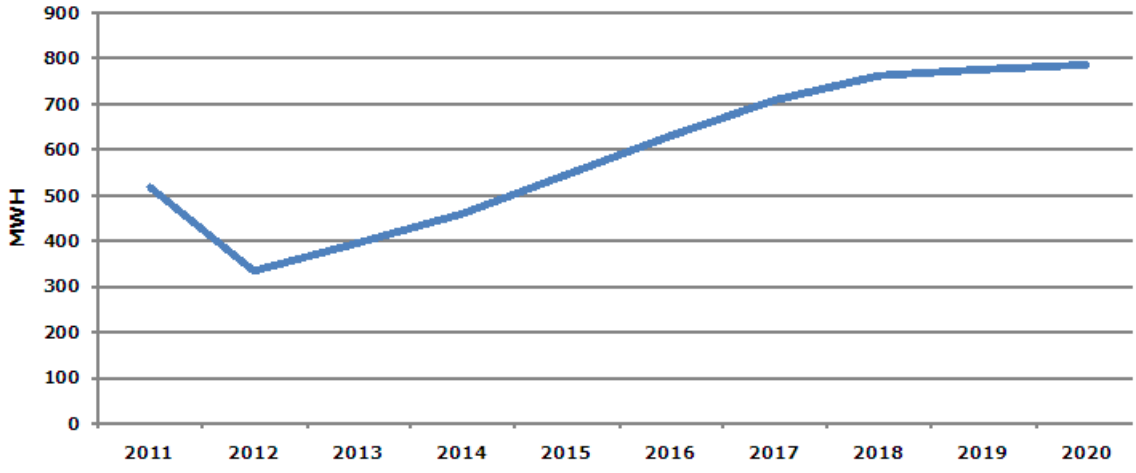
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Lompoc		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	355	53	1	17,326	14,727	74,806	40	$2,040	$1,348	$3,388
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	74	4	4	30,262	20,320	200,194	109	$6,998	$4,292	$11,290
HVAC	Res Shell										
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive	132	1	1	3,432	2,746	8,237	5		$158	$158
Process	Non-Res Cooking										
HVAC	Non-Res Cooling										
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	1,824	11	29	54,541	42,901	496,635	275	$18,842	$12,000	$30,842
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	11	2		2,267	1,927	10,795	6	$259	$202	$461
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		2,396	71	34	107,828	82,620	790,666	434	$28,139	$18,000	$46,139
T&D	T&D										
Total		2,396	71	34	107,828	82,620	790,666	434	$28,139	$18,000	$46,139

EE Program Portfolio TRC Test	0.91

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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 4.1 million people via 1.46 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 6177 MW was registered in the summer of 2010.
- Annual energy use is 24.6 million megawatt-hours.
- 9,232 employees.
- The 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 2010-2011 totaled $288.3 million.
- These programs achieved peak demand reduction of 292.5 MW and 1,085.1 GWh of energy savings during this period.
- The average life cycle cost of these savings was $0.024/kWh.
- The savings are based upon estimation methodologies approved for use by both Investor Owned Utilities (IOU) and Publicly Owned Utilities (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.

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

LADWP is currently in the process of renewing services of an independent third party to evaluate its energy efficiency programs. During 2011, the incumbent firm completed assessments of energy efficiency projects done in fiscal year 2009-2010 (July 1 – June 30). Projects reviewed represent a random sampling from the LADWP's energy efficiency program portfolio, with a focus on non-residential programs.

LADWP plans to continue evaluation, measurement and verification activities through 2015, with an emphasis on improving evaluation criteria, sampling methods, and depth of program evaluation and transparency of annual EM&V reports to be completed over the 2011 through 2014 fiscal years. LADWP plans on following the POU EM&V Guidelines developed by the CEC and is working closely with the CEC to improve its EM&V program.

Overview of LADWP's FY 2009-2010 Energy Efficiency Programs

Commercial Customer Programs: Total Non-Residential Program expenditures: $41.7 million resulting in 17.5 MW of peak demand reduction and 114.1 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. Program is largely vendor-driven.

- Chiller Efficiency Program: Provides rebates to retrofit existing buildings with high-efficiency electric chillers. 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: 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 Use Assessments: On-site energy assessments 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: $7.8 million resulting in 1.87 MW of peak demand reduction and 13.1 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 $50 for each recycled refrigerator.

- Low-Income Refrigerator Exchange Program: Provides new energy-efficient refrigerators to low-income customers in exchange for their existing inefficient older models.

- Home Energy Saver On-Line Audit: Web-based energy audit analyzes energy use and makes recommendations for efficiency opportunities.

Proposed FY 2011-2012 LADWP Energy Efficiency Programs and Services

Commercial Customer Programs: Total Non-Residential Program budget: $32.3 million resulting in a projected 26.1 MW of peak demand reduction and 135.5 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 and Reduced Wattage 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, with differing incentive rates established for three categories of efficiency measures (lighting, HVAC, other).

- 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.

- Financing Program: Ongoing low-interest loan program for the installation of energy efficient equipment in City facilities.

- Energy Use Assessments: Continued offering of free on-site energy assessments 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: $25.8 million resulting in a projected 4.2 MW of peak demand reduction and 23.7 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.).

- Refrigerator Recycling: Ongoing program provides free pick-up and recycling of old, inefficient refrigerators, along a cash incentive of $50 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 continued expansion to apartment owners.

- Home Energy Saver Online Audit: Ongoing availability of web-based energy audit; analyzes energy use and makes recommendations for efficiency opportunities.

Note: FY10/11 figures have not been audited and reporting includes previous year expenditures for projects concluded during FY10/11

Demand Side Management Programs Update

Potential Study 2010

LADWP has completed a new Energy Efficiency Potential Study providing the basis for updating energy efficiency targets as well as identifying programs to consider implementing to achieve these goals.

Pursuant to the requirements of AB 2021, LADWP developed and submitted its second set of Board-approved energy efficiency savings goals to the CEC, as follows:

FY	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20
GWH	271	291	296	266	116	108	126	224	222	240
MW	36	40	42	40	23	22	24	36	37	41

These updated goals, based on the findings of the new Energy Efficiency Potential Study, were approved by Resolution No. 012-110 of LADWP's Board of Commissioners on December 6, 2011.

The Study of Energy Efficiency and Demand Response Potential, prepared for LADWP by Global Energy Partners LLC, noted that ever-tightening codes and standards were likely to reduce the energy savings potential of utility incentive programs. The long-term savings trend will begin to move higher as new technologies become cost-effective for LADWP program implementation.

LADWP ARRA Grant Activities

LADWP received an allocation of $8 million from the City's $ 37 million Energy Efficiency and Conservation Block Grant, to be used for energy efficiency programs and measures. These include:

- Incentives for commercial building retro-commissioning
- Rebates for residential whole house fans and cool roofs
- Energy efficiency audit/retrofit program for non-profit agencies
- Community outreach by non-profit agencies
- Rebates for residential whole-house retrofit measures (Energy Upgrade California)

LADWP also received ARRA grant funds through the California Department of Community Services and Development for the development and implementation of a low income residence weatherization assistance program.

LOS ANGELES DEPT OF WATER & POWER (LADWP)

Time Period for Reporting Data: Fiscal Year ending 6/30/2011

LADWP		Resource Savings Summary						Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	6,419	668	631	377,696	302,157	5,164,068	$618,891	$90,536	$709,428
Appliances	Res Dishwashers									
Consumer Electronics	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump	796	78	78	692,400	477,756	4,777,563	$397,816	$48,442	$446,258
Refrigeration	Res Refrigeration	23,226	1,134	1,134	17,496,378	12,296,635	122,942,053	$6,501,836	$125,532	$6,627,368
HVAC	Res Shell	158	25	25	68,124	37,468	749,364	$31,539	$13,685	$45,224
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	26,622,343	2,847	2,847	36,776,562	25,743,593	283,070,561	$4,237,383	$4,315,232	$8,552,615
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	4,451,980	10,531	10,531	71,232,042	50,405,090	548,948,385	$12,564,669	$8,092,690	$20,657,359
Process	Non-Res Motors	329,710	36	36	329,710	230,797	3,461,955	$26,377	$54,785	$81,162
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	1,548,073	1,840	2,230	19,040,257	15,015,166	60,064,895	$1,146,381	$512,503	$1,658,884
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive	27,082,098	1,886	1,886	31,793,067	22,737,513	300,780,872	$6,230,187	$4,520,715	$10,750,902
Other	Other									
SubTotal		60,064,803	19,045	19,397	177,806,237	127,246,175	1,329,959,715	$31,755,079	$17,774,121	$49,529,200
T&D	T&D									
Total		60,064,803	19,045	19,397	177,806,237	127,246,175	1,329,959,715	$31,755,079	$17,774,121	$49,529,200

Period for Forecast Data: Fiscal Year ending 6/30/2012

LADWP 1112		Resource Savings Summary					Cost Summary			
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Utility Incentives Cost ($)	Utility Direct Install Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers									
HVAC	Res Cooling	1,045	52,839	111	59,890	846,790	$ 90,283		$ 10,479	$ 100,763
Appliances	Res Dishwashers									
Consumer Electronic	Res Electronics									
HVAC	Res Heating									
Lighting	Res Lighting									
Pool Pump	Res Pool Pump	259	17	17	66,511	665,112	$ 129,500		$ 5,635	$ 135,135
Refrigeration	Res Refrigeration	36,414	3,815	3,815	23,455,617	367,704,050	$ 722,265	$ 12,051,700	$ 2,999,965	$ 15,773,930
HVAC	Res Shell	18,782	79	277	96,757	1,472,922	$ 9,004,111		$ 779,502	$ 9,783,613
Water Heating	Res Water Heating									
Comprehensive	Res Comprehensive									
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	7,591	2,262	2,262	8,986,903	160,771,421	$ 4,744,023		$ 1,493,103	$ 6,237,126
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	355,370	6,656	6,657	35,765,153	364,334,351	$ 5,100,000		$ 3,017,696	$ 8,117,696
Process	Non-Res Motors	53,975	6,995	6,995	23,317,267	349,758,998	$ 3,277,911		$ 2,672,433	$ 5,950,344
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	2,069	356	356	3,115,345	49,845,517	$ 500,000		$ 385,834	$ 885,834
HVAC	Non-Res Shell									
Process	Non Res Process									
Comprehensive	Non Res Comprehensive									
Other	Other	4,425,490	5,010	5,010	67,835,775	824,072,407	$ 6,393,366		$ 6,129,404	$ 12,522,770
SubTotal		4,900,994	78,029	25,499	162,699,217	2,119,471,569	$ 29,961,459	$ 12,051,700	$ 17,494,051	$ 59,507,210
T&D	T&D									
Total		4,900,994	78,029	25,499	162,699,217	2,119,471,569	$ 29,961,459	$ 12,051,700	$ 17,494,051	$ 59,507,210

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, industrial and institutional programs:

- **Commercial/Industrial Lighting Program:** The Commercial Lighting Program is a turnkey lighting retrofit rebate program with a financial rebate menu for energy saving lighting equipment retrofits. The menu includes generous rebates for the replacement of T-12 lamps, Metal Halide Fixtures, Incandescent Lighting, and Exit Signs. The program also provides rebates for the addition of lighting controls including Photocells and Occupancy Sensors.
- **Commercial/Industrial Mechanical Equipment Program:** The Commercial/Industrial Retrofit Program is a turnkey mechanical equipment rebate program with a financial rebate menu for energy saving mechanical equipment retrofits. The menu includes generous rebates for the replacement of mechanical equipment with more energy efficiency equipment including: Refrigeration Equipment, Air Conditioning Equipment, Chillers, Motors, and Pumps. The program also provides rebates for Variable Frequency Drives on pumps, motors, and fans. Rebates are also available for Cooling Load Reduction measures to include Duct Sealing, Cool Roofs, Window Film, and Programmable Thermostats.
- **Customized Commercial/Industrial Retrofit Program:** The Customized/Industrial Retrofit Program enables qualifying commercial and industrial customers to apply for financial incentives on more specialized and comprehensive energy saving measures that do not fall under the Commercial Lighting Program or the Mechanical Equipment Retrofit Program. Applications for this program are evaluated and approved on an individual per application basis. Financial incentives for qualifying customer projects are paid for annual kilowatt hour savings in a one year period on approved projects.

Current Residential Customer Programs:

- **Residential Rebate Program:** This program encourages residential customers to purchase EnergyStar® labeled products, home appliances and energy-efficient compact fluorescent light bulbs.
- **Appliance Recycle Program:** This program allows residential customers to receive a $35.00 rebate for recycling qualified refrigerators or freezers.
- **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.

Solar Incentive Program

The Solar Incentive Program provides financial incentives to qualifying customers to buy down installed solar generation projects and to help offset the customer's investment in renewable energy generation. The rebate incentive is equal to the estimated performance of the installed solar system multiplied by $2.80/wattAC. The rebate incentive for commercial/industrial solar systems are capped at $70,000 (25kW) and $8,400 (3kW) for residential.

MERCED IRRIGATION DISTRICT

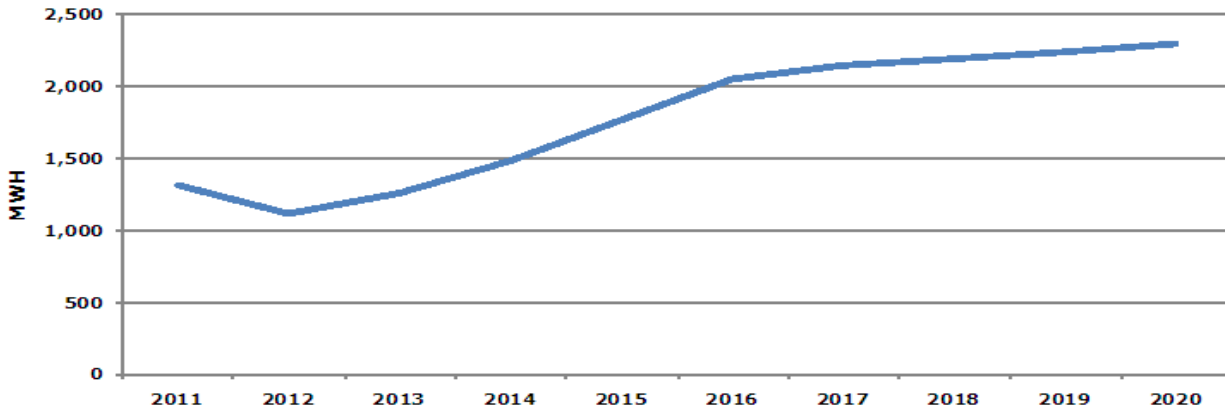
Time Period for Reporting Data: Calendar Year ending 12/31/2011

Merced		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	76	10	10	4,712	4,005	48,062	27	$5,700	$601	$6,301
HVAC	Res Cooling	5			40	32	640		$500	$13	$513
Appliances	Res Dishwashers	9	1	1	276	221	2,431	1	$675	$30	$705
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	30	1	1	7,100	5,396	79,843	43	$1,260	$825	$2,085
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	68	1	1	10,814	7,660	88,939	48	$6,725	$1,014	$7,739
HVAC	Res Shell	6	1	1	288	230	5,760	3	$8	$73	$81
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling										
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	186	8	8	2,017,782	1,714,957	18,870,750	10,458	$226,920	$243,600	$470,520
Process	Non-Res Motors	4			1,692,605	1,269,454	5,077,815	2,700	$123,995	$49,594	$173,589
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	55	1	1	374,860	318,631	1,274,524	672	$24,916	$12,488	$37,404
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		439	24	23	4,108,477	3,320,586	25,448,764	13,953	$390,699	$308,237	$698,936
T&D	T&D										
Total		439	24	23	4,108,477	3,320,586	25,448,764	13,953	$390,699	$308,237	$698,936

EE Program Portfolio TRC Test	2.23

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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.

Energy Efficiency Program Highlights

2010 Residential Customer Programs

- Overall: Paid over $645,000 in customer rebates and contractor costs for the installation of energy efficiency measures in homes. The net peak load reduction was over 450 kW and net annual energy savings was over 770 MWH.
- MPower Home: Eligible measures included air conditioners, duct sealing, whole house fans, CFLs, washers, radiant barriers, insulation, and window film/screen.
- LIEE / Weatherization: Eligible measures included low flow showerheads, CFLs, shade screens, minor home repair and refrigerator replacement. The program also provides education, information and community outreach for low and moderate-income customers.
- Windows of Hope: Collaboration with Habitat for Humanity to fund the replacement of old inefficient windows with new energy efficient windows for low and moderate income homeowners.
- Thermostat Program: Provides at no charge either installation of large display thermostats, voice activated thermostats, remote controlled thermostats, for low income disabled customers.
- Shade Trees: Working in partnership with other area agencies, MID provides shade trees and planting support to low to moderate income homeowners.

2010 Non-Residential Customer Programs

- Overall: Paid over $700,000 in rebates for the installation of energy efficiency measures in businesses. The net peak load reduction was over 1,300 kW and net annual energy savings was over 11,000 MWH.
- MPower Business: Eligible measures included air conditioners, lighting, refrigeration, window film/screen, motors and computing.
- MPower Custom: Eligible measures included air compressors, chiller, cooling towers, VFDs, insulation and EMS.
- MPower Commercial New Construction: Eligible measures included air conditioning, lighting, insulation, cooking, skylights and process cooling.

- Energy Efficiency Workshops – Each year MID host technology workshops to demonstrate the best practices in energy efficiency to our commercial customers. The 2011 workshop focused on advanced lighting technologies and controls.
- Tool Lending Library – MID provides an array of technical tools for commercial customers to assist them in evaluating energy saving opportunities. Tools include IR camera, ultrasonic leak detector, and lighting loggers, plug in power monitors, 3-phase power monitors and much more.

2012+ 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
- Develop a commercial LED down light program for 2012
- Expand Facebook and Twitter marketing of energy efficiency programs

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 2011:

- STEP: Bill discounts of over $281,000 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 10 MW.
- Interruptible Rate: Bill discounts of over $330,000 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.
- Smart Thermostats: Completed lab tests of Smart Thermostats. Pilot deployment scheduled for 2012.

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. 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. Energy efficiency funding from public benefits and procurement in 2011 was approximately **$1,317,000** and **$1,356,000**, respectively.

Evaluation, Measurement & Verification (EM&V) Activities

In 2011, MID made continued efforts to obtain independent, third-party review of its EE programs. MID hired Power Services, Inc. (CVMP qualified) to perform M&V on selected 2011 projects, the scope of which encompassed process cooling, insulation, lighting, duct sealing and compressed air. In 2011, MID hired Robert Mowris and Associates to conduct M&V on MID's 2011 energy efficiency programs. The report of their findings will be available by April 2012.

Smart Grid Activities

MID continued its development of a smart grid. MID has 100% advanced metering infrastructure (AMI) implemented across its service area, which exceeds 100,000 meters. MID installed equipment at one substation for its distribution system automation project that is intended to control end-of-line voltage. These projects received approximately $1.5 million ARRA Smart Grid Investment Grant. In addition, MID prepared and adopted a Smart Grid Deployment Plan (per SB17). For 2012, MID will continue implementing the SGIG funded projects.

MODESTO IRRIGATION DISTRICT

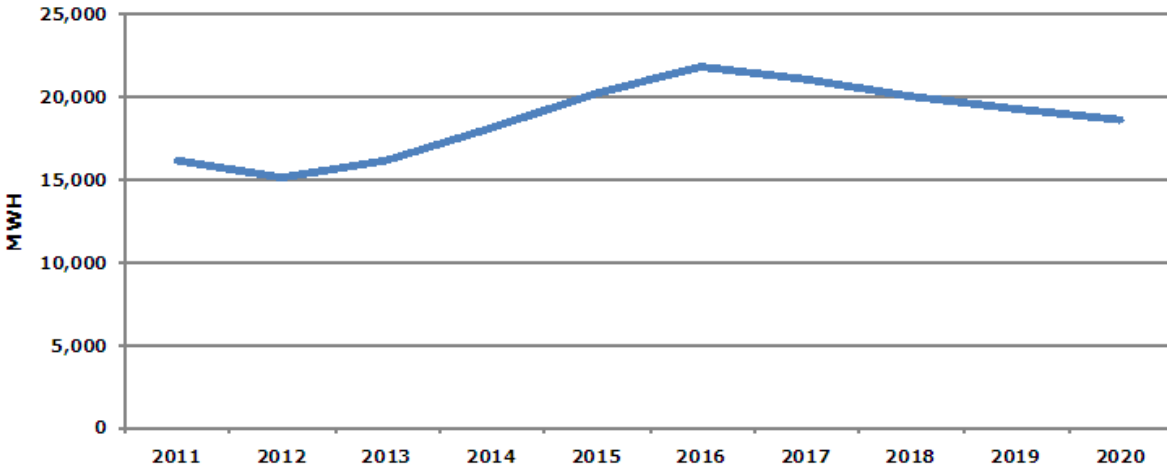
Time Period for Reporting Data: Calendar Year ending 12/31/2011

Modesto		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	622	84	84	38,564	32,779	393,353	217	$21,770	$8,633	$30,403
HVAC	Res Cooling	841	185	158	151,406	126,826	2,318,580	1,435	$230,636	$92,737	$323,373
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics	90			6,750	6,750	101,250	56	$15,443	$3,301	$18,744
HVAC	Res Heating										
Lighting	Res Lighting	5,458	223	30	220,550	202,672	1,211,103	647	$54,819	$28,616	$83,436
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	422	34	34	336,849	246,140	2,318,195	1,258	$160,926	$61,411	$222,336
HVAC	Res Shell	890	160	160	211,992	144,436	2,190,585	1,329	$158,812	$69,235	$228,047
Water Heating	Res Water Heating	300			14,423	13,975	135,044	72	$5,354	$3,746	$9,100
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	265	82	68	94,353	75,482	1,132,236	663	$35,923	$13,726	$49,649
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	24,253	1,194	1,058	9,545,646	8,068,036	88,669,836	49,032	$429,900	$771,420	$1,201,320
Process	Non-Res Motors	2	99	3	529,888	423,910	6,358,656	3,381	$37,092	$49,385	$86,477
Process	Non-Res Pumps	4	21	21	215,058	161,294	2,419,403	1,276	$13,830	$17,729	$31,559
Refrigeration	Non-Res Refrigeration	13,904	179	186	2,555,492	2,086,231	24,036,336	12,672	$169,320	$181,208	$350,528
HVAC	Non-Res Shell	2,710	4	4	46,073	36,858	368,580	205	$2,033	$3,110	$5,142
Process	Non Res Process	3	7	6	40,187	21,344	320,155	170	$5,347	$2,440	$7,786
Comprehensive	Non Res Comprehensive	1,474	29	29	294,800	294,800	1,474,000	777	$14,740	$10,160	$24,900
Other	Other										
SubTotal		51,239	2,302	1,841	14,302,030	11,941,532	133,447,311	73,189	$1,355,945	$1,316,857	$2,672,803
T&D	T&D										
Total		51,239	2,302	1,841	14,302,030	11,941,532	133,447,311	73,189	$1,355,945	$1,316,857	$2,672,803

EE Program Portfolio TRC Test	**2.13**

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

MORENO VALLEY UTILITY

- The City of Moreno Valley incorporated in 1984 and 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 5,600 customers. Residential customers comprise the majority of the energy customers, however, residential energy sales account for less than 34% of total sales.
- All customers' facilities are seven years old or less, occupying buildings that meet Title 24 requirements. This results in a lower Energy Efficiency Potential.
- Peak Demand: 29.19 megawatts
- Annual Energy Use: 97.3 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 10/11, Moreno Valley spent approximately $41,260 in incentives to increase energy efficiency for the community. This amount was spent on customer incentive payments, and lighting and building envelope upgrades for municipal facilities.

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: Provides customers with a variety of recommendations for reducing energy consumption, when requested. Audits can be 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 300,000 kWh, which resulted in incentives of $4,981 for FY 10/11.
- Residential Energy Efficiency Programs: MVU held direct-to-customer CFL Giveaways during the reporting period.
- Municipal Facility Energy Efficiency Projects: Following an audit of municipal facilities and funding resources of the EECBG Recovery Act, Energy Efficiency upgrades were completed at City of Moreno Valley City Hall. Under MVU'S Energy Efficiency Program, this resulted in an incentive of approximately $36,000.

Proposed Energy Efficiency Projects and Services: (2011-12)

- Residential Energy Efficiency Programs: All homes within the service territory are less than eight years old, 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, Energy Star® rated electric appliance rebates and Whole-house Home Energy Rating 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 Property Assessed Clean Energy (PACE) Financing for Renewable Energy Distributed Generation and Energy Efficiency Improvements. WRCOG implemented programs for residential and commercial projects in late 2011.
- Energy Efficiency Projects: MVU is continuing to work with some of its large customers to explore projects that reduce annual energy consumption and reduce peak demand significantly.
- Highland Fairview Corporate Park: Highland Fairview developed a 1.8 million square foot distribution warehouse which is under application for LEED certification. MVU is continuing to work with Highland Fairview in maximizing energy efficiency on all their future projects in this area.

Demand Reduction Programs:

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

Evaluation, Measurement and Verification:

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

MORENO VALLEY UTILITY

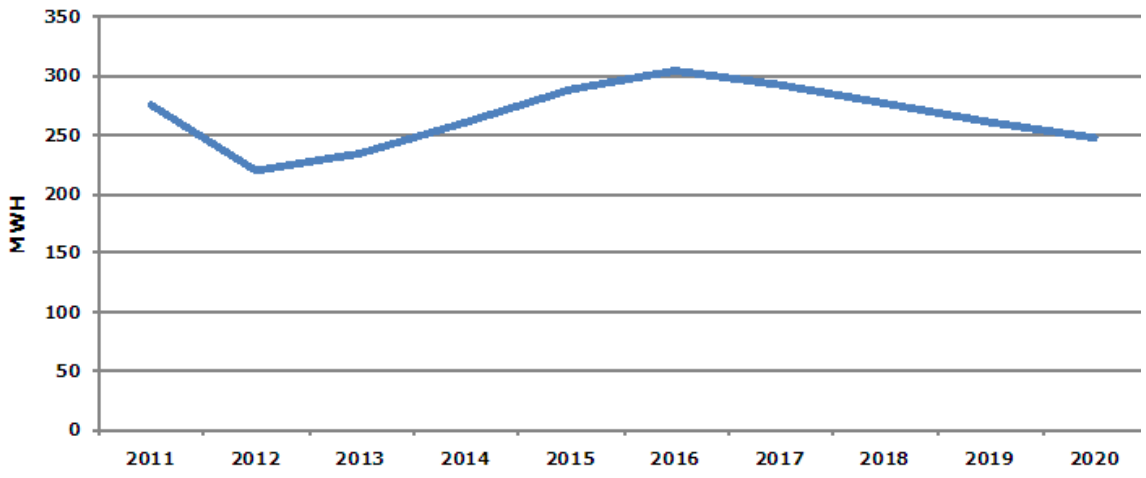
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Moreno Valley		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	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	1,976	81		318,988	318,988	3,189,880	1,889	$25,352		$25,352
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration										
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive	2			218,745	120,310	1,203,098	713	$15,909		$15,909
Other	Other										
SubTotal		1,978	81		537,733	439,298	4,392,978	2,602	$41,261		$41,261
T&D	T&D										
Total		1,978	81		537,733	439,298	4,392,978	2,602	$41,261		$41,261

EE Program Portfolio TRC Test	4.82

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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 2,984 meters, serving 2,474 residential customers, 464 commercial customers, 37 commercial demand customers, and 4 master metered and 1 municipal customers.
- Total residential and commercial usage was 55,085,553 kilowatt hours in FY2011, an increase of 861,437 kilowatt hours or 1.589% from the previous year
- Total energy sales are 56,195,549 kilowatt-hours (FY 2010-11); 48.98 percent is residential sales, 51.01 percent is commercial and the remainder is master metered and municipal sales.
- Approximately 45% of Needles power comes from hydroelectric
- Peak demand is 19.1 megawatts, with a 37 percent load factor
- 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

Needles' energy efficiency programs are designed to reduce the summer air conditioning loads and increase the annual load factor. The City has historically budgeted $150,000 since the enactment of AB 2021 for energy efficiency programs and will allocate additional funding if customer demand is greater than the program allocation**.**

The $150,000 is funded by ratepayers via a line item on their electric bill (California Conservation at $0.0037/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 payers apply for weatherization through the San Bernardino Community Action Coalition ("HEAP"). If the ratepayer passes the means-testing for weatherization (federal poverty guidelines apply) he/she automatically qualifies for the appliance change-out.

Residences with low income tenants are supported by landlord participation at 10% of equipment cost. Those saved dollars are put toward additional appliance switch-outs. Most of the housing stock in Needles is 50-75 years old. Making the home more air tight improves energy efficiency. A good number of 3-phase air conditioners have been replaced thus reducing line losses.

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**.**

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 2011-12)**

Maintain existing programs at current levels and monitor effectiveness for potential expansion (finances allowing). Planned activities include continuation of the *"Get a Tree for Free"* program whereby, the City will fund $2,500.00 ($25.00 per tree plus sales tax) to have residents purchase up to 3 trees each at the local nursery. Once they bring their sales slip in and Code Enforcement verifies that the trees have been planted on the appropriate elevation of the home to optimize shade value, the customer's electric bill will be credited for the amount that the resident paid for the tree(s).

City of Needles Demand Reduction Programs:

The City of Needles demand reduction program reduction target calls for 0.2mW for FY 2011-12.

CITY OF NEEDLES

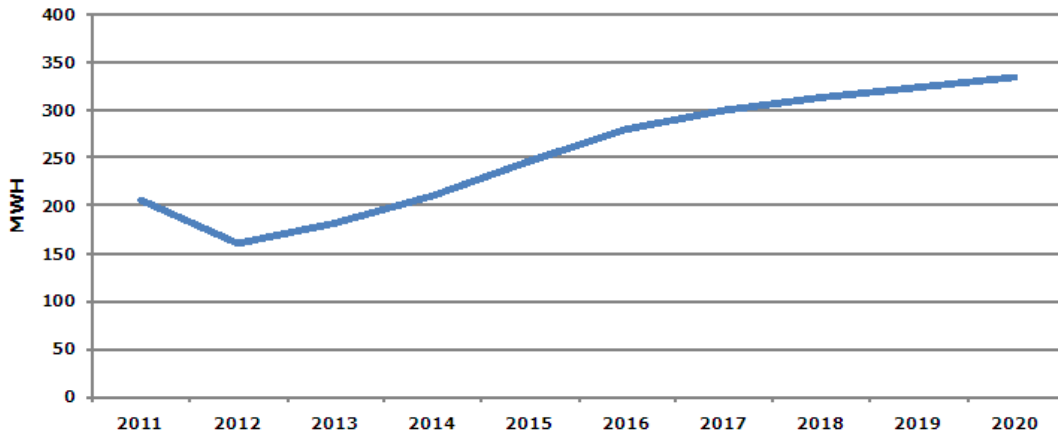
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Needles		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling	32	3	7	6,239	6,239	112,299	71	$150,000		$150,000
Appliances	Res Dishwashers										
Consumer Electronic	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		32	3	7	6,239	6,239	112,299	71	$150,000		$150,000
T&D	T&D										
Total		32	3	7	6,239	6,239	112,299	71	$150,000		$150,000

EE Program Portfolio TRC Test	4.29

Excluding T&D

Energy Savings Targets 2011-2020



	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%

CITY OF PALO ALTO UTILITIES

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. It serves about 29,000 electric customers. It has a peak load of 189 megawatts with sales of about 1,040 gigawatt hours annually. CPAU successfully met its Fiscal Year 2011 efficiency savings goals for electricity and natural gas. CPAU has many demand-side management goals for all its utilities that are designed to support the City's environmental and sustainable policies.

This achievement is attributed to the increased number of programs available for all customer types, as well as an expansion of programs administered by third party agencies. Such third party program administration enhances the City's ability to set and achieve greater efficiency goals while freeing up staff and other resources for additional programs and projects.

DEMAND SIDE MANGEMENT IN PALO ALTO DURING FISCAL YEAR 2011

The City of Palo Alto Utilities (CPAU) is pleased to issue this summary of the energy efficiency and water conservation activities, also called Demand Side Management (DSM), completed in Palo Alto during the Fiscal Year ended June 30, 2011 (FY 2011). CPAU is committed to supporting environmental sustainability through reduced consumption of electric, gas and water resources. This is accomplished through the ongoing delivery of innovative cost-effective customer programs, services and incentives.

HIGHLIGHTS OF THE PAST YEAR

There was a substantial increase in the electric, natural gas and water savings goals requiring the addition of seven new and expansions to existing programs to achieve these higher objectives. A summary of major initiatives includes:

- Delivery of the **Home Energy Reports** to about 19,000 residents, comparing electric and natural gas usage with a group of 100 similar homes. This resulted in significant savings (pre-evaluation) of about 2% for natural gas and 2.5% for electric use.
- A **zero interest loan financing program** for businesses and non-profits implementing electric efficiency. Another pending program will allow "12 months same as cash" financing for residential natural gas upgrades through an approved contractor network.
- **Marketing of innovative programs** showcasing new technologies, such as LED lights, through new tools such as Facebook, contests and other venues.
- **Adding programs for the hospitality industry, commercial kitchens and laboratories** while expanding other business and residential programs into new areas and with additional funding.

GOALS AND ACHIEVEMENTS

Electric

The 2010 Ten-Year Electric EE Plan has a cumulative goal to reduce electric consumption by 7.2% as a direct result of utility programs by 2020. Only savings that are above the minimum efficiency level required by California building and appliance standards can be counted towards the utility EE goals. Programs are on target and continue to increase as a percentage of sales each year. Goals will be updated again by the end of calendar 2012.

Table 1: Electric Savings Versus Goals

Year	Annual Savings Goal	Savings Achieved
FY 2008	0.25%	0.56%
FY 2009	0.28%	0.47%
FY 2010	0.31%	0.55%
FY 2011	0.60%	0.70%
FY 2012	0.65%	*In progress*

Gas

Ten-year goals for natural gas are a reduction in expected gas use of 5.5% by 2020. This reduction is program-driven and must come on top of what reductions may naturally occur. Businesses did not participate in programs nearly as much as the last two years, likely due to continuing effects of the downturn. However, goals were exceeded due to significant savings from the Home Energy Reports—over 2% reported by the vendor. Due to the fact that this program has yet to be evaluated, staff reduced the estimated savings by 50%. It is possible that higher savings were actually achieved.

Table 2: Gas Savings Versus Goals

Year	Annual Savings Goal	Savings Achieved
FY 2008	0.25%	0.11%
FY 2009	0.28%	0.28% (adj.)
FY 2010	0.32%	0.40%
FY 2011	0.40%	0.55%
FY 2012	0.45%	*In progress*

Water

The 2010 Urban Water Management Plan includes water reduction goals of 20% by 2020, based on a benchmark year. A reassessment of expected savings from several non-residential programs, as well as a region-wide drop in commercial participation, similar to the natural gas utility, reduced reported savings achievements this fiscal year.

Table 3: Water Savings Versus Goals

Year	Annual Savings Goal	Savings Achieved
FY 2008	0.34%	0.72%
FY 2009	0.34%	0.98%
FY 2010	0.34%	1.35%
FY 2011	0.90%	0.47%
FY 2012	0.91%	*In progress*

ENERGY AND WATER EFFICIENCY AS A RESOURCE

CPAU is committed to identifying and promoting all cost-effective energy and water efficiency technologies that are less expensive than purchasing additional supplies of the various commodities. The table below summarizes purchase costs for supply and efficiency on a unit basis by commodity.

Table 4: Supply and Efficiency Costs

		Per Unit Costs			
		FY 2009	**FY 2010**	**FY 2011**	**Future**
		Effic.	Effic.	Effic.	Supply
Water	$/CCF	$4.57	$ 3.07	$3.83	$ 4.77
Gas	$/therm	$0.496	$0.408	$0.276	$ 0.58
Electri	$/kWh	$0.0465	$0.0638	$0.056	$ 0.11

PLANS FOR THE FUTURE

Seeking new program opportunities, after a Request for Proposals, several new and updated programs were added to the portfolio, as well as a pilot Demand Response Program. In addition to these new programs for the FY 2012 program year, CPAU continues to look for new and innovative ways to assist customers in implementing energy and water saving measures in the future.

DEMAND SIDE MANAGEMENT PROGRAM PORTFOLIO

DSM programs help customers reduce water, natural gas and electricity usage by incentivizing efficiency improvements, promoting behavior modifications and promoting on-site renewable generation.

OVERALL PORTFOLIO GOALS

- Meet or exceed Council-approved usage reduction goals
- Encourage all customers to reduce resource use in cost-effective, convenient ways.
- Promote testing, evaluation and implementation of innovative technologies and program designs through demonstration projects and pilot programs.
- Enhance program marketing to harder-to-reach customers, such as small businesses, renters and low-income residents.
- Engage in ongoing program evaluation and incorporate identified improvements.
- Provide comprehensive programs via increased coordination with the requirements, programs and services of other City departments and outside agencies.

PROGRAM DEVELOPMENT GUIDELINES

- Evaluate overall cost-effectiveness--program cost-effectiveness may be based on savings from a single commodity or on the combined impact of multiple commodity savings. Less

cost-effective promotions can be appropriate for limited times as a means to expose customers to more expensive emerging technologies (e.g. LED lighting).

- Design program parameters to be as compatible as possible with those of similar programs in surrounding communities—regional design similarity lessens confusion for customers and contractors.
- Target low-income customers—encourage greater involvement with services, such as free direct installations.
- Do not offer incentives for equipment which solely adds to the resource load—e.g. no rebates are offered for new air conditioners installed where none existed before.
- Balance program funding for residential and non-residential customer classes in proportion to their relative consumption levels. However, all customer classes should be offered some level of financial incentives, psychological motivation and education on technology benefits.
- Screen programs for effectiveness and adjust budgets annually to optimize methods for achieving goals. Re-assess long-term efficiency potential every three years.
- Monitor and evaluate developing technologies and external market activities which promote efficiency and incorporate them into program design, as appropriate.

CUSTOMER-SIDE RENEWABLE GENERATION

CPAU offers programs which incent customers to install both solar electric or photovoltaic (PV) and solar water heating (SWH) systems. Both programs are governed by state law in regard to development, implementation and administration. These customer-side generation systems are not included in the utility's Renewable Portfolio Standard (RPS) supply requirements. As Table 13 indicates, the number of systems installed has been consistently below target, especially during the last two fiscal years, when the recession meant that fewer customers were able to make large capital improvements to their homes and/or businesses. This reduced level has continued even though the cost to actually install systems, especially PV, continues to fall and payback periods improve.

Table 5: Customer-Side Renewable Energy Program Achievements Versus Goals

Year	Program	Renewable Goals	Number of Systems;
FY2009	PV	650 kW	57 Systems; 340 kW
	SWH	30 Systems	12 Systems
FY2010	PV	650 kW	53 Systems; 313 kW
	SWH	30 Systems	7 Systems
FY2011	PV	650 kW	47 Systems; 493 kW
	SWH	30 Systems	10 Systems
Total to 2017	PV	7,000 kW	3,044 kW since 2001
	SWH	300 Systems	34 to date since 2008

PROGRAM ACHIEVEMENTS

FY 2011 achievements for selected CPAU incentive and educational programs are in below.

Table 6: Achievements by Program

Program	Applications	Rebate $	Gross	Savings Peak	Therms/	CCF/Yr
Efficiency Programs						
Residential Smart	7,085	$163,983	1,038,738	0	35,795	15,498
REAP	67	$240,920	323,291	0	11,526	
New Construction	5	$3,630	3,068	0	2,431	
Commercial Advantage	29	$154,492	1,910,333	13	5,009	
Right Lights+	46	$335,740	3,213,412	436	0	
Enovity	3	$117,020	1,045,600	78	9,800	
Home Energy Report	1		420,000	0	92,639	
T&D	1		288,643	0	0	
SCVWD	6	$1,200	546	0	7,441	7,911
Efficiency SubTotal:	**7,243**		**8,243,632**	**526**	**164,640**	**23,409**
Renewable Programs						
New systems/rebates						
Solar Water Heating	10		0	0	4,557	
PV Partners	49		673,596	493	0	
Renewable SubTotal:	**59**		**673,596**	**493**	**4,557**	**0**

TOTAL PUBLIC BENEFIT FUNDS SPENDING

The majority of public benefit funds in Palo Alto are spent on efficiency. A table and graph show this relationship below. Note that public benefit funds do not pay for rate discounts or for research and development projects managed by the utilities engineering and capital programs.

Historic Public Benefits Fund Expenditures by Category for Electric, Gas and Water in Palo Alto

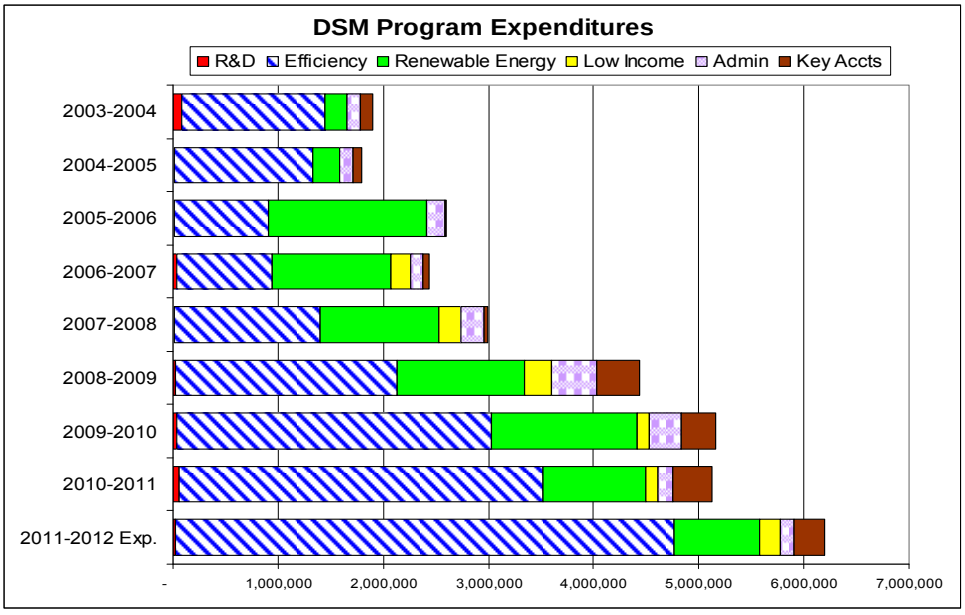


Table 7: Electric Fund Expenditures by PBC Category by Fiscal Year

	Fiscal Year					
	2008	**2009**	**2010**	**2011**	**2012 Expected**	**Total**
PBC Administration	$ 140,215	$ 384,312	$ 295,584	$ 143,904	$ 123,458	$ 1,590,391
Efficiency	$1,049,958	$1,566,757	$2,255,991	$2,241,285	$ 2,649,424	$ 13,579,186
Efficiency from Supply				$ 361,557	$ 965,338	$ 1,326,895
Renewable	$1,126,506	$1,210,982	$1,383,589	$ 667,472	$ 706,022	$ 8,188,831
Renewable from Supply				$ 257,884	$ 78,963	$ 336,847
Customer Key Accts	$ 17,832	$ 290,110	$ 252,109	$ 258,195	$ 211,254	$ 1,239,676
RD&D*	$ 4,354	$ 8,543	$ 20,170	$ 56,891	$ 25,005	$ 229,089
Low Income Installs**	$ 148,169	$ 168,189	$ 89,313	$ 118,313	$ 111,456	$ 769,549
Total	**$2,487,034**	**$3,628,892**	**$4,296,756**	**$4,105,501**	**$ 4,870,919**	**$ 27,260,463**

***RD&D from Engineering Capital projects are not included in PBC funds**

****Low income rate discounts are not included in PBC funds**

DEMAND RESPONSE AND SMART GRID

CPAU has had a voluntary demand response program with its largest customers since 2001. Under this program, customers reduce load when called upon by the utility to meet system reliability requirements. A new pilot project to pay customers for their reduced load under a full demand response program was begun in the summer of 2011. Unfortunately, temperatures were so cool that there were zero days in which Palo Alto came near to the load levels required to call a "peak event." In order to test the program's capabilities, a "peak event" was called in mid-September, resulting in one customer reducing load by a significant amount. The program is in review and is expected to be expanded in summer 2012.

CPAU has extensively studied the costs and benefits for implementing a smart meter program for all three utilities—electric, natural gas and water. Due to the high costs and relatively low benefits, City Council has determined that the time is not yet ripe for CPAU to fully expand into this area. The full implementation of the program is at least two years away. In the meantime, CPAU is launching a number of pilot programs and reviews into different types of technologies that may prove effective when the utility does implement smart meters.

ENERGY EFFICIENCY COMMUNITY BLOCK GRANT (EECBG) STIMULUS FUND PROJECTS

Background: The 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 $663,000. Palo Alto's application was awarded on September 21, 2009.

Projects Funded: The two projects developed for the EECBG application include the early replacement of High Pressure Sodium (HPS) street lights on selected streets with Light Emitting Diode (LED) street lights and implementation of Home Energy Reports for residents. The EECBG funds allocated to the LED Streetlight Project and the Home Energy Report project were $413,000 and $250,000 respectively. Council approved a contract with OPOWER to deliver the Home Energy Report project on May 3, 2010 with first delivery of in-home reports in November 2010. Street lights were installed on major arterials in Palo Alto during the Fall of 2011. Funds are nearly all expended, with a few thousand dollars remaining waiting on final bills.

CITY OF PALO ALTO UTILITIES

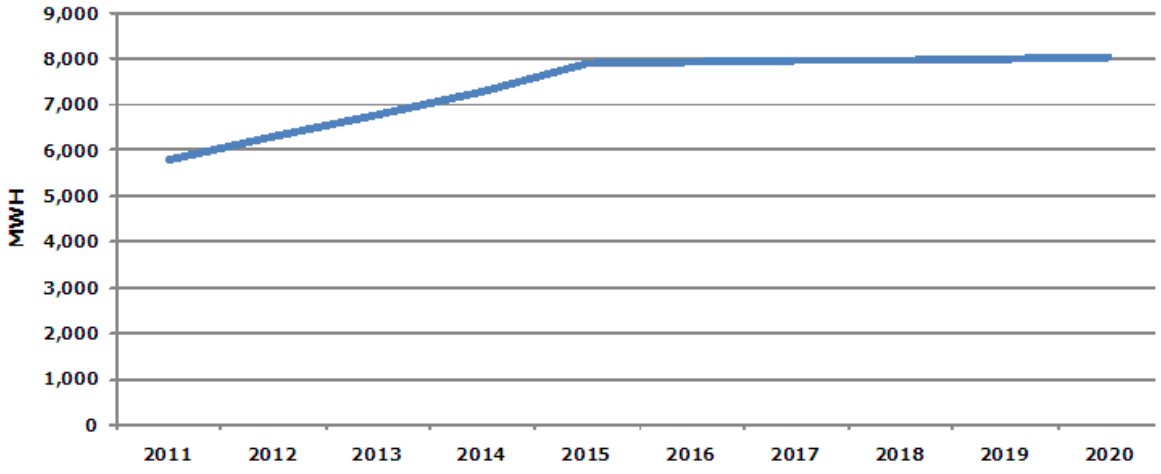
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Palo Alto		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	593	75	75	258,167	206,534	2,478,404	1,370	$57,140	$8,614	$65,754
HVAC	Res Cooling	36		1	12,750	8,543	153,765	94	$7,600	$968	$8,568
Appliances	Res Dishwashers	229	20	20	8,950	7,608	83,683	46	$10,730	$290	$11,020
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	8,648	575	60	635,562	481,680	3,970,915	2,120	$69,680	$21,594	$91,274
Pool Pump	Res Pool Pump	14	1	1	19,600	13,720	137,200	76	$2,800	$473	$3,273
Refrigeration	Res Refrigeration	531	9	9	385,451	327,633	4,586,867	2,488	$34,243	$16,311	$50,554
HVAC	Res Shell	558	26	30	42,096	29,596	581,828	353	$89,288	$6,452	$95,740
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive	1			420,000	420,000	420,000	224		$899	$899
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	323	44	44	1,101,751	917,098	11,271,237	6,730	$116,021	$664,479	$780,500
HVAC	Non-Res Heating	1			9,947	8,455	101,459	56	$1,784	$3,475	$5,259
Lighting	Non-Res Lighting	1,482	360	361	3,266,432	2,613,820	16,660,595	9,212	$320,668	$515,128	$835,797
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	1,725	42	41	393,784	322,432	2,584,747	1,363	$47,466	$63,402	$110,868
HVAC	Non-Res Shell	47			80,682	44,375	443,751	270	$6,407	$2,912	$9,319
Process	Non Res Process										
Comprehensive	Non Res Comprehensive	1,319,817			1,319,817	1,055,854	1,055,854	643	$131,982	$5,478	$137,459
Other	Other										
SubTotal		1,334,005	1,154	642	7,954,989	6,457,345	44,530,304	25,044	$895,810	$1,310,473	$2,206,283
T&D	T&D	1			288,643	288,643	11,545,720	6,087		$65,910	$65,910
Total		1,334,006	1,154	642	8,243,632	6,745,988	56,076,024	31,131	$895,810	$1,376,384	$2,272,193

EE Program Portfolio TRC Test	1.32

Excluding T&D

Energy Savings Targets 2011-2020



	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%

PASADENA WATER AND POWER (PWP)

Background and Goals

- Established in 1906, community-owned Pasadena Water and Power ("PWP") is a department within the City of Pasadena and provides electric service to more than 63,950 metered accounts over a 23 square-mile service area.
- Peak demand: highest in Fiscal Year 2010/2011 (period from July 1, 2010 through June 30, 2011, aka "FY10/11") was 320 megawatts ("MW") on September 27, 2010.
- Annual energy sold in FY10/11 was 1,159,581 megawatt-hours ("MWh") with retail electric revenue of $179,794,785.
- 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, calling for a 10% system demand reduction by 2012 through energy efficiency and conservation measures.
- On October 25, 2010 the City of Pasadena amended its Green Building Ordinance by adopting the 2010 California Building Codes, Green Building Standards and Residential Codes with higher-than-required standards that incorporate energy and water efficiency measures into the design, construction and maintenance of public and private buildings including residential housing.
- On April 12, 2010 the City of Pasadena adopted revised energy efficiency goals of 12% by 2020 (in accord with AB2021's three-year cycle review requirement)

Energy Efficiency Program Mission:

- Meet or exceed energy efficiency goals established by the Pasadena City Council.
- 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 (FY10/11) Energy Efficiency Program Highlights

- PWP's FY10/11 energy efficiency program expenditures:
- $2,921,358.41, or 1.84% of PWP's total retail rate revenues.
- Funded from Public Benefit Fund revenues, which totaled $6,724,565.
- Summary of FY10/11 energy efficiency program results:

- 184,536 megawatt-hours (MWh) lifetime energy savings
- 12,020 MWh annual savings (1.04% of FY10/11 retail sales)
- 2.07 MW peak load reduction (0.65% of FY10/11 system peak)
- Average cost-effectiveness test of 1.12 TRC and 6.6 PAC:
- FY10/11 energy efficiency program results by customer sector:
- Residential efficiency programs provided 1,599 product rebates saving 966 MWh per year and reducing peak load by 0.328 MW.
- Commercial efficiency programs provided 94 rebates saving 10,863 MWh per year and reducing peak load by 1.742 MW.
- PWP's water efficiency programs saved 15.6 million gallons, resulting in 191 MWh per year energy savings (shown on the E3 as "Non-Res Pumps"); PWP's Public Benefit Fund provided $57,328 in incentives to PWP's Water Fund for the value of the energy savings
- Additional PWP activities not funded by the Public Benefit Fund included Transmission and Distribution (T&D) system upgrades, saving 224 MWh per year
- Combined first year energy savings for FY10/11 City of Pasadena activities from PWP's Public Benefit Programs, Water Conservation Programs and T&D upgrades total over 12,244 MWh and peak load reduction of 2.07 MW.
- Five-year energy efficiency program summary (FY06/07 to FY10/11) results:
- 65,916 MWh cumulative annual savings (110% of adopted AB2021 goal)
- 14.2 MW peak load reduction (160% of adopted AB2021 goal)

Actual (FY10/11) 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 provide installers with an immediate customized rebate estimate. Rewarded 26 customers over $1,320,049 rebates for 78 projects that achieved cost effective energy savings and peak load reductions.
- Direct Install Emerging Technologies (DIET) Program: Provided 16 customers at 16 sites with no cost site evaluations installation of four innovative efficient technologies, included daylight harvesting, HVAC Ultraviolet, hotel room keycard, and CO2 sensors. Limited expenditure of up to $25,000 per site. Program is now closed.
- LED Street Signal Retrofit Project: Provided funds for LED replacements for municipal traffic signals and pedestrian indicators, managed by Pasadena's Public Works Department.
- Summer Blues Small Business Outreach and Audit Program: Successful partnership with local nonprofit Outward Bound, Inc., and winner of the California Municipal Utilities Association (CMUA) 2011 Community Service/Resource Efficiency category for a small utility. A team of trained high school and college students canvassed small businesses to conduct an energy and water needs assessment, gather site data and critical contact information for a subsequent direct install program ("WeDIP" described in "Budgeted Commercial Programs" below). The team reached out to nearly 680 small-business customers and conducted 151 assessments.
- High Performance Building Program: Offered incentives for new or remodeled buildings which exceed Title 24 energy standards by at least 12 percent. Program now closed to new applicants, as Pasadena is built out and redevelopment activity has decreased with the current economy, and City adopted higher than State-required Cal-Green building codes.
- Technical Assistance: The Technical Assistance program provided walk-through assessments of facilities 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 (FY10/11) Residential Customer Programs:

- Energy Star® Home Incentive Program: Provided 782 rebates to 737 customers for the purchase and installation of high efficiency items including refrigerators, hard-wired lighting fixtures and ceiling fans with attached light kits.
- Refrigerator Recycling: Provided no-cost service to 240 customers for the collection and recycling of old, inefficient refrigerators/freezers and/or retired second units. Customers were mailed a coupon for three CFL's (redeemable at local community centers) and a check for $25 or $35 incentive for their old refrigerators and freezers, respectively.
- Efficient Home Cooling: Provided 706 rebates to 253 customers for the installation of new central air conditioners, Energy Star® doors, windows and 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. 326 visitors used the online tool to perform 550 calculations. If the customer needed more direct assistance, PWP sent energy conservation experts to identify energy conservation opportunities and provided 20 such customers with custom analyses of usage and conservation suggestions.
- Cool Trees Rebates: Provided rebates to 29 customers for the planting of 95 shade trees. Program allows up to 10 shade trees per household. Provided detailed guidebook and education online and at community landscaping workshops on how to properly select a site, plant and maintain shade trees.
- CFL Recycling: Provided no-cost, convenient CFL recycling collection points at local lighting retailers and all community centers. Recycling pouches are provided at community events, community centers and hardware stores.
- Residential Programs Outreach & Education: Promoted PWP's residential conservation tips and efficiency programs online, at community workshops and events, in brochures and direct mail pieces, in public radio spots and local newspapers.
- Efficient Pool Pump Program: Provided 16 rebates for installing efficient pool pumps.
- Income-qualified Residential Efficiency Programs
  - Refrigerator Exchange: Provide no-cost collection and recycling of old refrigerator and installation of new high-efficient refrigerator to 258 qualified low-income residential customers; PWP provided an extended warranty on each unit installed.
  - Efficient Affordable Housing Program: Market bundled, existing services and incentives to owners and property managers of qualified multi-family affordable housing properties, in partnership with the City's Housing Department.

Actual (FY10/11) Program Evaluation, Measurement and Verification ("EM&V")

- Residential Programs
  - Energy Star: Contractor performed site verification on 10% of all residential efficiency equipment purchases and installations; he also left behind 3 CFL's with each customer verified.
  - Refrigerator recycling and replacement program: Equipment verifications were provided by ARCA, the vendor who delivers and recycles these units.

- KEMA/E3 Energy Efficiency Reporting Tool ("E3"): Used to calculate deemed energy savings on residential program activity.

- Non-Residential Programs
  - Utility staff and/or third party contractors performed pre-and post-installation equipment and installation verification on site for 100% of customer projects.
  - Energy Efficiency Partnering (EEP):
    - Equipment: Independent contractor calculated energy reduction using the Department of Energy's eQuest building modeling software savings calculations for all mechanical projects including central plants, chillers, package units, and motors. Data loggers and CT's used to verify savings on 19 % of mechanical projects.
    - Lighting: Engineer-certified lighting calculator (Excel workbook) used to calculate lighting retrofit project energy savings based on actual hours of operation. Lighting accounted for 46% of the EEP projects.
  - Direct Install Emerging Technologies (DIET)
    1. Independent contractor verified savings for 47 out of 58 (81%) of projects.
    2. Third party engineers used data loggers, e-Quest and DOE 2 building modeling software, calibrated with customers actual 12-24 month billing history, for quantifying actual energy savings.
  - Third party engineers provided an engineering review and analysis of energy savings and load reduction for the Public Works LED Signal Retrofit Project .
  - PWP staff and consultants reviewed the EEP program's impact, strategy, design, process, data management, reporting and marketing; discussed options to reach more customers. Changes to be implemented in FY11/12.

Budgeted (FY11/12) Energy Efficiency Program Objectives:

- Ensure that energy efficiency is a reliable resource for integrated resource planning by encouraging the installation of the most cost-effective, reliable, and feasible energy efficiency measures for Pasadena customers.
- Continue existing product menus in Q1 and Q2; re-evaluate all incentives for cost-effectiveness based on updated E3 reporting tool and revise as needed in Q3.
- PWP continues to plan and budget efficiency programs to meet the goals provided by Summit Blue's "EERAM" public utility tool for the current ten-year (2011-2020) period.
- Measure and evaluate the potential for and impact of energy efficiency measures and programs.
- FY 11/12 efficiency program budget in excess of $4,850,000 may provide annual energy savings over 14,500 MWh goal and reduce peak demand over 3.3 MW (1.2% reduction in forecasted energy use).
- Cumulative expected FY2006/2007 through FY2011/2012 savings may exceed the cumulative annual goals for the five year period by 8%.

Budgeted (FY11/12) Commercial Customer Programs:

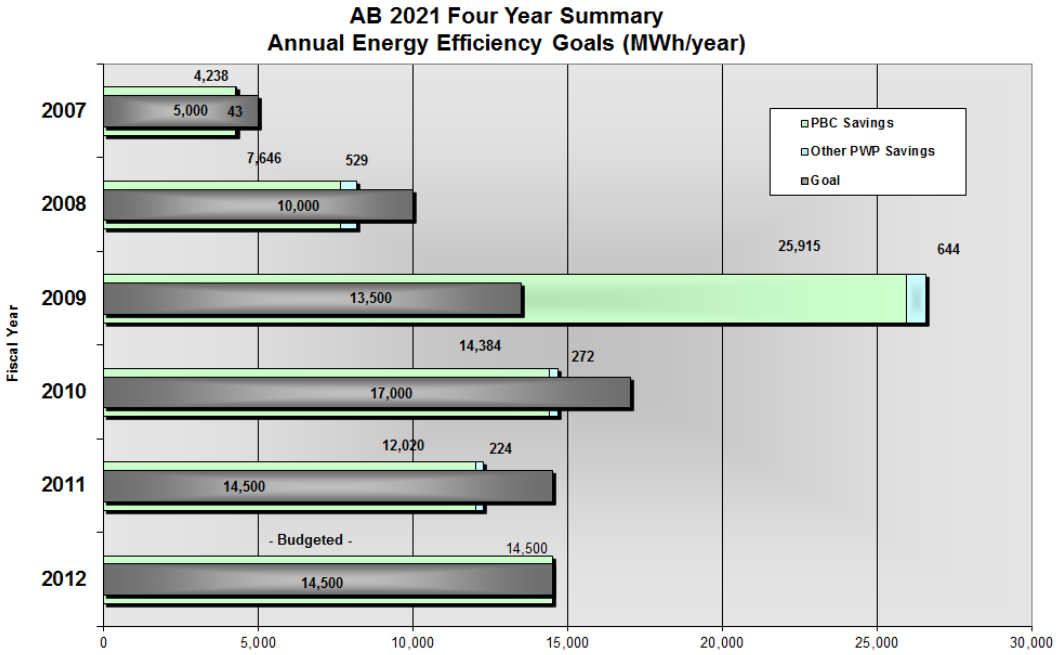
- Commercial Efficiency Programs
  - Energy Efficiency Partnering Program ("EEP")
  - Water & Energy Direct Installation Program ("WeDIP")
  - Technical Assistance
  - Business Energy Efficiency Outreach & Education

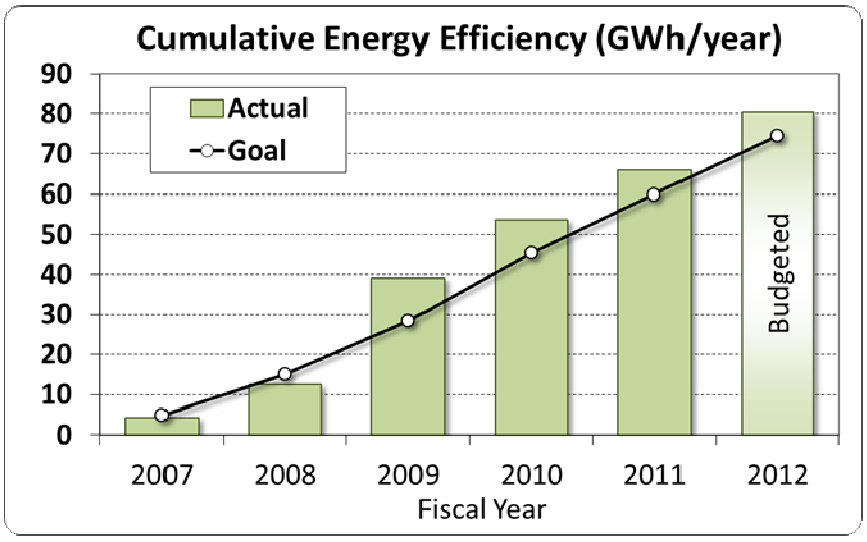
- Residential Efficiency Programs
    - Energy Star® Home Incentives Program
    - Efficient Cooling Home Incentive Program
    - Residential Pool Pump Program
    - Refrigerator Retirement Program
    - Cool Trees Rebates
    - CFL Recycling
    - Home Energy Reports: A new pilot program, PWP is partnering with OPOWER to deliver customized printed energy use reports and provide online access to 25,000 randomly selected residential electric customers. These reports compare the electric usage of each recipient with similar PWP households. Savings will be measured annually against metered billing data and participation in PWP's rebate programs. Launched in June 2011, FY11/12 will be the first program year that savings from the Home Energy Reports will be reported.
- Income-qualified Residential Efficiency Programs
    - Refrigerator Exchange
    - Efficient Affordable Housing Program

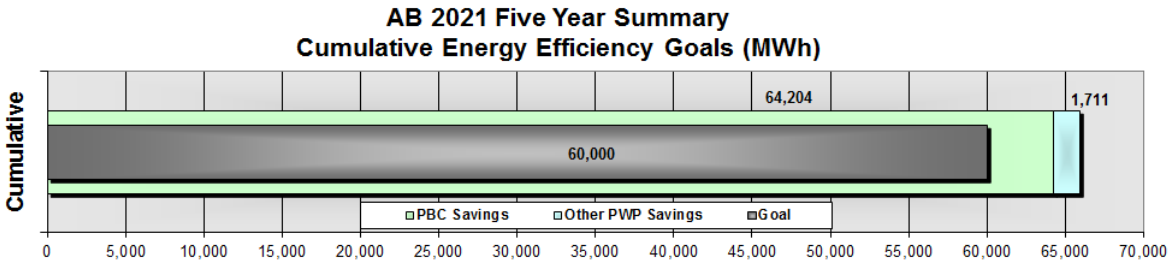
Budgeted (FY11/12) Program EM&V

- Residential Programs
    - Contractor performs site verification of 10% of residential efficiency purchases and installations.
    - Prescriptive rebates: Use "natural replacement" deemed savings per the E3 tool for prescriptive rebates, except where customers indicate "early replacement" eligibility (equipment age) on rebate applications.
    - Refrigerator recycling and replacement programs: Equipment verifications are provided and specifications are gathered by ARCA, the vendor who delivers and recycles these units.
    - KEMA/E3 Energy Efficiency Reporting Tool ("E3"): used to calculate deemed energy savings on residential and commercial deemed rebates.
- Non-Residential Programs
    - Utility staff and/or third party contractors perform onsite pre-and post-equipment and installation verification on 100% of customer projects.
    - Energy Efficiency Partnering (EEP):
        - Equipment: Independent engineer calculates energy reduction using the Department of Energy's eQuest building model software savings calculations for 100% of mechanical projects including central plants, chillers, package units, and motors.
        - Lighting: Engineer-certified lighting calculator (Excel workbook) is used to calculate lighting retrofit project energy savings based on actual hours of operation.
- Small Business Direct Install (SBDI)
    - Evaluating pilot program results, designed to launch full-scale in spring 2011.
    - Will be independently evaluated after first program year.
- Program Evaluation Plan: PWP continues to evaluate and engage qualified vendors to provide EM&V services; perform an impact and/or process evaluation on the following programs over the next two years:
    - 2010/2011 Energy Efficiency Partnering (EEP)
    - 2010 Direct Installation of Emerging Technology (DIET)

- 2011/2012 Water & Energy Direct Install Program (WeDIP)
- 2011/2012 Home Energy Reports Program







PASADENA WATER AND POWER (PWP)

PASADENA
Water&Power

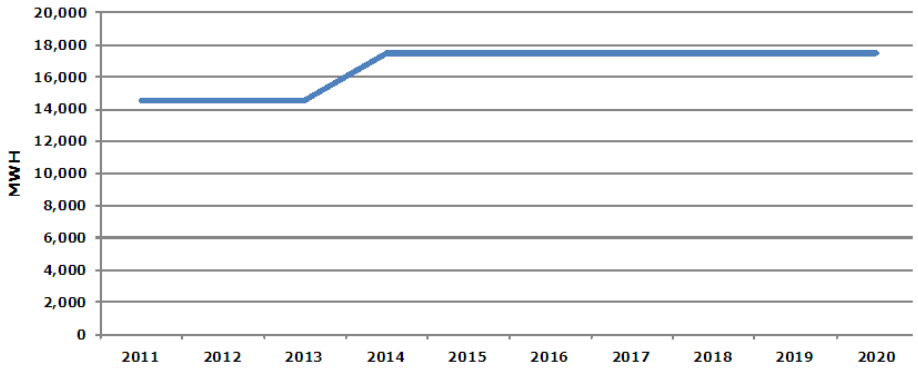
Time Period for Reporting Data: Fiscal Year ending 06/30/11

Pasadena		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	8	1	1	496	422	5,059	3	$780	$29	$809
HVAC	Res Cooling	1,918	91	117	138,480	118,753	1,129,080	719	$91,617	$8,482	$100,099
Appliances	Res Dishwashers	5			154	123	1,351	1	$405	$7	$412
Consumer Electronics	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	36	3	2	9,486	7,525	138,319	78	$5,041	$466	$5,507
Pool Pump	Res Pool Pump	16	2	2	13,924	9,608	96,076	54	$3,625	$363	$3,988
Refrigeration	Res Refrigeration	1,501	158	158	810,004	764,913	5,390,334	3,042	$296,646	$29,725	$326,371
HVAC	Res Shell	83	13	13	35,937	19,765	383,091	252	$16,534	$2,393	$18,927
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive	346	34	34	45,273	45,273	135,819	81	$20,000	$357	$20,357
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	29	746	746	4,022,111	4,022,111	80,442,220	51,455	$800,674	$101,466	$902,140
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	45	931	931	5,665,497	5,665,497	71,857,557	41,164	$1,385,948	$121,810	$1,507,758
Process	Non-Res Motors	6	65	65	895,040	895,040	14,320,640	7,981	$140,017	$9,400	$149,417
Process	Non-Res Pumps	2			192,814	192,814	3,085,024	1,719	$57,643	$5,751	$63,394
Refrigeration	Non-Res Refrigeration										
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive	320			502,456	502,456	7,552,344	4,251	$10,003	$2,643	$12,646
Other	Other										
SubTotal		4,315	2,045	2,070	12,331,671	12,244,298	184,536,914	110,801	$2,828,933	$282,894	$3,111,827
T&D	T&D										
Total		4,315	2,045	2,070	12,331,671	12,244,298	184,536,914	110,801	$2,828,933	$282,894	$3,111,827

EE Program Portfolio TRC Test	1.10

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

PLUMAS-SIERRA RURAL ELECTRIC COOPERATIVE (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 and is celebrating 75 years of providing services to its rural member-owners
- Average member-owners served: 7798
- Revenue by rate class: 47% residential, 49% commercial/industrial, 4% irrigation
- Annual energy use: 151 GWh: 53% commercial, 42% residential, 5% irrigation
- Peak demand in 2011: 27.7 MW winter peak
- PSREC facilities include: two 69kV interconnect substations, 150 miles of transmission line, 11 distribution subs, 1200 miles of 12.47/7.2kV distribution line, and a 6MW cogeneration facility
- 57 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. This is achieved by increased awareness of energy efficiency and conservation through promotion of programs and by providing educational information. We also further assist income qualified residential customers that receive rate assistance by providing energy efficiency measures to reduce their dependency on subsidies. PSREC's Ground Source Heat Pump Program has been one of the most successful programs of its kind in the country.

PSREC primarily uses KEMA's data for energy efficiency measure quantification.

Current Energy Efficiency Programs and Services (Calendar year 2011)
PSREC administers a comprehensive energy efficiency incentive program to encourage our rural residential members to upgrade their homes and equipment 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.

Residential Programs

- Ground Source Heat Pump (GSHP) Program: 0% interest ground source heat pump loop loans available for installation of ground-source heat pumps. This program has suffered due to the near halt of construction in our area.
- ENERGY STAR® Appliance Rebates: Rebates available 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. This program remains steady, yet has been impacted with the halt of new construction.
- Energy-Efficient Equipment Discounts: Discounted sales of water heater blankets, low-flow showerheads and ConvectAir heaters.
- Compact Fluorescent Light Bulb Program: Discounted sales of CFLs and distribution of free CFLs at several public events. Additionally, rebates offered for the purchase of ENERGY STAR® CFLs from local retail locations. This program has been much slower this year, probably due to market saturation or the availability of cheaper CFLs.
- ENERGY STAR® LED Holiday Light Rebate: Rebates provide an incentive to replace incandescent holiday light strands with qualified new ENERGY STAR LED holiday light strands.
- Energy Audits: PSREC significantly increased efforts to provide free comprehensive energy audits to assist members with energy conservation or troubleshooting high energy consumption in their home. This program has been successful in educating members about efficiency and conservation and assisting in reduction of energy use, especially in low-income homes.
- Meter Lending Program: Members can borrow our WattsUp® meter to plug in 120-volt appliances, helping them identify energy use of specific appliances. This program has helped several members understand just how much an appliance or space heater really uses and helps them make the choice of unplugging or reducing energy use.
- Green Building Program: Semi-annual presentations to introduce contractors to new technologies for building more energy efficient homes. We have had successful response to these presentations and have found that many contractors are beginning to realize the importance of energy efficient and green retrofits for existing homes, especially with the housing slump.
- 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. This program has successfully addressed high bill concerns by empowering members to use information such as our 'Do-It-Yourself Energy Audit' to learn more about their home and how they use energy.
- Lending Library and Resource Center: Provide energy efficiency and renewable energy resources to members through a book lending library and resource center in our office lobby.
- 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 offered to assist members with energy conservation. This program is steadily growing as members who are struggling in the weak economy are extremely appreciative of the assistance.

Commercial Programs

- Custom Commercial Lighting Retrofit Rebates: Custom rebates offered to commercial businesses that retrofit existing lighting with more efficient lighting. We had several inquires about this program, but, probably due to the economic downturn, none of our commercial members completed lighting retrofits.
- Irrigation Efficiency Program: This program encourages installation of energy efficient equipment in agricultural irrigation systems by offering low-cost pump tests and rebates for NEMA Premium motor replacement or installation of variable frequency drives. There was less interest in 2011, possibly due to a wet spring with less irrigation needed.
- Commercial Energy Audits: Provide free energy audits to businesses to assist members with energy conservation or troubleshooting high energy consumption in their business. With the suffering economy, our local businesses are also suffering. This program has been successful in assisting business owners in making decisions in efficiency upgrades and conservation.

2011 Program Summary:
Total Program Costs: $107,821
Total kW demand reduction: 55 kW
Total Lifecycle kWh reduction: 644,277
Program Portfolio TRC Test: 0.60

T&D System Upgrades (Calendar year 2011)
Due to the remote nature of the PSREC system and the substantial distribution system necessary to reach all of 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. Through T&D upgrades in 2011 PSREC was able to achieve 5 kW peak savings and 392,000 lifecycle kWh savings.

Analysis in Variation of Goals and Results (Calendar year 2011)
Historically, a large part of PSREC's energy savings have typically been achieved through our highly successful Ground Source Heat Pump (GSHP) Program. Most GSHP installations are in newly constructed homes, due to PSREC's robust outreach and education to encourage custom home contractors to incorporate GSHPs in their construction plans.

With the near halt of new construction and economic downturn, our forecasted energy efficiency goals have been drastically impacted. Issuance of building permits in our Plumas County service territory declined 91.26% since 2006, and GSHP installation has declined by 87% in the same time frame. The construction decline has been devastating to our community, as well as to our energy efficiency objectives. Our electric service write offs have increased 42% from 2006. We are hopeful to see the market recover in future years and would anticipate our dedicated contractor network to again assist us in encouraging the installation of GSHPs.

In the meantime, PSREC continues to introduce contractors to new technologies for building more energy efficient homes. Additionally, since the principal residential program was impacted by the construction slump, PSREC has attempted to diversify programs to include small commercial and irrigation members. However, the results are far from exceptional, as no rebates were issued to commercial or irrigation members in 2011.

Proposed PSREC Energy-Efficiency Programs and Services (for 2012)

- Maintain or expand existing programs.
- Evaluate and implement new energy-efficiency programs and technologies, as applicable.
- Continue to target small businesses to provide incentives for lighting and refrigeration retrofits.
- Revise and expand the Irrigation Efficiency Program for our agricultural members.
- Strive to establish more green building in the area and encourage economic growth.
- Research the potential of a pilot ductless heat pump program.

PLUMAS-SIERRA RURAL ELECTRIC COOPERATIVE (PSREC)

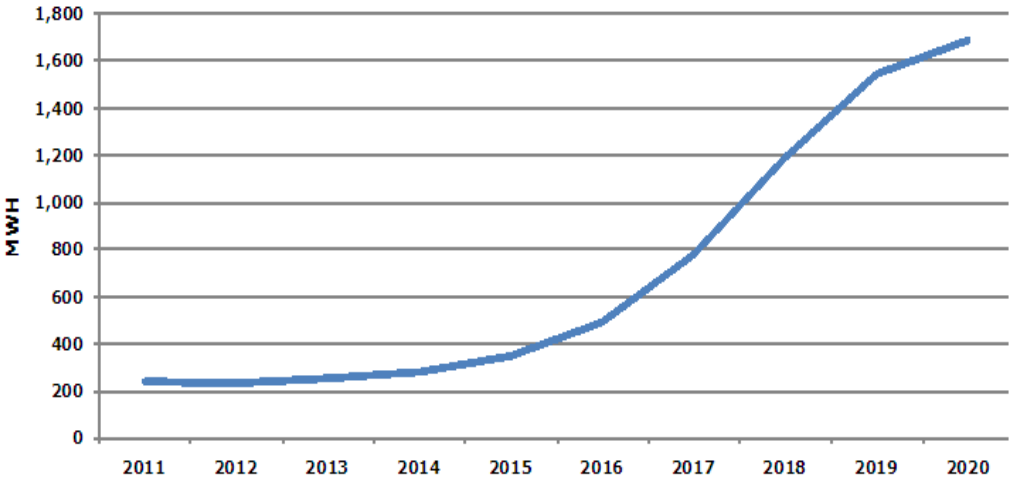
Time Period for Reporting Data: Calendar Year ending 12/31/2011

Plumas Sierra		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	22	3	3	1,364	1,057	12,685	7	$1,100	$3,635	$4,735
HVAC	Res Cooling										
Appliances	Res Dishwashers	12	2	2	418	311	3,423	2	$600	$978	$1,578
Consumer Electronic	Res Electronics	7			777	660	2,642	1	$140	$557	$697
HVAC	Res Heating	4	3		22,512	15,758	393,960	239	$25,098	$24,254	$49,352
Lighting	Res Lighting	569	46	2	24,377	19,161	98,038	52	$4,270	$19,323	$23,593
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	43	2	2	14,107	9,054	68,195	37	$3,625	$11,485	$15,110
HVAC	Res Shell	245		2	1,985	1,389	15,281	9	$507	$2,713	$3,220
Water Heating	Res Water Heating	30			6,195	3,739	50,055	27	$3,216	$6,319	$9,535
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		932	55	11	71,734	51,131	644,277	374	$38,556	$69,264	$107,821
T&D	T&D	1	5	5	16,000	11,200	392,000	218			
Total		933	60	17	87,734	62,331	1,036,277	593	$38,556	$69,264	$107,821

EE Program Portfolio TRC Test	0.60

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

PORT OF OAKLAND

- 145 customers, all commercial
- Peak demand: 11.6 megawatts
- Annual energy use: 68 gigawatt-hours

Port of Oakland Energy Efficiency Program Highlights

Current Commercial Programs:

- Energy Audits: The Port with the collaboration of City Of Oakland is currently conducting an Energy Audit program that will result in recommendations of 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. Rebates will be provided for the energy efficiency projects completed based on the energy audit recommendations. The energy audit is provided to the Port's customers free of charge.
- 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 percentage 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).

Proposed Port of Oakland Energy Efficiency Programs and Services: (for 2011-12)

- Maintain existing programs at current levels.

Port of Oakland Renewable (or Green) Energy Programs:

- 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 onetime 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 qualify under this program are given a maximum rebate of 20% of the construction cost of the generating facility, based on the availability of funds.

Port of Oakland Demand Reduction Programs:

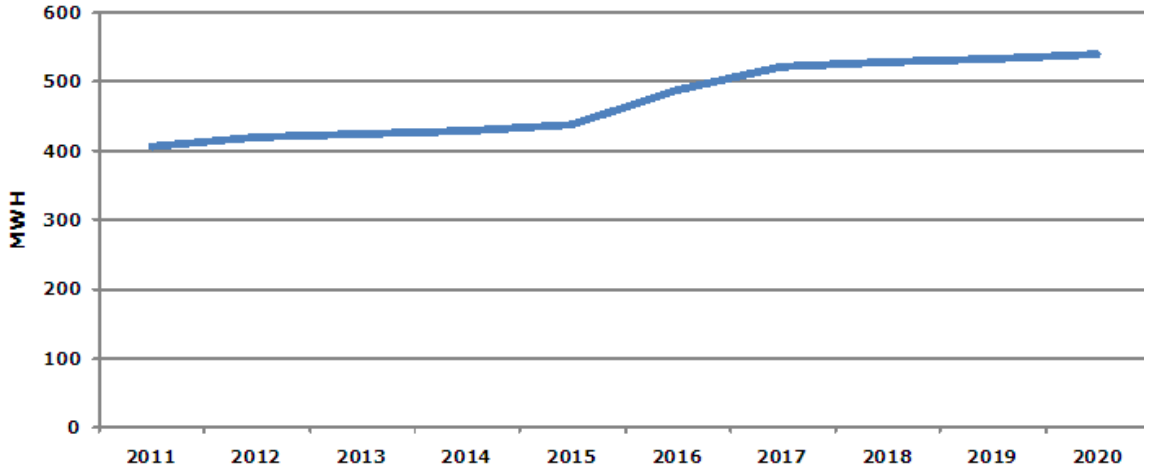
The Port of Oakland does not currently have any demand reduction programs in place.

PORT OF OAKLAND

Time Period for Reporting Data: Fiscal Year ending 6/30/2011.

No energy efficiency rebates provided in FY 2010-2011.

Energy Savings Targets 2011-2020



	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%

RANCHO CUCAMONGA MUNICIPAL UTILITY

The Rancho Cucamonga Municipal Utility (RCMU) was formed in 2001 to provide safe, reliable and cost-effective electric service to retail customers that were building new facilities located within the designated service territory. It served its first customers in 2003. Annually, more than 72,000 megawatt-hours of electricity are distributed to our customers via 20 circuit miles of wire spread across approximately 4 square miles. Its historical peak demand is 17.5 megawatts, set in August 2011. RCMU currently serves no residential customers but has over 480 commercial accounts, many of which are smaller, privately owned businesses. RCMU also services the City of Rancho Cucamonga's City Hall, Cultural Center, Victoria Gardens Library, Animal Center, and the city's Epicenter Entertainment and Sports Complex.

Energy Efficiency Program:

In fiscal year 2010/2011, RCMU issued $29,621 in lighting rebates, which will save an estimated 211,663 kWh/year. The majority of the savings are due to one national department store replacing 2,702 incandescent lights with LEDs. Staff believes that due to the continuing difficult economic conditions, which are putting a strain on the cash flows of small businesses, there is reluctance among many RCMU customers to participate in programs with any upfront monetary costs; therefore, staff is continuing to explore programs and incentives that will accommodate this trend.

RCMU is also exploring new ways to advertise their rebate program and energy efficiency information to their small business community. A quarterly newsletter and free energy audits are currently utilized to educate customers on current rebates and energy efficiency updates. RCMU has partnered with a contractor who works with a non-profit organization that is dedicated to retraining displaced workers in the new "green" economy. The students of the non-profit are all BPI and HERS-II certified and many already posses a contractor's license. To date, one student from the non-profit has been fully employed by the contractor. Through this partnership RCMU is offering free energy audits to all its customers and hopes to expand the program in the future.

Commercial Customer Programs:

- Incentives/Rebates: RCMU has adopted the "Express Solutions" model for energy efficiency rebates. RCMU does not restrict customers to specific technologies or approved models of equipment; customers can elect to install any energy efficient improvement they wish. Customers receive a rebate for estimated kilowatt hour savings for the first year. RCMU uses the following categories and incentive rates:

Category	Annual Consumption Reduction Rebate
Lighting	$.05/kwh
Refrigeration	$.09/kwh
HVAC	$.09-$.15/kwh
Motors	$.09/kwh
Other	$.09/kwh

- Energy Audits: RCMU offers free, customized energy audits including lighting assessment, HVAC assessment, equipment assessment and a review of energy usage. Specific cost-effective recommendations to improve energy efficiency and reduce energy use are provided.
- Time of Use Rates: All customers whose demand exceeds 200 kilowatts receive time-of-use pricing, incentivizing them to reduce their energy costs through the effective time management of their energy usage.

Renewable Energy Programs:

Currently, RCMU has two solar photovoltaic customers which are estimated to save a total of 105,049 kWh/year. For calendar year 2012, RCMU is continuing to offer the 2011 incentive of $2.25 per watt installed for renewable energy generation systems with a peak AC output of less than 30 kW, and $0.08 per kilowatt hour produced for renewable energy generation systems with a peak AC output of 30 kW or more. By maintaining the 2011 solar incentive rates RCMU hopes to encourage more businesses to invest in renewable energy. These incentives are capped at 50% of total system installation cost. RCMU is also currently waiving all RCMU-related plan check and inspection fees.

Demand Reduction Programs:

In 2012 RCMU has partnered with Southern California Public Power Authority (SCPPA) and Ice Energy to install the thermal energy storage product called the Ice Bear. The system stores and produces ice during the off peak hours of the night and then works to cool the building through its existing HVAC system during the peak hours of the day. RCMU hopes to reduce electric system demand during the critical hours of the day to help ensure overall system reliability.

RCMU has also hired a consultant to conduct a smart grid study in 2012. This study will gather and analyze data, economic values and technical considerations necessary to determine the requirements and feasibility of a potential smart grid deployment in our service territory.

In addition, two City facilities within RCMU's service territory have installed emergency back-up generation systems which can be utilized when the need arises. These generators are capable of supplying the power needs for these two facilities for 24 hours. These two facilities are also two of RCMU's largest customers.

RANCHO CUCAMONGA MUNICIPAL UTILITY

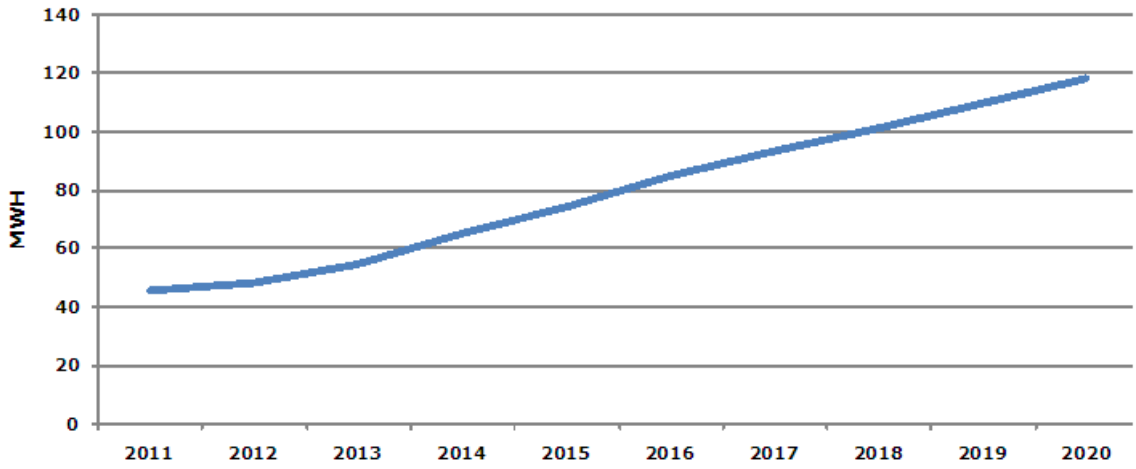
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Rancho Cucamonga		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	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	2,891	41	41	274,887	211,663	3,386,610	2,006	$29,621	$32,000	$61,621
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		2,891	41	41	274,887	211,663	3,386,610	2,006	$29,621	$32,000	$61,621
T&D	T&D										
Total		2,891	41	41	274,887	211,663	3,386,610	2,006	$29,621	$32,000	$61,621

EE Program Portfolio TRC Test	3.09

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

REDDING ELECTRIC UTILITY (REU)

Energy Efficiency Program Performance Overview

Redding Electric Utility (REU) spent $2.0 million on its Public Benefits Program (PBP) in Fiscal Year (FY) 2011. Of this amount, 50 percent or $1 million was spent on REU's energy efficiency improvement programs. In addition to this amount, REU invested almost $500,000 in its ongoing advanced efficiency improvement program implementing thermal energy storage in commercial air- conditioning applications.

In summary, during FY 2011 REU achieved a net annual energy savings of 723 Megawatt-hours and reduced our system's net coincident peak demand by 1.1 megawatts (MW) at a cost to the Utility of approximately $1 million. Based on the state-sanctioned E3 computer model used to evaluate energy efficiency program cost effectiveness, this translates into a 1.1 overall energy efficiency program Total Resource Cost ratio for REU.

The FY 2011 programs resulted in less energy savings than in FY 2010 largely due to economic conditions including the continued loss of commercial accounts during the year and one of the state's highest unemployment rates existing in Redding and Shasta County. However, it is becoming increasingly difficult for utilities to find energy efficiency measures that yield substantial energy savings and are deemed to be "cost-effective" in the modeling evaluations and in real world applications.

Background

Since 1998, REU has spent more than $15 million in numerous rebate and incentive programs to increase the energy efficiency in the Redding community. These programs have raised customer awareness through increased education on energy efficiency and with the installation of high efficiency measures. REU continued 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 in FY 2011. Because of the relatively high saturation level of Energy Star appliances and air conditioners with SEER rating of 13+, REU's customers are not participating in our rebate programs as in previous years.

An example of the changing "market" for energy savings is high efficiency air-conditioning (AC) equipment, which has been, up until 2011, the most successful incentive program for REU. This is largely due to the relative impact on REU's peak load demand reduction which is a primary focus for our utility – while these AC units also provided a positive Total Resource Cost (TRC) cost test result. Unfortunately, though REU reduced our per unit rebate amount the results in the E3 model for high efficiency AC units is now 0.9 – indicating the E3 model suggests that the cost to the utility is less than the benefit gained. Based on this and other reasons outlined below, REU will continue to shift its existing programs away from those that have been historically beneficial and move towards more peak load shifting and demand reducing measures that may not be as "economically beneficial" to individual

customers but will provide significant value to REU and our electric system's operating efficiency overall, which in turn benefits all REU customers.

Rebates for many of REU's other programs, such as the ENERGY STAR®-approved Appliance rebate and the lighting retrofit programs, have been highly utilized by customers to reduce utility bills and save energy; however, their system impact has been less dramatic and far less valuable for the Utility. Specifically, the "non-HVAC" 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 – and seems contrary to the intent of a program designed to increase efficiency. Reducing individual consumers' energy usage, without regard for the impact on overall electric system efficiency is not considered to be in-line with REU's utility system planning.

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 which increases utilities' operating costs and customer pricing/rates.

Serving the peak demand is essentially the most costly load – both economically and environmentally – for summer-peaking electric utilities to serve (such as REU). 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; that is simply not the case for REU.

A utility operator can tell you "not all kWh is the same". For example, reducing the energy consumption of Redding's streetlight service by 5,000 kWh (0.5 MW) from 8 p.m. to 6 a.m. is far less valuable to our Utility's customers than shaving 5,000 kWh and 1.0 MW from 1 p.m. to 6 p.m. 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) of energy usage to the state's Title-24 building code.

REU would submit that similar treatment should be afforded to the consideration or valuation of energy efficiency programs in future EE modeling treatments 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.

While REU's energy efficiency programs have been very successful in reducing energy consumption for customers for more than 10 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 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 "higher" peaks and "deeper" valleys in the Utility's load profile. Beyond the costly on-peak service requirements, the deep valleys can also create minimum load conditions for system operators

and make it difficult to accept wind energy, which is often produced in large quantities during off-peak periods.

Going Forward

To improve REU's operating efficiency and to continue to provide cost-effective efficiency improvements in our system, the Utility began the implementation of a thermal energy storage (TES) program in FY 2011 that is primarily focused on the 5 ton, direct expansion air-conditioning (DX-AC) market. This application of TES technology is provided with the addition of the Ice Bear TES unit to qualified AC units.

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 the refrigerant back to liquid state, rather than the mechanically-driven compressor, the compressor does not run during the 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 generate electricity during the cooler nighttime hours when it is more economically and environmentally efficient to do so. Shifting load to the nighttime hours also allows the Utility to accept more wind power (RPS qualified), which is more plentiful at night.

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 our 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 105°F or more – and that regularly occurs in Redding.

While REU's high-efficiency air-conditioner incentive program has been one of, if not our most successful programs 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 (all REU customers).

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 at the beginning of 2010. REU developed and implemented a whole-house based, deep energy retrofit/weatherization program for income-qualified customers throughout FY2010 and FY2011. Part of this Program was 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 completed for more than 40 contractors, REU implemented the retrofit program and deployed 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.

REU and our participating contractors completed 24 whole-house, deep energy retrofits under the EECBG program, with an average energy (combined gas and electric) reduction of more than 30 percent in the homes on an annual basis. With this energy savings, REU also reduced each home's peak demand by 50 percent or more. We achieved this by using the proper air-sealing and insulation installation techniques in these homes, which allowed our contractors to install new air conditioning units in every home that was at least one-half the tonnage of the AC unit that was in-place before the retrofit project. In addition, REU also reached out to approximately 150 additional income-qualified homes that were not suitable for the whole house retrofit program to provide low-cost, energy efficiency improvements to benefit the occupants. REU has completed our spending under the EECBG program.

Because of the success of the EECBG-funded training program and the associated retrofit projects, REU has begun a utility-based Home Performance Rebate Program for our customers that is funded under the FY 2012 Public Benefits Program and is expected to yield high TRCs and RIM test results in the years to come. REU's Home Performance Program was featured in the January 2012 edition of ASHRAE's monthly journal, and has received recognition and interest from utilities and trades up and down the State and from across the nation.

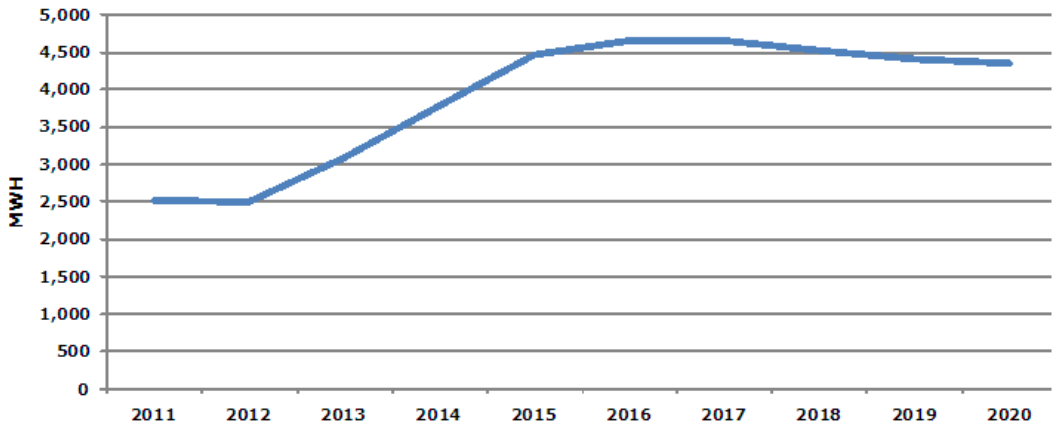
REDDING ELECTRIC UTILITY (REU)

Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Redding		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	573	77	77	35,526	30,197	362,365	200	$14,726	$1,468	$16,194
HVAC	Res Cooling	1,740	181	159	183,218	145,539	2,619,697	1,601	$366,020	$82,237	$448,257
Appliances	Res Dishwashers	471	40	40	14,460	11,568	127,245	70	$12,048	$514	$12,563
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting										
Pool Pump	Res Pool Pump	72	4	4	23,112	15,947	159,473	87	$16,700	$913	$17,613
Refrigeration	Res Refrigeration	791	12	12	95,711	71,783	1,004,966	545	$57,514	$4,824	$62,338
HVAC	Res Shell	1,283	204	204	168,730	114,501	2,175,906	1,299	$173,160	$40,850	$214,010
Water Heating	Res Water Heating	7			2,489	1,444	18,769	10	$525	$64	$589
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	79	11	187	15,616	12,493	187,392	105	$337,250	$34,915	$372,165
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting										
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	7	506	476	376,217	319,784	3,197,845	1,772	$30,569	$24,764	$55,333
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		5,023	1,035	1,159	915,080	723,256	9,853,658	5,689	$1,008,512	$190,551	$1,199,063
T&D	T&D										
Total		5,023	1,035	1,159	915,080	723,256	9,853,658	5,689	$1,008,512	$190,551	$1,199,063

EE Program Portfolio TRC Test	1.07

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

Note: These targets are not Board approved and do not reflect REU's expected market potential that is less than that represented.

RIVERSIDE PUBLIC UTILITIES

Key Statistics:

- Riverside Public Utilities (RPU) was established in 1895
- Over 106,000 electric and 64,000 water customers
- Peak demand hit system high of 604 megawatts in August 2007
- Annual energy use is approximately 2,100 gigawatt-hours
- RPU employs just under 600 full-time employees
- Service territory is approximately 90 square miles

Mission: The City of Riverside Public Utilities Department is committed to the highest quality water and electric services at the lowest possible rates to benefit the community.

Our Ten-Year Vision: Our customers will recognize Riverside Public Utilities as a unique community asset with a global reputation for innovation, sustainability and an enhanced quality of life.

Core Values: safety, honesty and integrity, teamwork, professionalism, quality service, creativity and innovation, inclusiveness and mutual respect, community involvement, and environmental stewardship.

In July 2010, the RPU General Manager launched the Environmental and Economic Effectiveness Effort (E4 Plan). This 2-year plan addressed difficult economic times through short-term electric rate freezes, economic development efforts, and a focus on green programs. The E4 Plan initiative also highlighted aggressive customer outreach, upgrades to RPU websites, Automated Meter Reading (AMR) implementation, paperless billing, renewable solar energy and energy efficiency.

RPU's energy efficiency efforts have exceeded established goals despite the very weak local economy and the sun setting of the federal tax credit for energy efficiency measures. While the number of commercial customers having an EE plan in place or developing one is lower than

muni-statewide averages and commercial customer participation levels are lower than statewide levels, satisfaction with program participation remains high.[8]

RPU's investment in proactively marketing its programs to its customers has played a significant role in increased program participation. The utility has continued to increase program participation from 22,000 applications in FY 09-10 to over 31,000 applications in FY 10-11. Riverside Public Utilities also won 22 awards in the last year and has received 125 awards since 2006. These awards include recognition from the U.S. Department of Energy (DOE), American Public Power Association (APPA), California Association of Local Economic Development (CALED), California Municipal Utilities Association (CMUA), Solar Electric Power Association (SEPA), American Water Works Association, Association of Metropolitan Water Agencies and the Public Relations Society of America (PRSA).

Recognized by Dr. Steven Chu of the Department of Energy (DOE), the highly successful and innovative Whole House Rebate Program became a PBC funded program in November 2011. The "pilot" program funded by ARRA retrofitted 244 homes. It helped to establish funding and incentive levels necessary to continue the program using PBC funds while local businesses utilized the program as a marketing tool to remain viable during the economic downturn. This combination resulted in energy efficient retrofitting for an additional 480 homes from PBC funding bringing the total participation to 724 during the first program year.

Although RPU programs were successful the past two years both in customer participation numbers and the reported energy savings, many economic and programmatic challenges remain:

- RPU retail energy sales measured in kilowatt hours have slightly declined or remained flat since 2007 possibly due in part to factors including high commercial vacancy rates, fluctuations in average temperature, impact of "green" initiatives and successful EE programs. As the PBC surcharge is proportional to retail kWh sales, the PBC funding supporting RPU programs has been reduced while program demands have increased.

- The local economy, including both job and housing markets, has remained a challenge continuing to make investment in energy efficiency measures difficult for many Riverside homeowners and businesses.

- RPU's low-income program (SHARE) participation levels have decreased from last year's program participation high of 9,574 due in part to a realignment of qualification criteria. However, the funding level exceeded $1,000,000 for the third consecutive year. RPU's low-income assistance represents 14% of the PBC funds collected in FY 10-11.

[8] RPU 2011 Business & Key Account Customer Oversample – RKS Research & Consulting – December 2011

- The California Solar Initiative (SB1) requires that RPU provide $2.5M annually from public benefit funds that could otherwise be spent on energy efficiency programs, research and development, and education. RPU solar rebate programs represent 40% of all PBC expenditures. Both the commercial and residential PV programs have been very popular. Riverside achieved a major milestone by surpassing the 3 megawatt (MW) mark of clean, renewable energy that is produced by solar generation projects throughout the city.

- There is concern that further reduction of incentives for the Whole House Rebate Program may reduce program participation and kWh savings. However, incentive reduction is necessary to align cost with energy savings. The sunset on the federal energy efficiency tax credit may also impact future program participation.

RPU continued to focus its commercial programs on direct installation, which target cash-strapped businesses. These programs included 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.

Riverside is committed to meeting the annual energy efficiency (EE) and conservation goals it has established through AB2021 for energy and demand reduction by 2016. These targets must be reviewed and updated every three years as required by legislation. The revised energy reduction goal of 232,503 megawatt-hours (MWh) over the next 10 years represents 1% of the revised Load Forecast completed in 2010. RPU will provide the required financial budget to meet these new targets and will continue to develop new cost-effective programs that yield energy savings necessary to achieve the goals set forth by Assembly Bill 2021 (AB2021).

Customer Incentives

RPU is continually reviewing the programs and services we offer to respond to the changing needs of our customers. With the successful transition of the residential Whole House Rebate Program to a PBC funded program expansion of commercial energy efficiency programs and creation of water efficiency programs will be the next steps to insure energy savings goals are reached utilizing a diverse set of tools to meet RPU customer needs.

Commercial Rebate Programs

- Air Conditioning Incentives – rebates for replacement or first time purchase of energy efficient AC units.

- Energy Star – rebates for purchase of Energy Star refrigerators, dishwashers, commercial clothes washers, solid door refrigerator/freezers.

- Lighting Incentive – rebates for kWh savings on installation of more efficient lighting.

- New Construction Incentive – rebates for energy savings exceeding Title 24 standards for new construction projects pre-approved by Riverside Public Utilities.

- Pool and Spa Pumps Incentive – rebates for purchase of qualifying efficient pumps and motors.

- Tree Power – rebates for purchase and planting of up to 5 qualifying shade trees per year.

- Thermal Energy Storage Incentive – feasibility study and incentives available for use of Thermal Energy Storage based on guidelines.

- Performance Based Incentive – rebates for customers who can demonstrate a kWh savings based on custom energy-efficiency measures.

- Commercial Photovoltaic Incentive – rebates for customers who install PV on their business to reduce peak load.

- Energy Innovations Grant for Post-Secondary Educational Institutions – 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.

- Custom Energy Technology Grants – Grants are awarded for research, development, and demonstration of energy efficiency projects that are unique to the business or manufacturing process.

Direct Installation Commercial Programs

- Programmable Thermostats – provides installation of energy-saving programmable thermostats for our small business customers.

- Vending & CoolingMisers – provides businesses with energy-efficient devices that control cold beverage dispensing machines and sliding door refrigeration coolers for maximum energy savings.

- Small Business Lighting – provides a lighting assessment and up to $500 in free energy-efficient lighting for small businesses.

Residential Rebate Programs

- Energy Star – rebates for purchasing Energy Star rated appliances that use less energy and water.

- Cool Cash – rebates for replacing Central Air Conditioners with a SEER rating of 15 above.

- Tree Power – rebates for purchasing and planting of up to 5 qualifying shade trees per year and 1 free qualifying shade tree coupon printed on the March back of the bill.

- Residential Photovoltaic Incentive – rebates for customers who install PV on their home to reduce peak load and offset high electricity bills.

- Pool Saver – rebates for purchasing efficient pool pump motor, and monthly credit for using pool pumps during off-peak hours.

- Weatherization – rebates for installing attic insulation or wall insulation, standard rebates for duct replacement, duct testing/sealing, window film, solar and standard attic fans, whole house fans and cool roofs.

- Whole House (EECBG/ARRA Funded) – rebates for completing two or more energy efficiency measures at a time. Points are awarded for each type of measure and then multipliers are given at specific point intervals on a sliding scale to encourage implementation of more energy efficiency measures.

- Whole House (PBC Funded) – rebates for completing energy efficiency measures. Points are awarded for each type of measure and then multipliers are given at specific point intervals on a sliding scale to encourage implementation of more energy efficiency measures.

Special Residential Rates and Services

- Appliance Recycling – free recycling service for old inefficient refrigerators and freezers.

- Utilicare – provides reduced rates to households that require specific types of life support equipment.

- SHARE – credits up to $150 toward electric deposit or bill payment assistance for qualified low-income applicants annually.

- Green Power Premium – allows customer to donate an additional 2 cents per kilowatt hour above their current kWh rate to assist in purchasing renewable energy resources.

Photovoltaic Efforts (Solar)
RPU continues to promote 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 through December 31, 2016 for customer installed systems.

RPU has a goal of installing 20 megawatts of local photovoltaic by 2020. During the last year there were 105 residential installations totaling 470 kW AC and 20 non-residential systems generating 219 kW AC of renewable solar energy. RPU currently has over 3 megawatts of photovoltaic systems installed and operational.

Research, Demonstration and Development (RD&D)
RPU continues to invest in RD&D programs through local higher education institutions, with a $100,000 grant to the University of California at Riverside (UCR) for solar and nanotechnology research and a $100,000 grant to California Baptist University for solar powered air conditioning research. RPU also participates in SCPPA-related RD&D efforts and will explore future research opportunities as they occur.

Demand Response/Smart Grid
In addition to a voluntary load curtailment program, RPU continues to implement a commercial time-of-use rate to encourage off-peak energy use by its large customers. RPU is evaluating other demand response measures such as Smart Grid technology and Ice Bear applications.

Low Income Assistance
RPU continues to assist low income families through the Sharing Households Assist Riverside's Energy (SHARE) fund. RPU customers can donate a specified amount of money each month to the SHARE fund which is then supplemented by PBC monies to credit up to $150 toward electric deposit or bill payment assistance for qualified low-income applicants annually. In FY 10-11 over $1,111,000.00 in credits were applied to assist over 7,400 families.

Evaluation, Measurement, and Verification (EM&V)
Riverside Public Utilities is committed to providing on-going evaluation, measurement and verification efforts for its energy-efficiency programs in support of AB2021. Upon receiving input by CEC staff at EM&V workshops, an initial EM&V plan is being finalized to evaluate one residential and one non-residential program annually. RPU will utilize outside consultants in this effort to analyze these rebate processes, program administration, the cost-effectiveness of the programs and methods of reporting energy savings. Furthermore, these activities will include a review of RPU's marketing materials, rebate programs, third party monitoring and verification and will provide 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.

As part of the City's annual audit process RPU requested a separate program audit pertaining to its Energy Efficiency programs. The goal was to review rebate processes, procedures and

supporting documentation. The final report includes findings and recommendation for program improvement.

In addition to the efforts provided by third party consultants, 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 all commercial rebate participants, including a review of historical energy usage and energy-saving calculations.

- All residential and commercial solar PV installations are field inspected and verified by city personnel for program compliance, system inter-connection standards and rated production output.

- Contracted with outside engineering firms to verify claimed energy savings on large, complex or technical commercial projects prior to issuing an incentive.

- Audits and installations performed by third-party contractors for RPU direct installation programs have high inspection rates that are performed by the consultant and RPU staff.

- Refrigerator/Freezer Recycling program administered by Appliance Recycling Centers of America (ARCA) assures proper inspection when the contractor is picking up old appliances.

Stimulus Update
The City of Riverside was allocated $2,499,810 in Energy Efficiency Community Block Grant (EECBG) under the American Recovery and Reinvestment Act (ARRA) for energy measures.

The following energy projects were submitted and approved under the grant for the EECBG funding through ARRA:

- Government Building Retrofits – $308,030 was allocated for projects to include boiler and water pump replacement; heating, ventilating and air conditioning unit upgrades; and building automation for eight city facilities. Six of the eight projects have been completed and the remaining two are underway.

- Whole House Rebate Program – $714,000 was allocated to create a pilot program offering a “whole house” approach to energy efficiency through an elevated rebate program that provides greater incentives as more energy efficient measures are

added to a home. The stimulus funded program improved energy efficiency in 244 homes.

- Personal Computer Management Software Rebate Program – $156,940 was allocated for this pilot program which offers software rebates allowing businesses to turn off PCs automatically saving energy and money. The City of Riverside, Alvord Unified School District and Riverside Community College have installed the software on over 6,000 personal computers to date.

- Greenhouse Gas Community Inventory – $48,650 was allocated for URS Corporation to complete a community GHG emissions baseline to compliment a previously funded government facilities study.

- Solarized Trash Compactors and Recycling – $153,040 in grant funds were used to purchase and install 25 new trash containers and recycling units in public areas throughout the city. The compactors use solar energy to power compaction of the trash reducing the number of trips needed to empty the containers.

- PV Electric Vehicle Charging Storage System – $157,000 was allocated for the proposed project which 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 – $254,050 was allocated to provide funding for approximately 200 additional energy-efficient light-emitting diode (LED) streetlights to improve public safety, lower energy use and save money.

- Lighted Street Name Sign Reduction – $450,030 was allocated to install approximately 1,000 “Diamond Grade 3 (DG3)” or LED street name signs to reduce maintenance costs and energy use.

- Specific Plan Updates – $258,070 was allocated to update specific plans to ensure integrated designs which incorporate elements to create an energy efficient/sustainable environment by reducing vehicle miles traveled and GHG emissions.

RPU and the City of Riverside will continue to actively pursue external resources to leverage Public Benefits funding to enhance its energy efficiency and demand side management programs.

RIVERSIDE PUBLIC UTILITIES

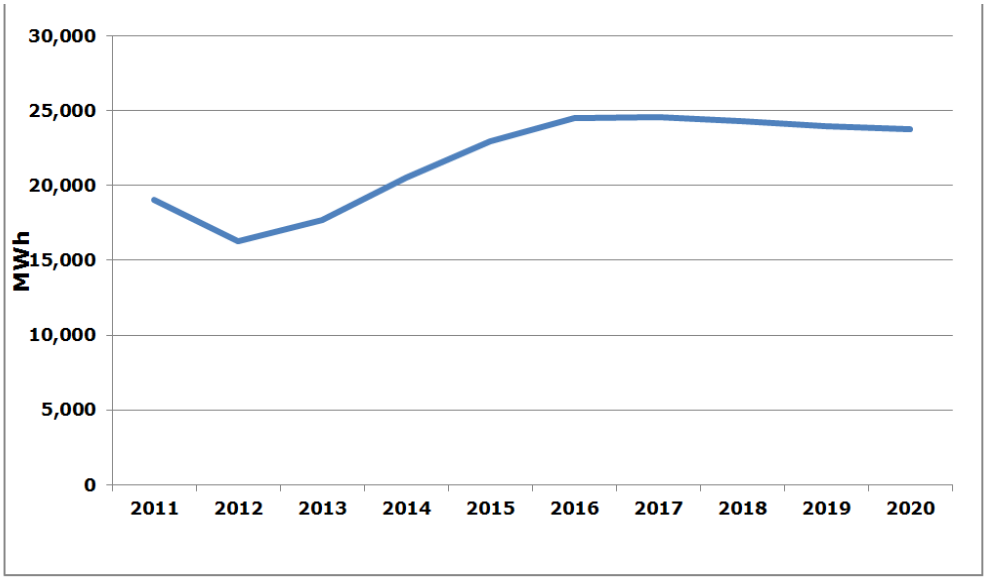
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Riverside		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1,604	217	217	99,448	84,531	1,014,370	604	$120,300	$4,266	$124,566
HVAC	Res Cooling	17,718	994	1,060	3,566,781	2,516,285	72,919,560	48,018	$882,151	$520,018	$1,402,169
Appliances	Res Dishwashers	934	78	78	28,674	22,939	252,329	150	$46,700	$992	$47,692
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	95	12	2	16,910	12,852	128,516	73	$2,375	$457	$2,832
Pool Pump	Res Pool Pump	103	6	6	33,063	22,813	228,135	129	$20,600	$885	$21,485
Refrigeration	Res Refrigeration	3,012	88	88	662,246	449,224	4,316,216	2,436	$555,200	$16,256	$571,456
HVAC	Res Shell	3,015	687	687	1,784,164	1,236,709	24,728,118	15,818	$1,215,595	$186,722	$1,402,317
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive	670			1,956,377	1,565,102	20,346,323	11,484	$1,554,668	$78,718	$1,633,386
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	1,225	674	154	902,400	779,835	4,890,224	3,054	$135,440	$23,996	$159,437
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	3,890	622	622	3,890,000	3,112,000	31,120,000	18,432	$174,379	$134,541	$308,920
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	399			643,188	578,869	2,315,477	1,290	$71,558	$7,226	$78,784
HVAC	Non-Res Shell	8	1	1	1,819	1,456	21,833	13	$798	$111	$909
Process	Non Res Process										
Comprehensive	Non Res Comprehensive	13,502	2,160	2,160	13,502,000	10,801,600	108,016,000	60,244	$400,287	$390,323	$790,610
Other	Other	1,059			1,514,370	1,211,496	1,211,496	743		$4,907	$4,907
SubTotal		47,235	5,539	5,076	28,601,440	22,395,710	271,508,597	162,488	$5,180,052	$1,369,419	$6,549,470
T&D	T&D										
Total		47,235	5,539	5,076	28,601,440	22,395,710	271,508,597	162,488	$5,180,052	$1,369,419	$6,549,470

EE Program Portfolio TRC Test	**1.77**

Excluding T&D

Energy Savings Targets 2011-2020



MWH	**19,016**	**16,313**	**17,698**	**20,524**	**22,955**	**24,489**	**24,589**	**24,285**	**24,000**	**23,782**
% of Load Forecast	0.89%	0.77%	0.83%	0.93%	1.01%	1.05%	1.03%	1.00%	0.97%	0.94%

ROSEVILLE ELECTRIC (RE)

General Information

- Roseville Electric (RE) was established in 1912 as a department of the City of Roseville
- 53,760customers (47,215 residential and 6,545 businesses).
- Annual FY11energy sales: 1,166 gigawatt-hours (GWH)
- 137 employees

Energy Sales

- Energy Sales: Roseville Electric was negatively impacted by the ongoing sluggish recovery from the recession. Energy (GWH) sold during FY11 decreased 3.48% over FY10.
- Residential and commercial vacancies and reduced per meter energy consumption are projected to cause this trend to continue in FY12.
- Major construction projects in Roseville have been placed on hold during the recession, eliminating previously larger scale projected growth.
- Due to rate increases implemented in FY 10 revenues for FY11 improved by 7 % over FY10.

Public Benefits Overview

- RE began offering energy efficiency programs in the early 1980's.
- From 2001-11, programs reduced peak demand by 16.94 MW and cumulative energy savings by over 108,689 MWH
- Total RE Revenues in FY11: $146,356,370
- Total dollars spent supporting public benefits programs: $4,443,806
- Spent on public benefit programs: 3.03 % of total utility revenues
- Rate-based public benefit dollars: $4,171,157 (2.85% of revenues)
- Additional utility resource dollars applied: $272,649 (0.18% of revenues)
- "Total Dollars Spent" includes all assigned administrative and program overhead costs.
- Programs funded include: Low-Income Assistance, Energy Efficiency, Demand-Side Management, Solar/Renewable Energy Programs and Research and Development.

Energy Efficiency (EE)

- **FY11 All Energy Efficiency Dollars Summary**
- Total EE ***rebates only:*** $ 1,702,986
- EE ***rebates only***: expenditures equal 40 % of total public benefits dollars spent
- EE ***rebates only***: expenditures equal 1.16% of total utility revenues
- Total EE ***rebates with admin/overhead***: $ 2,543,195
- EE ***rebates with admin/overhead:*** equal 59.49 % of total public benefits dollars spent

- EE ***rebates with admin/overhead***: equal 1.74 % of total utility revenues

Energy Efficiency Savings (kWh)

- Total: 8,633,947 kWh
- Residential: 1,123,699 kWh
- Business (non-residential): 7,510,248 kWh

Demand Savings (kW)

- Total: 2.8 MW
- Residential: 1.4 MW
- Business (non-residential): 1.4 MW

Energy Efficiency Program Summary

FY11 Residential Energy Efficiency Programs ($791,180)

- **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, pool pumps, shade trees and Energy Star ™ appliances for residential customers. Incentives are also offered for refrigerator recycling.
- Holiday Light Exchange: RE launched its first annual holiday light exchange at the Utility Exploration Center in FY11, to introduce LED technology to our residential customers.
- Energy Audits: A free comprehensive online audit is available for residential customers. This audit is also a prerequisite for the installation of solar electric at the residential customer's home.
- Residential New Construction Program: RE provides incentives to residential new home production builders to exceed (perform better than) Title 24 energy budget. The Preferred Homes energy efficiency program and the energy efficiency portion of the BEST Homes energy efficiency and roof top solar electric programs are popular among local builders. Home buyers also are attracted to these high performing homes, often times desiring the results of energy efficiency and solar electric without having an understanding of how these benefits are produced. In fiscal year 2010-11, over 69% of all new single family homes participated in the residential new construction programs.

FY11 Business (non-residential) Energy Efficiency Programs ($911,806)

- The "Two-Five-O" Small Business Lighting Program: Over 130 small business customers participated in the "Two Five-O" lighting retrofit program.
- Municipal Facilities: **RE** continued a 10-Year Plan to upgrade the efficiency of municipal facilities beyond code requirements during renovations and capital improvement projects with one project contributing 3,293,760 kWh savings for FY 11
- School Facilities: RE assisted local schools with energy efficiency retrofits.
- Mid-size and Large Business Programs: RE offered incentives to implement energy efficient measures that reduced peak loads and energy consumption.
- Custom Business 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.
- Business New Construction Program: The busine**s**s 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.

Solar Electric

- Solar/Renewable Energy: Total public benefit expenditures on customer owned and operated SB1 compliant renewable energy (solar electric – PV) in FY11 ending June 30, 2011 was $654,875
- Renewable Energy expenditures for SB1 compliant systems equaled 15.32 % of total public benefits dollars spent

Low Income

- Total public benefits expenditures on low income assistance in FY11 ending June 30, 2011 was $259,169 including all overhead
- Low Income expenditures equaled 6.08% of total public benefits dollars spent
- The Roseville Electric Rate Assistance Program (ERAP) provides a 15 percent discount to the standard residential rate for qualified residential customers.
- The Medical Rate Assistance Program, (MedRate) is offered to customers whose income is no greater than specified by HUD as "low income" for Placer County and who use a qualifying medical device. The Program discount is 50 percent of the standard residential rate for the first 500 kWh of usage per billing period and 15 percent of the standard residential rate for usage in excess of 500 kWh.
- The Roseville Utility Exploration Center (UEC) provides scholarships to "Title 1" schools to offset the costs for educational field trips to the UEC.

Demand Reduction

- Demand Reduction: Total public benefits expenditures on demand reduction via a utility controlled radio frequency signal activated residential air conditioning load control system in FY11 ending June 30, 2011 was $133,356 including all overhead
- Demand Reduction expenditures equaled 3.12 % of total public benefits dollars spent
- Residential central air conditioning load control program called *Power Partners,* implementation began in the summer of 2007.
- Utility control switches are the program activator
- Total installed kW of Reduction at year end FY 11: 3802 kilowatts

Research and Development

- Total public benefits expenditures specific to research and development during fiscal year ending June 30, 2011 was $170,979. Research and Development expenditures equaled .06 % of total public benefit dollars spent. Roseville Electric participated in three research and development efforts during FY11.

- **Utility Exploration Center (UEC) ($168,584)**: The UEC is a 4,000 sq. ft. facility in Roseville dedicated to educating ratepayers and school children about energy conservation and a sustainable lifestyle. Open since 2007, UEC is attempting to quantify the contribution of education within the community to reductions in kWh and summer peak (kW) demand. Roseville Electric strongly believes that ratepayer education leads to greater energy efficiency and conservation. RE's incentive and energy efficiency programs are tied into the UEC programs through workshops, special events and the messaging of the interactive displays. The UEC

partners with regional elementary schools to provide UEC tours to approximately 3,000 school children. These tours are designed to meet state grade level educational standards. In support of this belief, since 2005 Roseville Electric has invested $2,200,000 in the design, contraction and operation of the UEC. Roseville Electric contributed $168,584 to UEC operations in FY11.

- **American Public Power Association / DEED membership ($2,395):** DEED is dedicated to increasing efficiency, reducing costs, investigating new technologies and services and improving processes and practices to better serve customers. DEED pools its members' resources to invest in the future technologies and best practices of the electric utility industry. DEED encourages and promotes energy efficiency innovation and funds innovative projects focused on the needs and research interests of its members.
- **Electric car charging stations:** Roseville Electric upgraded 3 older generation electric vehicle charging stations to newer Charge Point technology in FY 11 under a grant program with the Department of Energy funded by the American Reinvestment and Recovery Act.

Non-Public Benefits Expenditures and Activities

- **Educational Programs and Community Outreach**
    - LivingWise: The City owned 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, Summer Solstice, and several educational workshops at the Utility Exploration Center.
- **Energy Conservation Rates**
    - Energy Conservation Rates
    - Residential Service: tiered rated to encourage lower residential use.
    - Large General Service: rates are time-of-use to encourage energy conservation during peak periods.

EM&V and M&V

- RE performed an EM&V on energy claimed in FY11 from trees planted as part of thee 2005 and 2006 Residential Shade Tree program.
- RE performs annual M&V on Residential and Commercial programs based on volume and budget.

American Recovery and Reinvestment Act (ARRA)

- In the fall of 2009, the City of Roseville was awarded $1,073,700 from the Department of Energy. The City approved disbursement of these funds to small business energy efficiency retrofit rebates, City owned facility (9) lighting retrofits and an LED City streetlight pilot project. **IMPORTANT**: Dollars spent and energy efficiency numbers ARE NOT included in the Public Benefit numbers stated above.

- 2010-2011 FY11 program implementation included the following projects:
    - **Small Business Energy Efficiency Retrofits**
    - **Lighting Retrofit Program**
        - Savings: 355 KW Demand Reduction & 1,408,000 KWH/year
        - Dollars Spent: $312,400

        - Rebate designed to cover 100% of standard installation
        - 4 contractors authorized/approved to work in program
        - 55 businesses participated and retrofit over 14,000 items
        - Project Completed

- Reach-In/Walk-In Refrigeration Retrofit Program
    - Savings: 188 KW Demand Reduction & 1,304,000 KWH/year
      Dollars Spent: $257,200
    - Rebate designed to cover 100% of standard installation
    - Awarded the contract to one contractor – direct install program
    - As of June 20, 2011, 78 customers participated and changed out over 8,900 items
    - Total program expected to reach over 125 customers
    - Project still in process
- City LED Street Light Pilot Project
    - Dollars Spent: $43,200
    - Completed equipment RFP to install and evaluate "cobra head" and decorative style fixtures in actual field tests.
    - Third party evaluation and customer survey completed.
    - Final report and recommendations completed and submitted to RE management
    - Results will be used to evaluate future street light specifications in the City of Roseville.
    - Project Completed
- City of Roseville Facility Lighting Retrofit
    - Savings: 85 KW Demand Reduction & 350,000 KWH/year
    - Dollars Spent: $219,000
    - Various lighting retrofits completed in eight (8) City-owned facilities.
    - Over 5,800 items were retrofit.
    - Project completed.

FY12 PROPOSED FUNDING

Proposed Public Benefits Expenditures

- RE projects to spend $4,525,920 on Public Benefits programs based upon a collection of 2.85% of total projected FY12 utility revenues.

Proposed Energy Efficiency Programs

- **Public Benefit Programs**
    - General: Investigate new energy efficient strategies.
        - Continue to investigate, and implement where beneficial, programs shared with other publically owned electric utilities.
        - Bundled whole house programs
        - Thermal energy storage
    - Residential Programs
        - Reduce the number of residential programs that do not have a TRC greater than 1.0.

    - Ensure participation in the BEST Homes programs continues to reach the 10% - 20% participation goal, which was approved by the Roseville City Council. 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.
    - Maintain focus on participation in the residential air conditioner programs, including incentives for replacement and the Power Partners program.
    - Increase educational programs related to energy efficiency and solar system installation.
    - Continue to research and develop energy efficiency programs for low-income customers.
    - Offer "seasonal" energy efficiency programs to the community. (Example, LED Holiday Light Exchange)
- Business/Commercial Programs
    - Hospitality Program: energy controlled in individual hotel rooms
    - T8 high wattage to T8 low wattage lighting retrofits
    - Vending Miser vending machine controls
    - Expanded third party direct install business/commercial programs including Keep Your Cool, a small business refrigeration retrofit program introduced through ARRA grant funds in FY 11.
    - Continue to promote our Customized Program to our large customers.
    - Continue to evaluate and modify the Small Business Lighting program to increase customer participation.
    - Promote the new construction program for businesses so that all new buildings will surpass Title 24 by a minimum of 10 percent.

ROSEVILLE ELECTRIC (RE)

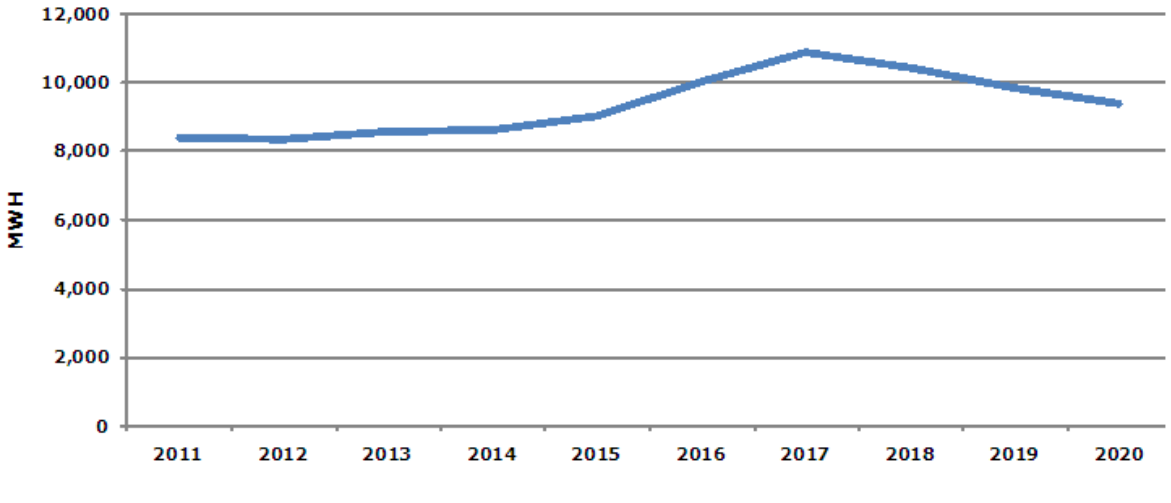
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Roseville		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling	3,528	650	612	596,655	462,064	9,356,529	5,719	$682,478	$326,347	$1,008,825
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	2,153	693	11	214,637	205,485	1,122,887	599	$18,380	$13,275	$31,656
Pool Pump	Res Pool Pump	58	4	4	18,618	15,825	158,253	86	$17,226	$8,019	$25,245
Refrigeration	Res Refrigeration	793	96	96	550,057	440,325	2,266,147	1,229	$73,096	$29,750	$102,846
HVAC	Res Shell										
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	35	130	129	135,360	119,646	2,117,974	1,254	$37,329	$16,378	$53,707
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	17,750	1,094	1,005	6,611,930	6,485,551	98,859,413	53,009	$768,683	$480,957	$1,249,640
Process	Non-Res Motors										
Process	Non-Res Pumps	1	41	41	356,264	356,264	3,562,640	1,982	$21,711	$17,710	$39,421
Refrigeration	Non-Res Refrigeration	1	1	1	77,952	58,464	701,568	370	$971	$3,051	$4,022
HVAC	Non-Res Shell	1	2	2	3,650	2,920	58,400	32	$1,530	$288	$1,818
Process	Non Res Process	1	24	24	77,288	77,288	772,880	407	$35,100	$3,334	$38,434
Comprehensive	Non Res Comprehensive	1	74	74	394,595	394,595	7,102,710	3,745	$45,706	$30,795	$76,501
Other	Other	1	2	2	19,400	15,520	77,600	41	$776	$312	$1,088
SubTotal		24,323	2,811	2,001	9,056,406	8,633,947	126,157,001	68,474	$1,702,986	$930,218	$2,633,204
T&D	T&D										
Total		24,323	2,811	2,001	9,056,406	8,633,947	126,157,001	68,474	$1,702,986	$930,218	$2,633,204

EE Program Portfolio TRC Test	4.30

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

SACRAMENTO MUNICIPAL UTILITY DISTRICT (SMUD)

SMUD Profile

- Total Customers (year-end): 597,097
- Annual Energy Sales to Customers: 10,284,810 kWh (thousands)
- Record Net System Peak Demand – 1 hour: 3,299 MW (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. These goals have now been extended through 2020. 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 2011, SMUD spent $31.5 million for residential and commercial energy-efficiency programs, compared to a budget of $33.1 million.[9] All expenditures are public-goods funded. These programs delivered 23.4 megawatts (MW) of peak-load reduction and 170.6 million kilowatt-hours (GWh) of annual energy savings, compared to annual goals of 24.5 MW and 153.6 GWh.
- For 2012 residential and commercial energy-efficiency programs, SMUD has budgeted $35.7 million in PG funds.[10] These programs are projected to deliver 27.1 MW of peak-load reduction and 169 GWh of annual energy savings.

[9] Includes market research, planning, M&V, and emerging technologies R&D.

[10] Includes market research, planning, M&V, and emerging technologies R&D.

SMUD 2012 Energy-Efficiency Programs

Commercial/Industrial Retrofit Programs

Commercial/industrial energy efficiency retrofit programs for existing buildings and facilities are budgeted for $11.5 million, with goals of 14.4 of peak-load reduction and 84.0 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, retrocommissioning, 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.
- 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.

Residential Programs

Residential energy-efficiency programs for existing homes are budgeted for $15.3 million, with goals of 11.5 MW of peak-load reduction and 73.3 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, windows, attic and wall insulation, solar domestic water heaters, and cool roofs. Two new program components will likely be added in 2012: 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.

- 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.
- 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 about 100 neighbors in similar-size homes with the same heat energy source. 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 $2.4 million, with goals of 1.1 MW of peak-load reduction and 4.7 GWh in annual energy savings.

- Solar Smart Energy Homes: 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 (2-4 years apart), with the intention of evaluating all programs on a continued cyclical basis through 2020. 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 two 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 2012:

Residential—

- Appliance Efficiency
- Equipment Efficiency
- Home Electronics
- Home Electricity Reports

Commercial—

- Prescriptive Lighting (persistence of savings and market potential)
- Retrofit Energy Efficiency

ARRA Stimulus Funded Activities

State Energy Program

- Home Performance Program - SMUD received funding through ARRA funds from the California Energy Commission as part of the SEP program to implement the Home Performance Program (HPP) – a multi-component whole house approach to energy efficiency. The $20M grant was used to provide HERS or BPI audits and home performance retrofits to single and multi-family homes. A low-income weatherization program was also implemented for single family homes to use a reduced scope, but still comprehensive, home audit, which included refrigerator change-outs to more efficient units.

Better Buildings Program

- Neighborhood Program - SMUD was a sub-recipient to Los Angeles County for a competitively bid "Better Buildings Program" Department of Energy ARRA Energy Efficiency and Conservation Block Grant. SMUD's ARRA grant portion of approximately $2.8M supports the market transformation of building performance programs and development of neighborhood engagement strategies. The focus is on engaging two Sacramento neighborhoods to achieve 20% energy savings per participating customer through comprehensive retrofits. A mix of single family, multi-family, and commercial customers are directly benefiting from this grant as the majority of the grant funds are going towards buying down the cost of energy retrofit work through rebates.

SACRAMENTO MUNICIPAL UTILITY DISTRICT (SMUD)

Time Period for Reporting Data: Calendar year ending 12/31/11

SMUD		Resource Savings Summary						Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	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 Mktg, EM&V, and Admin Cost	Total Utility Cost
Appliances	Res Clothes Washers	629	95	95	254,745	3,821,175	1,548	$110,075	$593,416	$703,491
HVAC	Res Cooling	18,108	2,318	2,318	4,641,755	69,626,325	28,199	$1,909,237	$822,309	$2,731,546
Appliances	Res Dishwashers	251	11	11	26,355	395,325	160	$12,550	$234,748	$247,298
Consumer Electronics	Res Electronics	45,408	1,330	1,330	14,620,000	146,200,000	59,211	$862,747	$1,229,920	$2,092,667
HVAC	Res Heating	674	329	329	1,204,360	21,678,480	8,780	$326,890	$160,200	$487,090
Lighting	Res Lighting	2,054,303	5,224	5,224	55,140,000	457,662,000	185,353	$3,634,792	$2,046,101	$5,680,893
Pool Pump	Res Pool Pump									
Refrigeration	Res Refrigeration	6,299	577	577	4,857,975	19,661,088	7,963	$220,465	$934,409	$1,154,874
HVAC	Res Shell	387	26	26	83,060	1,661,200	673	$6,720	$2,264	$8,984
Water Heating	Res Water Heating	40	9	9	115,760	2,315,200	938	$60,000	$10,714	$70,714
Comprehensive	Res Comprehensive	199	60	60	190,000	950,000	385		$1,191,727	$1,191,727
Process	Non-Res Cooking									
HVAC	Non-Res Cooling	468	1,450	1,450	6,580,000	98,700,000	39,974	$831,582	$593,191	$1,424,773
HVAC	Non-Res Heating									
Lighting	Non-Res Lighting	791	6,260	6,260	41,330,000	165,320,000	66,955	$5,013,517	$2,713,789	$7,727,305
Process	Non-Res Motors	208	41	41	300,000	4,500,000	1,823	$212,152	$102,846	$314,998
Process	Non-Res Pumps									
Refrigeration	Non-Res Refrigeration	16			1,730	17,300	7	$203,639	$112,301	$315,940
HVAC	Non-Res Shell									
Process	Non Res Process	20	2,129	2,129	17,465,000	174,650,000	70,733	$254,549	$616,345	$870,893
Comprehensive	Non Res Comprehensive	461	3,580	3,580	23,830,000	198,060,503	80,215	$1,520,293	$1,832,993	$3,353,286
Other	Other								$2,405,711	$2,405,711
SubTotal			23,440	23,440	170,640,740	1,365,218,596	552,914	$15,179,207	$15,602,983	$30,782,190
T&D	T&D									
Total			23,440	23,440	170,640,740	1,365,218,596	552,914	$15,179,207	$15,602,983	$30,782,190

EE Program Portfolio TRC Test (d)	2.85

Excluding T&D

Time Period for Reporting Data: Calendar year ending 12/31/12

SMUD 2012 (Planned)		Resource Savings Summary						Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	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 Mktg, EM&V, and Admin Cost	Total Utility Cost
Appliances	Res Clothes Washers	629	95	95	254,745	3,821,175	1,548	$110,075	$237,273	$347,348
HVAC	Res Cooling	18,108	2,275	2,275	4,641,755	69,626,325	28,199	$2,356,390	$688,567	$3,044,957
Appliances	Res Dishwashers	251	11	11	26,355	395,325	160	$12,550	$25,674	$38,224
Consumer Electronics	Res Electronics	45,408	1,210	1,210	14,620,000	146,200,000	59,211	$1,350,000	$824,256	$2,174,256
HVAC	Res Heating	674	329	329	1,204,360	21,678,480	8,780	$326,890	$222,163	$549,053
Lighting	Res Lighting	2,054,303	4,400	4,400	46,442,570	385,473,331	156,117	$4,162,000	$1,726,821	$5,888,821
Pool Pump	Res Pool Pump	0	0	0	0	0	0	$0		$0
Refrigeration	Res Refrigeration	6,299	577	577	4,857,975	19,431,900	7,870	$220,465	$1,406,244	$1,626,709
HVAC	Res Shell	387	26	26	83,060	1,661,200	673	$6,720	$2,124	$8,844
Water Heating	Res Water Heating	40	9	9	115,760	2,315,200	938	$60,000	$14,317	$74,317
Comprehensive	Res Comprehensive(a)	0	2,620	2,620	5,800,000	0	0	$1,875,000	$2,963,302	$4,838,302
Process	Non-Res Cooking	0	0	0	0	0	0	$0		$0
HVAC	Non-Res Cooling	468	1,660	1,660	7,190,000	107,850,000	43,679	$727,278	$608,351	$1,335,628
HVAC	Non-Res Heating	0	0	0	0	0	0	$0		$0
Lighting	Non-Res Lighting	791	8,960	8,960	49,030,000	196,120,000	79,429	$5,194,568	$2,854,520	$8,049,088
Process	Non-Res Motors	208	80	80	240,000	3,600,000	1,458	$80,000	$57,260	$137,260
Process	Non-Res Pumps	0	0	0	0	0	0	$0		$0
Refrigeration	Non-Res Refrigeration	16	0	0	1,730	17,300	7	$203,639	$112,298	$315,937
HVAC	Non-Res Shell	0	0	0	0	0	0	$0		$0
Process	Non-Res Process	20	2,129	2,129	14,765,000	147,650,000	59,798	$254,549	$517,848	$772,397
Comprehensive	Non-Res Comprehensive(b)	325	3,100	3,100	18,250,000	164,596,320	66,662	$2,465,000	$2,177,308	$4,642,308
Other	Other(c)	0	200	200	10,400,000	0	0	$0	$1,854,921	$1,854,921
SubTotal			27,681	27,681	177,923,310	1,270,436,556	514,527	$19,405,123	$16,293,247	$35,698,370
T&D	T&D		0	0	0	0	0	$0	$0	$0
Total			27,681	27,681	177,923,310	1,270,436,556	514,527	$19,405,123	$16,293,247	$35,698,370

EE Program Portfolio TRC Test (d)	2.47

Excluding T&D

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

- The San Francisco Public Utilities Commission (SFPUC) Power Enterprise provides electricity to municipal customers of the City and County of San Francisco (CCSF) and other customers, serving approximately 2,300 accounts.
- FY 10-11 total electricity sales to customers: 964,360 megawatt-hours (MWh).[11]
- 2010-11 Peak demand: 141 megawatts (MW).
- 124 employees.
- The SFPUC also provides water and wastewater services through its Water Enterprise and Wastewater Enterprise.

The SFPUC's Hetch Hetchy Water and Power system generates an average of 1.6 million MWh of clean energy each year. Power Enterprise's power supply portfolio also includes 7 MW from solar photovoltaic installations. Power Enterprise provides power to meet the municipal requirements of the City and County of San Francisco, including power to operate San Francisco's streetcars, electric buses, street lights, traffic lights, SF International Airport, and other municipal buildings. In FY 10-11 Power Enterprise also provided approximately 40% of Hetch Hetchy generation output to the Modesto and Turlock irrigation districts, and to other customers consistent with prescribed contractual obligations and federal law.

The Power Enterprise is CCSF's lead agency for energy efficiency programs for reducing CCSF's municipal electricity and natural gas consumption. In addition to energy efficiency programs, Power Enterprise is also the lead agency for several renewable generation programs, including municipal solar installations, other renewable energy projects, and CCSF's local solar incentive program, GoSolarSF.

Energy Efficiency Program Highlights

Power Enterprise considers energy efficiency to be an essential component of its resource portfolio, and an important element of its customer service. From 2003 through June 2011, $31 million in spending, directly funded by Power Enterprise, has resulted in approximately 9.48 MW of demand reduction and 39,950 MWh per year of electricity savings.[12] In the current reporting period, FY 2010-11, completed energy efficiency projects are estimated to save 3,630 MWh of electricity per year, based on a total utility cost of $3.55 million, together with an additional $3 million in grant funding. As shown in the

[11] Both electricity sales and peak demand totals exclude wholesale and Treasure Island customers.

[12] These investments also include funding for projects that resulted in 800,000 therms of annual natural gas savings; this SB1037/ AB2021 reporting focuses only on electricity savings.

following table, these totals include 2,440 MWh/yr in savings from projects that were directly funded by Power Enterprise (a $2.8 million cost). The other 1,190 MWh/yr in savings came from projects that were primarily funded with American Recovery and Reinvestment Act (ARRA) federal stimulus funds under the Energy Efficiency and Conservation Block Grant (EECBG), for which Power Enterprise provided an additional $700,000 contribution (19% of project costs).

Breakdown of Energy Efficiency Project Funding Sources - Projects Completed in FY 2010-11

	SFPUC Funding ($)	Non-Utility Funding ($)	Total Cost ($)	Savings (MWh/yr)
SFPUC-program projects	2,857,477	300,000	3,157,477	2,440
EECBG Projects	692,630	3,004,073	3,696,703	1,190
Totals	3,550,108	3,304,073	6,854,180	3,630

Program level highlights for FY 2010-11 include:

- The Direct Install Program saved 1 million kilowatt-hours per year (kWh/yr) in electricity, including completing a challenging HVAC energy retrofit at Davies Symphony Hall;
- The Technical Assistance Program initiated construction on a multi-site HVAC retrofit project for the Port of San Francisco;
- The Civic Center Sustainability District achieved 1.4 million kWh/yr in savings, including retrofit projects at San Francisco's historic City Hall and the Main Library;
- The LED Streetlight Program completed four pilot installations for evaluation;
- For ARRA, Power Enterprise served as grant manager for CCSF's $7 million EECBG grant. For the $3 million portion allocated to Power Enterprise customers, the utility directly implemented 17 projects in health centers, cultural centers and Sheriff Department facilities.

Energy Efficiency Program Goals and Objectives

Power Enterprise's energy efficiency programs have been developed as the result of CCSF's recognition of the importance of conserving scarce resources and reducing costs where possible. From there, specific program priorities have been shaped by numerous local ordinances and resolutions that set aggressive energy efficiency goals. Taken together, these local energy initiatives establish a firm policy commitment to develop and implement robust energy efficiency programs for CCSF's Power Enterprise customers, as well as for other San Francisco residents and businesses.

Examples of these local policy initiatives include:

- CCSF 's Climate Action Plan, developed per San Francisco Board of Supervisors Resolution Number 0158-02 in March 2002;

- The SFPUC's Electricity Resource Plan, first endorsed by the Board of Supervisors in 2002, with an updated Electricity Resource Plan endorsed by the Board in 2011;
- CCSF 's adoption of the State's Energy Action Plan in 2008, including the same priority of loading order – with energy efficiency first;
- CCSF 's Climate Change Goals and Action Plan Ordinance (#81-08), which sets the goal of CCSF 's electric system becoming greenhouse-gas free by 2030.

Municipal energy efficiency action is also called for in CCSF 's Sustainability Plan, and in the San Francisco General Plan. The recent Existing Commercial Buildings Energy Performance Ordinance, adopted in February 2011, requires recurring benchmarking for all municipal facilities, and energy audits of municipally-owned buildings greater than 10,000 square feet. To further improve energy efficiency, CCSF has revised its building codes for residential, commercial and municipal buildings to require all new construction to meet increasingly stricter "green building" standards that minimize energy usage (i.e., 15% better than California energy standards) and to encourage the use of renewable power.

Current Energy Efficiency Programs and Services (FY 2010-11)

Power Enterprise's municipal customers include the San Francisco International Airport and its tenants, the SFPUC itself, the Port of San Francisco and some of its tenants, the Municipal Transportation Agency (Muni), the Department of Public Health, Recreation and Parks, and all other CCSF Departments. Other customers served by SFPUC include municipal streetlights and Fine Arts Museums. Power Enterprise's energy efficiency programs for these customers are varied and in most cases tailored to the particular customer's circumstances. Note that in most cases, the energy efficiency services also reduce a facility's natural gas use, though only electricity savings are reported here.

Project costs and energy savings for each program are provided in the Summary Table at the end of this document. For purposes of this report, for each program area, the summary table includes Power Enterprise's total project costs and projected annual savings for those projects that have completed construction.

- **Direct-Install Program:** The purpose of this program, begun in 2008, has been to accelerate energy retrofits for municipal facilities in an era of budget cuts, and to help customers respond to new local Climate Action legislation. Known as the "General Fund Program," this program provides complete "direct-install" services to certain of the SFPUC's municipal customers for free, including: energy audit, design, 100% funding, contracting services, and project management, with a project-specific evaluation, measurement and verification (EM&V) analysis for all projects.

  The program is targeted for CCSF departments and agencies that are funded primarily through local tax receipts, fees, and federal/state-funded programs. These departments and agencies are considered hard-to-reach (due to their limited access to capital and specialized engineering services, and in most cases, to insufficient price signals). For this program, Power Enterprise developed the first-in-the-nation "job-order contracts" for lighting retrofit and HVAC retrofit contractors. The contracts allow the program to accelerate retrofits, and to control costs and quality, while meeting public sector competitive bid requirements. The program has completed energy retrofits at more than 50 municipal facilities since it was initiated in 2008. In FY 10-11,

$1.7 million in direct-install projects were completed, including aggressive retrofits for Davies Symphony Hall HVAC and for the Hall of Justice lighting system, as well as lighting retrofits at a homeless shelter and at the San Francisco Zoo.

- **Investment Grade Audits and Technical Assistance:** This program provides guidance for revenue-generating departments and agencies to reduce their utility costs through informed retrofit investments. The program focuses on these "enterprise" departments, and offers as its core services investment grade energy audits; the program also offers technical assistance during design and construction of energy retrofits. In some cases, services include complete construction and project management. Power Enterprise has offered project financing to some projects through interdepartmental loans. No projects were completed in FY 10-11; however, active projects were underway with the Port of San Francisco and San Francisco International Airport, which should result in significant savings in future years.

- **Civic Center Sustainability District:** In accordance with a partnership Memorandum of Understanding with the Clinton Global Initiative, this program demonstrates green, renewable and energy efficient technologies as a national model for sustainability in historic districts. The program focuses on seven municipal buildings. The effort employs new technologies in energy efficiency and coordinates with district steam upgrades, renewable energy generation, as well as water and wastewater management efforts. For energy efficiency projects, the program provides free energy audits, design, construction management, construction services, and full funding. Three projects were completed in FY 10-11 at a cost of $1 million; these included lighting and HVAC projects at City Hall, and a large lighting retrofit at the Main Library. In FY 11-12 two more lighting projects are expected to be completed.

- **LED Street Light Conversion Project:** The LED Street Light Conversion Project aims to convert nearly 18,000 high pressure sodium street lights to LED street lights. Power Enterprise owns these street lights and generates the electricity used to power them, and is budgeting $16 million over two years to fund the conversion program. The purpose of the Street Light Conversion Project is to reduce energy use and maintenance costs, and to improve pedestrian and vehicular safety. Total costs and projected annual savings (6,700 MWh/yr) will be reported when the project is complete (expected in FY14-15). In FY 10-11 four pilot installations were completed to allow for evaluation of technology options. Due to the RFP's bid results, however, the construction phase was delayed during FY 11-12, and SFPUC management now has recommended a new contract procurement approach. Meanwhile, the project team continues research efforts on the latest technology in LED fixtures and wireless smart systems applicable to CCSF. Plans and specifications will be modified accordingly.

- **ARRA - Energy Efficiency and Conservation Block Grant (EECBG):** Power Enterprise is administering CCSF's San Francisco's EECBG grant funds awarded through the federal Recovery Act. In FY 10-11 CCSF completed 17 energy retrofit projects in 10 municipal buildings. Total program costs were $3.7 million, of which $3 million was from the EECBG grant. Power Enterprise supplemented these funds with consulting services, and implemented the projects through the utility's direct-install energy efficiency program services. The program will reduce energy use and greenhouse gas emissions by providing improvements to lighting, heating, ventilating and air-conditioning units, boilers, chillers, domestic hot water systems, and building

management systems. In addition, the program created local construction jobs, provided system renewal upgrades for aging equipment, improved indoor environmental quality, and reduced polluting emissions through the replacement of three large boilers. These retrofits included three neighborhood health centers that provide free or low-cost healthcare services, three cultural centers that promote the arts and youth development, three Sheriff's Department facilities, and a neighborhood community center.

- **Green Commissioning and Design Review Program:** To support CCSF departments with development of green buildings, the SFPUC has contracted with three expert firms to provide building commissioning and related green building design review services. Services are available on a fee-for-service basis for municipal new construction, major renovations and existing buildings. Power Enterprise has provided initial funding and pilot phase costs, and expects the program to be self-supporting by fees in the future.

  The commissioning services under this program assure that CCSF's participating green buildings are designed, constructed, commissioned and operated with emphasis on long-term efficiency, reliability and indoor air quality management. The building commissioning team works in parallel with a project's design, construction and operation teams to assure that building systems such as heating, cooling and lighting, are well designed and performance tested through the full range of operating conditions. In addition, the commissioning team ensures that facility staff are well trained to operate the buildings efficiently. In FY 11-12, the first project under this program is expected to be completed: SFPUC's new headquarters building.

Cost-Effectiveness Criteria

Power Enterprise uses simple payback analysis as its primary cost-effectiveness criterion for energy efficiency projects. The analysis typically uses Power Enterprise's average cost of service to estimate cost savings for electricity usage reductions, and each facility's delivered cost of natural gas to estimate cost savings for natural gas usage reductions. For "direct-install" programs, projects usually target a 15 year simple payback (including soft costs and EM&V costs). Longer paybacks on individual measures are allowed under current program rules for long-life capital upgrades, for individual measures included in an overall project that meets the payback criteria, and for technology demonstration efforts.

Evaluation, Measurement and Verification (EM&V) Practices

Currently, the large majority of energy efficiency retrofit projects funded by Power Enterprise include an individual EM&V study, with some variations by program. For the Direct-Install ("General Fund") program, project-level EM&V has been conducted for every retrofit project. The program follows the International Performance Measurement and Verification Protocol (IPMVP). Each project currently includes an EM&V plan with a sampling plan, a logging plan, an approach to data recovery and analysis, and a written report. Lighting projects are evaluated based on IPMVP Option A, which calls for a combination of measured data (from loggers) and stipulated data for kW reductions (from the California Standard Performance Contracting program). For mechanical projects, specific IPMVP options are selected for each energy efficiency measure, depending on conditions.

For the Audits and Technical Assistance ("Enterprise") program, EM&V varies from project-level EM&V studies to simple field verification, depending on the level of capital investment by Power Enterprise. For the Civic Center Sustainability District program, representative projects are being selected for project-level EM&V. For ARRA projects, most projects are receiving project-level EM&V studies. The EM&V approach for the Green Commissioning and Design Review program is still being determined. For reporting purposes, verified savings calculations, as they become available, are used to update estimated savings.

SFPUC Power Enterprise

Time Period: Fiscal Year 2010-2011

San Francisco PUC Power Enterprise	Resource Savings Summary(2)			Cost Summary		
	Savings Summary (Completed Projects)			Cost Summary (Completed Projects)		
Program	kW	kWh/yr	Lifecycle kWh	Utility Incentive & Direct Install ($)	Utility Mktg and EM&V ($)	Total Utility Cost
Direct Install (General Fund)	253	1,030,369	18,376,697	$ 1,693,059	$ 91,798	$ 1,784,857
Technical Assistance (Enterprise Depts)(1)	0	0	0	$ -	$ -	$ -
Civic Center Sustainability District	138	1,409,410	21,773,140	$ 1,039,454	$ 33,166	$ 1,072,620
LED Street Lights(3)	4	4,328	73,576	$ -	$ -	$ -
ARRA Projects(4)	198	1,189,695	18,376,571	$ 598,108	$ 94,522	$ 692,630
Total	**592**	**3,633,801**	**58,599,983**	**$ 3,330,621**	**$ 219,486**	**$ 3,550,108**

(1) Costs for completed projects are reported in the year of completion. This program has no projects completing construction in FY2010-11.
(2) In addition to electricity savings, EE retrofits achieved natural gas savings of 115,000 therms per year.
(3) Demonstration paid for by equipment vendors.
(4) ARRA Projects paid for primarily using federal funds. Costs listed are utility share of project costs.

Time Period: Fiscal Year 2011-2012 (Projected)(1)

San Francisco PUC Power Enterprise	Resource Savings Summary(3)			Cost Summary		
Program	kW	kWh/yr	Lifecycle kWh	Utility Incentive & Direct Install ($)	Utility Mktg and EM&V	Total Utility Cost
Direct Install (General Fund)	287	1,558,021	24,928,342	$ 2,699,378	$ 82,068	$ 2,781,446
Technical Assistance (Enterprise Depts)	36	193,322	3,093,156	$ 21,741	$ 9,450	$ 31,191
Civic Center Sustainability District	89	459,119	7,345,908	$ 456,000	$ 13,500	$ 469,500
LED Street Lights(2)	0	0	0	$ -	$ -	$ -
Commissioning and Design Review	176	777,767	19,444,181	$ 383,325	$ 16,500	$ 399,825
Total	**588**	**2,988,230**	**54,811,587**	**$ 3,560,444**	**$ 121,518**	**$ 3,681,962**

(1) Savings and costs for projected completed projects include a probability factor for completion prior to the end of the reporting period.
(2) Costs for completed projects are reported in the year of completion. This program has no projects completing construction in FY2011-12.
(3) In addition to electricity savings, EE retrofits are estimated to achieve natural gas savings of 120,000 therms per year.

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 4,418 retail customers (meters), of which 4,056 are residential. Residential users account for 24.79 % of annual retail sales. All other accounts (some small commercial and 13 large industrial) account for 75.21% of 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 29.32 megawatts on June 22, 2011, at 6 pm. Total FY sales were 161,250,412 kilowatt 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, refrigeration equipment, 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 the city's electrical customers to answer questions and provide information on energy efficiency and energy savings-related matters.
- Free Energy Audits:. On-site energy audits by city 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.
- Rebate Program: Comprehensive technical support and incentives to facilitate installation of higher efficiency cooling and refrigeration equipment, envelope measures, ENERGY STAR® appliances, and lighting for residential customers.

- Weatherization Incentives: Shasta Lake provides financial incentives for homeowners who invest in weatherization measures, including insulation and window treatments/replacements.

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.
- Commercial Lighting Rebate Program: A commercial lighting retrofit program is offered to businesses in the city's electric service territory. 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. Shasta Lake provides technical assistance and financial incentives for the installation of energy efficient lighting upgrades.
- Commercial Refrigeration Direct Install Program: A commercial refrigeration retrofit program, Keep Your Cool (KYC), is offered to businesses in the city's electric service territory. The KYC contractor audits the age and condition of existing refrigeration equipment and makes recommendations to improve the energy efficiency of equipment. Efficiency measures installed in the KYC program include programmable EC motors, motor controllers, anti-sweat heater control units, LED case lighting, door gaskets, auto door closers and strip curtains.
- Custom Energy Efficiency Projects: Shasta Lake financial incentives for commercial customers are based on site-specific consumption. Incentives are tailored to the individual customer needs based on the audit and the potential energy savings.

Shasta Lake Demand Reduction Programs:

Remote-read meters have been rolled out to nearly all customers.

Performance Results for FY2011

Shasta Lake's AB2021 Energy Reduction Target for FY2011 was 300,000 kWh. In FY2011, the city exceeded their target by 142%, with a total net energy reduction of 724,942 kWh.

Shasta Lake's AB2021 Demand Reduction Target for FY2010 was 81 kW. In FY2011, the city surpassed their annual target, with a total demand reduction of 448 kW.

One large commercial project contributed the bulk of kWh savings and demand savings in FY2011. Knauf Insulation in Shasta Lake completed their 2nd phase of lighting upgrades, which replaced 352 existing fixtures with T-5 High Output lighting. This project resulted in net annual savings of 394,690 kWh (54% of the city's results) and net demand reduction of 124 kW (28% of the city's results). The next largest contribution to FY2011 results was from the Direct Install offer, which served 385 customers and yielded a net annual savings of 196,445 kWh and net demand reduction of 203 kW.

The City of Shasta Lake's FY2011 EE Program Portfolio had a Total Resource Cost (TRC) of 2.05.

FY2012 Forecast

The City of Shasta Lake is forecasting that it will meet the AB2021 targets by continuing to offer a comprehensive suite of energy efficiency rebates and other program offers, with the commercial sector contributing the vast majority of the energy savings. Additionally, the city implemented a comprehensive Residential Audit Program in August of 2010 which successfully increased uptake in the residential sector (234 rebate requests were processed in FY2011 versus 109 in FY2010) and this trend is expected to continue.

The city's energy efficiency rebates were revised for FY2011-FY2013 based on the Measure Quantification Report issued by KEMA in December 2009. The FY2011-FY2013 energy efficiency program reflects a comprehensive suite of measures which encourages residential upgrades through increased rebate levels. The EE Reporting Tool forecast indicates that the FY2012 target of 300,000 kWh can be met with a funding level of $210,000 for rebates and administration; however, the city anticipates their FY2012 funding level will support higher performance results (similar to FY2011).

Shasta Lake Evaluation, Measurement and Verification Activities

In April 2011, the City of Shasta Lake completed an evaluation of its commercial lighting programs. The majority of savings recognized by the City was a result of the second phase of lighting upgrades at the Knauf insulation manufacturing plant. The City is anticipating that Knauf will complete the third and final phase on the lighting upgrade in 2012.

As a practical matter, the City places all of its EM&V reports on the City's website.

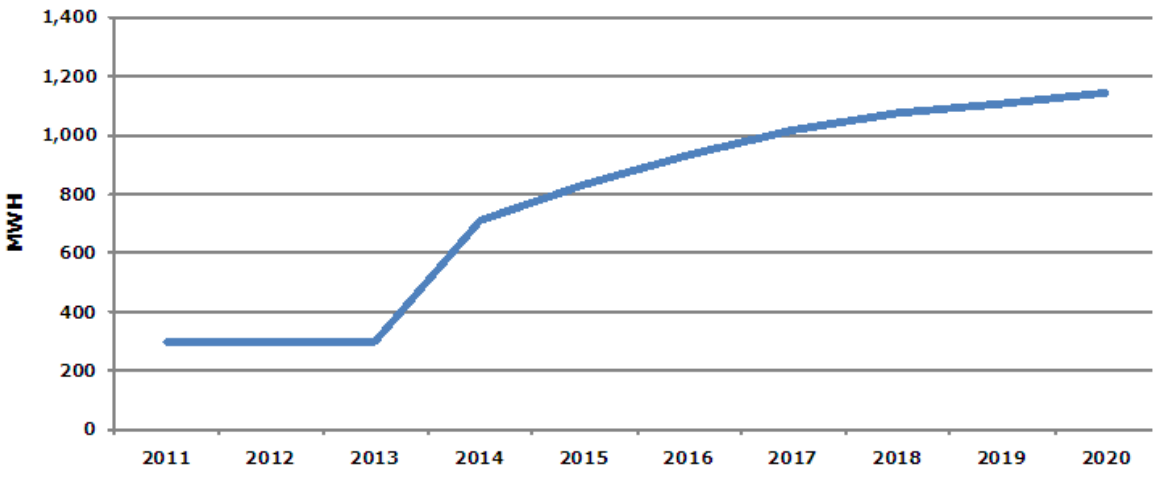
CITY OF SHASTA LAKE

Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Shasta Lake		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	20	19	19	9,420	7,536	90,432	50	$2,775	$8,247	$11,022
HVAC	Res Cooling	71	8	10	11,398	8,414	149,429	91	$21,727	$6,018	$27,745
Appliances	Res Dishwashers	22	4	4	1,452	1,234	13,576	8	$2,355	$1,235	$3,590
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	7,527	209	27	190,704	160,074	800,781	427	$37,654	$6,243	$43,897
Pool Pump	Res Pool Pump	1			596	415	4,152	2	$250	$368	$618
Refrigeration	Res Refrigeration	67	2	2	11,966	8,974	125,260	68	$8,950	$10,494	$19,444
HVAC	Res Shell	320	56	56	31,894	22,723	513,193	300	$57,354	$17,568	$74,922
Water Heating	Res Water Heating	90			11,125	8,821	88,833	54	$2,035	$2,084	$4,119
Comprehensive	Res Comprehensive	1	15	15	47,024	37,619	188,096	115		$58,832	$58,832
Process	Non-Res Cooking										
HVAC	Non-Res Cooling										
HVAC	Non-Res Heating	2			182	146	1,456	1	$30	$22	$52
Lighting	Non-Res Lighting	421	133	133	536,552	431,401	6,425,178	3,561	$62,050	$28,049	$90,099
Process	Non-Res Motors										
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	1	3	3	43,199	37,583	338,251	178	$7,186	$2,682	$9,868
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		8,542	448	268	895,511	724,942	8,738,637	4,856	$202,365	$141,842	$344,207
T&D	T&D										
Total		8,542	448	268	895,511	724,942	8,738,637	4,856	$202,365.08	$141,842	$344,207

EE Program Portfolio TRC Test	2.05

Energy Savings Targets 2011-2020



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%

SILICON VALLEY POWER

SILICON VALLEY POWER, CITY OF SANTA CLARA (SVP)

- Established in 1896
- 52,464 customers; 84% are residential customers but only 8.7% of power sales are residential. 87.4% of sales are to the 1,839 industrial customers. SVP projects an average increase of 1% annually in sales.
- Peak demand: 469.8 megawatts in 2010; 70.9% load factor.
- Annual energy use: 2,772 gigawatt-hours in 2010.
- SVP owns power generation facilities. Has invested in joint ventures that produce electric power and trades on the open market. 25.1% 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 90.5% of the sales. Total program expenditures are about $6-7 million per year. Total program cost for energy efficiency programs in fiscal year 2010-2011 was $5,003,622 ($7,576,933.33 on all public benefit programs), resulting in 3,103 kW net demand reduction and 24,575,528 kWh net reductions. Since 1998, total program costs for all public benefit programs were $72,708,813, resulting in over 296.8 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).
- Retrocommissioning (RCx): Provides commissioning and retro commissioning services to data centers, commercial buildings, educational facilities, and hotels.
- EnergySmart Program: This program incorporates the measures that were previously funded under the "Keep Your Cool" and "Express Refrigeration" programs when those programs expired 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.
- Data Center Optimization Program (DCOP): This program targets 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.
- SVP Sustainable Preschools Program: This program targets preschools and will provide technical assistance, contractor management and incentives for the installation of energy efficiency measures.
- 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. Rebate structure is designed to decline over time as more PV is installed in SVP's service territory, similar to the California Solar Initiative program. Businesses can receive rebates that started at $3.00 per output watt up to a total of $300,000 per customer for systems up to 100 kW. (Current rebate level at the time of this report is $1.50 per watt.) Businesses installing systems between 100kW and 1 MW are eligible for a Performance Based Incentive starting at $0.40 per kWh. Current rebate level at the time of this report is $0.20 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, if applicable). The Solar Explorer and the SVP information booth participate in major city events, providing education on energy efficiency and solar electric generation systems.
- 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.
- Electric Heat Pump Water Heater: Provides a rebate of up to $1,000 for replacing an existing electric water heater with an Energy Star Heat Pump Water Heater.
- 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 is located at the Bill Wilson Center and was completed in the Fall of 2010.
- 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 started at $4.50 per watt and under a declining scale similar to the California Solar Initiative program, and is currently at $2.50 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 6/30/11.

Proposed Energy Efficiency Programs and Services: **(for 2011-12)**
(Continuation of Existing Programs)

Commercial Customer Programs:

- Small Business Efficiency Services Program
- Business Audits
- Business Energy Information
- Business Rebates
- Energy Innovation Program
- LEED Rebate for Energy Efficient Building Design
- Business Solar Photovoltaic Rebate
- Laboratory Energy Management Program
- Retrocommissioning (RCx)

Residential Customer Programs:

- Residential In-Home Energy Audits, Education, and Hot Line
- Residential Appliance Rebates
- Residential Insulation Rebates
- Neighborhood Solar Program
- Rate Assistance Program
- Low-Income Refrigerator Replacements
- Refrigerator & Room Air Conditioner Recycling
- Electric Heat Pump Water Heater

Community Programs

- Public Facilities' Energy Efficiency Program

(Modifications to Existing Energy Efficiency Programs and New Programs)

Business Customer Programs:

- Enhanced Automation Program: This pilot program ended on March 31, 2011. We are evaluating the results of this controls-based program, which was popular with customers. We would like to see the persistency of savings before this is re-launched into a regular program.
- Energy Smart Program: This program ended on April 30th, 2011. After approximately 4 years of offering refrigeration programs, the contractors have saturated the market. The remaining customers who have not participated in the program will still be eligible to receive rebates for the upgraded equipment through our prescriptive refrigeration and food service rebate programs.
- Data Center Optimization Program (DCOP): This program ended on April 1, 2011. While the contractor engaged in discussions with a number of small data centers over the three years that this program ran, very few projects moved into the next phase of implementation. SVP will pursue a more focused program targeted at small data centers.
- Data Center Airflow Optimization Program: This program was introduced in November 2011 after reviewing studies about the most cost-effective ways to save energy in this market segment and

surveying customers regarding their interest and commitment to a program of this design. This program replaces the Data Center Airflow Optimization Program.

- SVP Sustainable Schools Program: The SVP Sustainable Preschools program was successful with the preschools and those operating in facilities that also serve K-12 students indicated an interest in the program. At the end of the contract, the program was expanded to include the K-12 schools and its name changed to reflect the broader scope.

Residential Customer Programs*:*

- LED Light Bulb Rebates: SVP will add a rebate for Energy Star LED light bulbs.
- LED Television Rebate: SVP will offer a limited-time rebate for LED back-lit and LED edge-lit televisions during the peak shopping season for televisions, which is November 1, 2011-January 31, 2012.

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 are being administered under the municipal electric utility, Silicon Valley Power, and will be spent on the following programs:

- Retrocommissioning (RCx) 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 & Multi-family Weatherization Program

During this fiscal year, SVP worked with its RCx contractor to complete RCx studies on the Santa Clara Convention Center and several other City facilities. Implementation of the recommended measures was completed in two facilities and the others are underway. The LED Pedestrian Signal Retrofit Project was completed in April 2011 and the Low Income & Multi-family Weatherization program was about 50% subscribed by the end of the fiscal year. By the end of the fiscal year, we entered into a contract for the LED Lighting retrofits and began work on the Public Works Bid documents for the PV System at Henry Schmidt Park. We expect to complete all projects with the exception of the PV system installation by the end of FY 2011-2012. The PV system is expected to be complete in the first quarter of FY 2012-2013.

Demand Reduction:

SVP has a load factor of 70.9%, 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, and the FY 2008-2009 energy efficiency programs, which was completed in December 2009. Summit Blue was acquired by Navigant Consulting and evaluated SVP's FY 2009-2010 energy efficiency programs under the new name. SVP is currently undergoing EM&V of its 2010-2011 energy efficiency programs and has contracted with The Cadmus Group for this study. By utilizing a new EM&V consultant, SVP hopes to see if another perspective may provide additional insight into ways to improve its programs and customer participation. Results of this study were published in February 2012.

SILICON VALLEY POWER

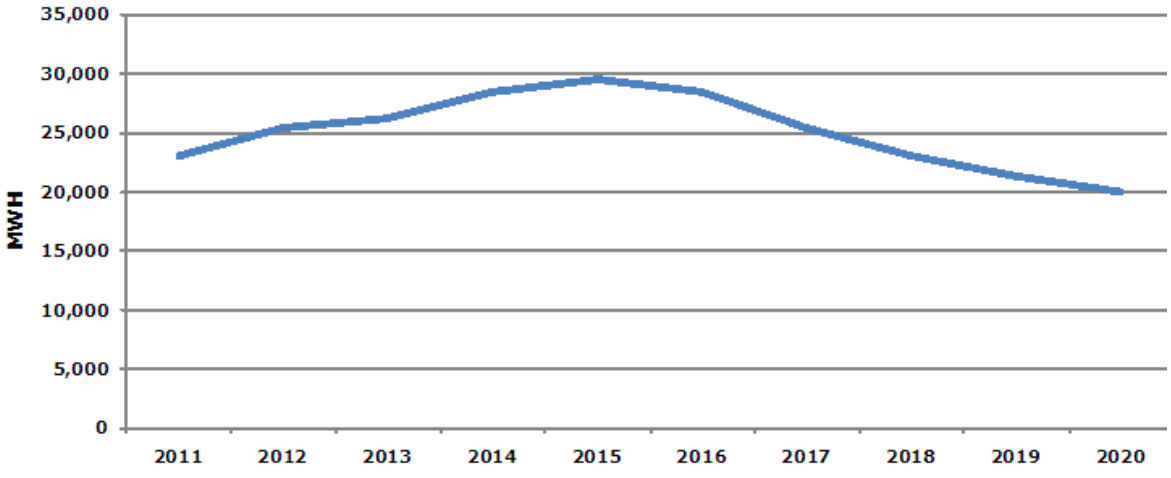
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Silicon Valley		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	32	4	4	1,984	1,686	20,237	11	$ 3,200	$ 145	$ 3,345
HVAC	Res Cooling	56	1	1	3,311	2,649	30,312	18	$ 4,400	$ 218	$ 4,618
Appliances	Res Dishwashers										
Consumer Electronics	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	1,165	96		25,358	23,495	129,379	69	$ 6,783	$ 929	$ 7,711
Pool Pump	Res Pool Pump	1			321	221	2,215	1	$ 200	$ 16	$ 216
Refrigeration	Res Refrigeration	700	51	51	370,904	245,993	1,454,517	789	$ 72,068	$ 10,442	$ 82,510
HVAC	Res Shell	36	7	7	11,169	7,818	156,366	95	$ 6,300	$ 1,123	$ 7,423
Water Heating	Res Water Heating	5			13,925	11,836	118,363	63	$ 5,000	$ 850	$ 5,850
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking	1			4,419	3,756	15,025	8	$ 750	$ 108	$ 858
HVAC	Non-Res Cooling	2,746	1,074	861	27,492,558	23,367,395	308,829,598	164,678	$ 2,207,023	$ 2,217,139	$ 4,424,162
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	11,065	2,128	1,415	2,012,662	1,709,972	22,392,551	12,410	$ 187,095	$ 160,760	$ 347,855
Process	Non-Res Motors										
Process	Non-Res Pumps	1	13	13	35,488	30,165	301,648	160	$ 3,904	$ 2,166	$ 6,069
Refrigeration	Non-Res Refrigeration	914	27	25	236,267	200,827	1,651,775	872	$ 14,722	$ 11,858	$ 26,581
HVAC	Non-Res Shell										
Process	Non Res Process	29			54,798	46,578	93,156	49	$ 6,149	$ 669	$ 6,818
Comprehensive	Non Res Comprehensive	6			66,357	56,404	1,081,488	601	$ 23,855	$ 7,764	$ 31,619
Other	Other										
SubTotal		16,757	3,402	2,380	30,329,521	25,708,795	336,276,629	179,826	$ 2,541,448	$ 2,414,186	$ 4,955,634
T&D	Industrial										
Total		16,757	3,402	2,380	30,329,521	25,708,795	336,276,629	179,826	$ 2,541,448	$ 2,414,186	$ 4,955,634

EE Program Portfolio TRC Test	**2.39**

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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 all of its 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.
- TPUD is comprised of nine small substations serving 560 miles of distribution line.
- TPUD has a peak coincident demand of approximately 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 2010 TPUD public benefits expenditures on energy efficiency total approximately $337,000 and have resulted in kilowatt-hours savings of more than 165,000 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 2012)

- 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

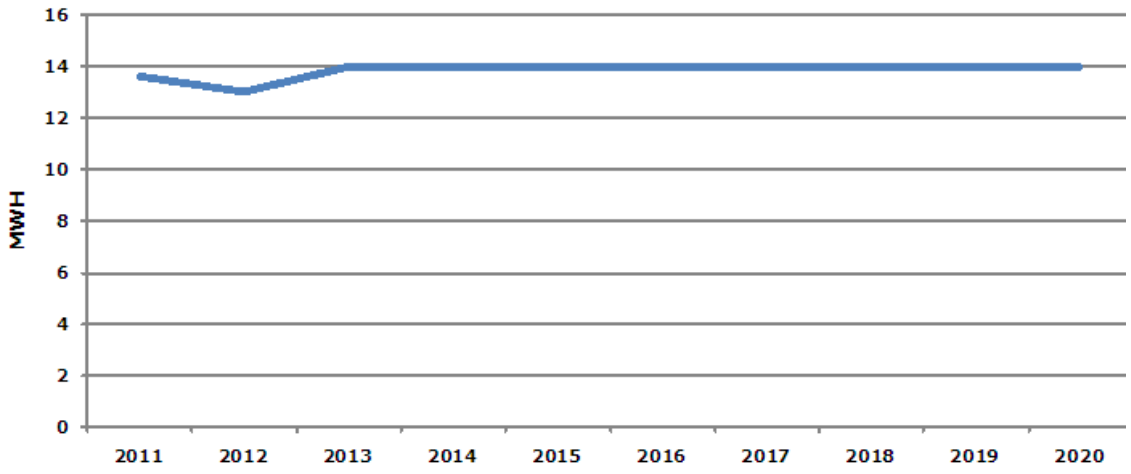
Time Period for Reporting Data: Fiscal year ending 6/30/2010

Trinity PUD		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting										
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration										
HVAC	Res Shell	1			8,762	8,762	175,248	106	$32,659		$32,659
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		1			8,762	8,762	175,248	106	$32,659		$32,659
T&D	T&D										
Total		1			8,762	8,762	175,248	106	$32,659		$32,659

EE Program Portfolio TRC Test	0.70

Excluding T&D

Energy Savings Targets 2011-2020



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%

TRUCKEE DONNER PUBLIC UTILITY DISTRICT

- Established in 1927
- 13,165 customers, 88 percent are residential
- TDPUD projects an average growth rate of 1 percent per year, for the next 10 years
- 2011 Peak demand – 32.8 megawatts (winter peaking)
- 2011 Energy Use – 150 gigawatt-hours

TDPUD Energy Efficiency Program Highlights

- In 2011 (calendar-year accounting), the Truckee Donner Public Utility District (TDPUD) continued to make significant investments in our Public Benefits and energy efficiency programs. This included Public Benefit and energy efficiency spending of ~4.5% of gross electric sales with a 2012 budget also at ~4.5% of gross electric sales. In 2011, the TDPUD's energy efficiency results included a first year energy savings of over 2.2% of gross electric sales with a TRC of 2.81.
- In 2011, the TDPUD continued to grow three new energy efficiency programs (Residential Energy Survey, Green Schools – 'Trashion Shows', and Neighborhood Resource Mobilization/Block Party Programs) 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 TDPUD's 'Save Energy, Save Money' message is gaining traction with our customers. However, the customer's ability to make the investments necessary to implement cost effective energy efficiency projects remains 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 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 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 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 screw-in CFL lighting programs which the TDPUD is beginning to saturate and which, unfortunately, are being prematurely discounted by the regulatory bodies.

2011 Highlights Include:

- Implemented programs with calculated reduced electric usage of over 2.2% 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 2011 programs and completed the final EM&V report within 3-months of calendar year 2011 end. The EM&V report concluded: Net Annual kWh Savings of 3,400,293 kWh, Net Lifecycle kWh Savings of 30,824,381 kWh, Net Peak kW Savings of 1,136 kW, and a TRC of 2.81.
- Delivered public benefits and energy efficiency programs for a cost of less than $0.031/kWh which is less than one half of the District's power purchase costs and a small fraction of the customer's rate.
- Continued to deliver the District's income qualified program, Energy Saving Program (ESP), targeting residential energy efficiency and weatherization measures (many low-income customers have electric heat). 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 (seven types of CFL's, piping/water heater insulation, door sweeps, etc.). To implement the program, the TDPUD partnered with a local non-profit (Family Resource Center of Truckee) 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.
- Expanded the Residential Energy Survey (RES) Program which is the free energy survey component of the TDPUD's low-income program. RES includes a walk-through visual survey of a customer's home and energy conservation measures provided for free at the time of the survey (Seven types of CFL's, piping/water heater insulation, door sweeps, etc.). The TDPUD estimates that this program has a simple payback of 2-3 years along with tremendous educational and customer relationship benefits.
- Partnered with the Truckee Tahoe Unified School District (TTUSD) and the Sierra Watershed Education Partnership (SWEP) on the Truckee High School Envirolution Club's 'Trashion Shows' when the District distributed over 1,800 conservation kits (low-flow hose spray nozzles with a flyer on energy/water conservation) to every elementary and middle school student in the TDPUD's territory. The 'Trashion Shows' are a combination of science, art, and peer-to-peer education led by the Truckee High School Envirolution club. The students develop runway-quality costumes out of trash, each with a conservation or environmental message. 'Trashion Shows' were held at general assembly's at each elementary and middle school and the TDPUD's conservation kits were integrated into the show and then distributed, by the high school students, to the younger children at the end of each show. This partnership was very cost-effective in delivering important energy and water savings measures to our customers. The benefits of the peer-to-peer education and leadership of the high school students was invaluable.
- Collaborated with the Town of Truckee, Nevada County, and other local public agencies to develop and pilot the concept of delivering services and programs directly to a neighborhood. With a tag-line of 'Public Agencies Together….One Neighborhood at a Time', the concept was piloted in the Olympic Heights neighborhood of Truckee in 2010 with a block-party format where each local public agency brought their respective programs and services. For the TDPUD,

this included handing out 7-types of CFL's for free and offering a free on-the-spot residential energy survey through the new RES Program. It is estimated that ~25% of the neighborhood residents attended the 4-hour event and the customer feedback on the event was overwhelmingly positive. Based on those solid results, the program was expanded in 2011 to include two events: Prosser Lakeview and greater Sierra Meadows neighborhoods. The customer response remains very positive.

- Significant investments in community outreach, communications, and marketing are tapping increasing interest in energy efficiency programs. As an example, the TDPUD's annual LED (Light Emitting Diode) Holiday Light Program achieved ~5 percent customer participation over a 3-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.

2011 Commercial Customer Programs

- 'Keep Your Cool' Commercial Refrigeration Program: This direct-install program was developed by NCPA for their member utilities in 2009 and targets cost-effective commercial refrigeration measures (door gaskets, strip-curtains, and door closers). This program was oversubscribed in 2009 and the TDPUD increased funding in 2010 along with adding 4 additional measures (Programmable Electronically Commutated (EC) Motors, Evaporator Fan Controllers, Anti-Sweat Heater (ASH) Controls, and Vending Machine Controllers). This program was continued in 2010 with solid results.
- Commercial LED Exit Sign Retrofit Program: This direct-install program was developed by the TDPUD to retrofit existing incandescent and fluorescent exit signs using a local contractor and 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.

2011 Business Partnership Programs (Green Partners)

- This program is largely based on provide free screw/plug-in CFL and LED light bulbs to businesses to replace older, inefficient lighting.
- 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 and sell energy-efficient products.

- 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.

2011 Residential Customer Programs

- Energy Saving Program (ESP): Continued a new income qualified program targeting residential energy efficiency and weatherization measures (see 2011 Highlights above).
- Residential Green Partners: This new program in 2009 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 and track lights to globes to flame tips to outdoor lights to dimmables). Based on the data collected, the TDPUD continues to hand out for free, 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), 120-watt equivalent outdoor floods (PAR30's), and 100-watt equivalent spiral 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 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. Customers must participate in the TDPUD Residential Energy Survey Program (See 2011 Highlights above) and have high bills to participate in this program.
- 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.
- 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.

2011 Community Programs

- Energy Conservation & Efficiency Workshops: TDPUD staff offered numerous energy conservation and efficiency seminars and workshops in 2011.

- Million CFL Program: The Million CFL program is a 10-year program that was started in 2008 and 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 2011, this cost-effective program served ~5% of our customer base in a 3-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, the Town of Truckee, and the Contractors Association of Truckee Tahoe (CATT) 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 other local groups to provide tours of residential and commercial buildings in the community that incorporate green building design features**.**

2011 Education Programs - Public Schools & Community:

- Energy Education: TDPUD personnel give presentations on energy topics to local schools each year.
- 'Trashion Shows': Partnered with the Truckee Tahoe Unified School District (TTUSD) and the Sierra Watershed Education Partnership (SWEP) on the Truckee High School Envirolution Club's 'Trashion Shows' when the District distributed over 1,800 conservation kits (low-flow hose spray nozzles with a flyer on energy/water conservation) to every elementary and middle school student in the TDPUD's territory. The 'Trashion Shows' are a combination of science, art, and peer-to-peer education led by the Truckee High School Envirolution club (See 2011 highlights). The benefits of the peer-to-peer education and leadership of the high school students was invaluable.
- Green Building Symposium: TDPUD helps organize and conducts a presentation at the Truckee Home Show's annual Green Building Symposium.

2011 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. A new TDPUD website and on-line rebates system is planned for 2012.

2011 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, weekends, and holidays. However, many of our energy efficiency programs address our unique load profile.

2011 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 began billing water by usage in 2011. 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 with replacing our traditional lawn with a variety of native bunch grasses that can use 2/3 less water.
- Commercial Smart Water Controller Program: This direct-install program was piloted in 2010 and includes the installation of a water irrigation system that, through wireless technology, taps into weather forecasts and actual Doppler radar to minimize water use. The District continues to evaluate this program to determine if it is cost-effective given our very short irrigation season.
- Commercial Water Conservation Rebate Program: TDPUD offers rebates to commercial customers for the installation of water-saving measures including water-efficient clothes washers, low-flush toilets; waterless urinals and other water saving devices.
- Residential Water Conservation Rebate Program: TDPUD offers financial rebates to residential customers for the installation of water-saving measures including water-efficient clothes washers, low-flush toilets, and for repairing water leaks. TDPUD also hands out for free low-flow showerheads and faucet aerators.
- Landscape Water Conservation Workshops: TDPUD partnered with local nurseries to conduct landscape water conservation workshops for the community.

TRUCKEE DONNER PUBLIC UTILITY DISTRICT

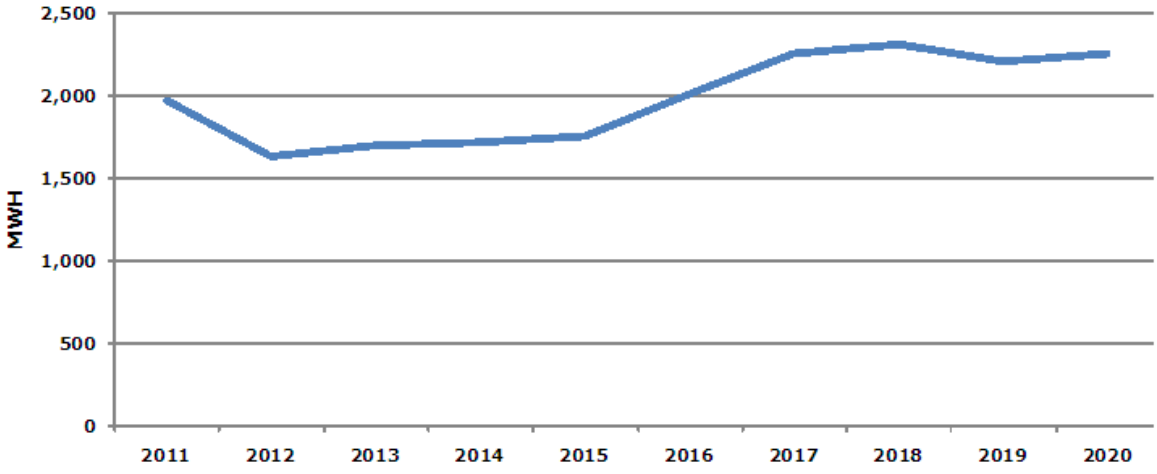
Time Period for Reporting Data: Calendar year ending 12/31/2011

Truckee Donner		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	224	5	5	45,984	34,948	419,379	232	$22,400	$4,959	$27,359
HVAC	Res Cooling										
Appliances	Res Dishwashers	177	1	1	11,385	9,108	100,184	55	$17,700	$3,918	$21,618
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	46,733	1,956	863	3,008,775	2,058,458	18,806,879	10,040	$185,326	$165,300	$350,626
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	233	8	8	54,315	43,597	399,026	216	$23,780	$5,267	$29,047
HVAC	Res Shell	34	1	1	1,349	1,054	18,976	11	$5,175	$1,186	$6,361
Water Heating	Res Water Heating	6,447	4	4	44,962	34,687	359,920	193	$21,099	$14,569	$35,668
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling										
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	4,046	216	216	1,011,801	870,068	7,607,262	4,216	$147,796	$86,443	$234,239
Process	Non-Res Motors										
Process	Non-Res Pumps	1,800	4	4	13,455	10,764	53,819	29	$11,569	$6,827	$18,396
Refrigeration	Non-Res Refrigeration	15	18	18	212,299	201,684	1,613,476	851	$52,463	$49,360	$101,823
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other	910	16	16	175,420	135,926	1,445,560	781	$92,830	$49,869	$142,699
SubTotal		60,619	2,229	1,136	4,579,745	3,400,293	30,824,481	16,624	$580,138	$387,698	$967,836
T&D	T&D										
Total		60,619	2,229	1,136	4,579,745	3,400,293	30,824,481	16,624	$580,138	$387,698	$967,836

EE Program Portfolio TRC Test	2.81

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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:

- 99,541 customers
- 72% are residential
- Peak demand 491 MW (2011 Summer Peak)
- 2011 energy use: 1,895 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 2010, the goal was to conserve 12,900 megawatt-hours of electricity.

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.

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
    - Radiant Barrier

- Shade Tree Rebate: TID provides rebates for up to 3 trees per year that are planted to provide shade.
- Refrigerator Recycling: TID will pay customers to dispose 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.
- Solar Attic Fan: TID provides a rebate to customers who purchase and install a new solar attic fan.

Time Period for Reporting Data: Calendar Year ending 12/31/11

PROPOSED NEW ENERGY EFFICIENCY PROGRAMS (2011):

- ***Non-Residential Customers***
    - TID will contract a vendor to install vending miser/cooler misers for customers with refrigerated vending machines and/or glass front coolers. Additionally, the program will install spray valves, aerators and showerheads for customers who have electric water heating.

- ***Residential Customers***

- TID is partnering with Stanislaus and Merced County Public Libraries to promote energy efficiency by providing electricity usage monitors to patrons. Customers will be able to easily measure appliances consumption and determine how they impact their energy bills.
- TID will partner with local cities to improve the Energy Star Washing Machine program by combining rebates and increasing the benefit to customers.

- TID will continue to review our rebate programs to ensure that all cost-effective energy efficiency is achieved. TID is committed to evaluating and exploring program offerings until all cost-effective energy efficiency is achieved in our service territory.

MODIFICATIONS TO EXISITING ENERGY EFFICIENCY PROGRAMS: (2012)

- 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.
- Window Replacement: TID has a program to provide replacement of inefficient windows for families who meet the income qualification guidelines. The program allows customers to purchase windows for a discounted amount and requests them to install them on their own. Assistance is available for those are unable to install.

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
- 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 offers solar rebates for customers that are interested.
- 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.

RESEARCH, DEVELOPMENT & DEMONSTRATION:

While TID did not perform any research and development projects in 2011, TID is continually looking for opportunities to develop new methods for improving energy efficiency and renewable opportunities.

TURLOCK IRRIGATION DISTRICT

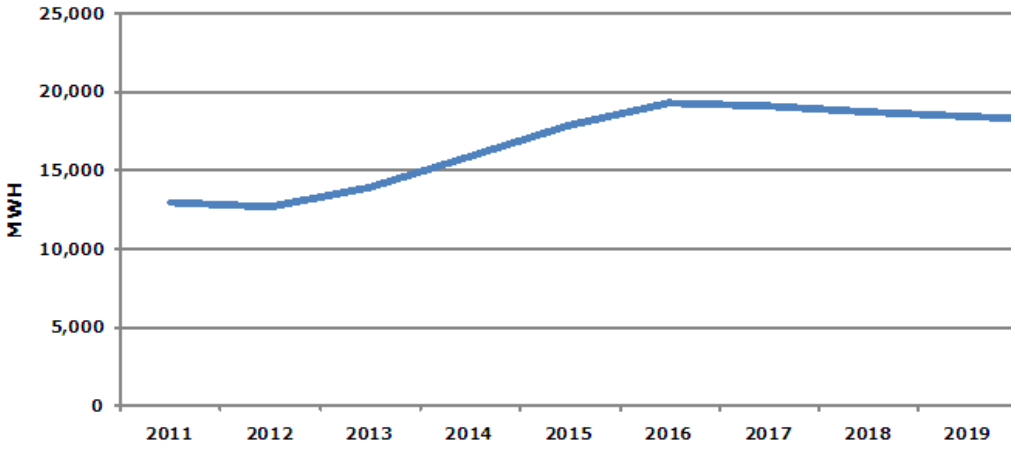
Time Period for Reporting Data: Calendar Year ending 12/31/2011

Turlock ID		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	1,001	10	10	29,029	23,223	232,232	128	$ 35,035	$ 1,477	$ 36,512
HVAC	Res Cooling	324	23	23	50,088	40,070	1,046,801	669	$ 45,666	$ 9,462	$ 55,128
Appliances	Res Dishwashers										
Consumer Electronics	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	1,860	2		260,385	258,956	2,324,888	1,241	$ 66,518	$ 13,987	$ 80,505
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	955	53	53	231,875	185,500	1,594,338	865	$ 33,425	$ 29,097	$ 62,522
HVAC	Res Shell	75	16	16	21,223	16,978	180,872	102	$ 10,543	$ 1,223	$ 11,766
Water Heating	Res Water Heating										
Comprehensive	Res Comprehensive	53,259			19,706	15,765	315,293	178	$ 21,304	$ 2,363	$ 23,666
Process	Non-Res Cooking										
HVAC	Non-Res Cooling	2	20	20	21,017	16,814	302,645	168	$ 1,051	$ 2,099	$ 3,150
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	40	283	283	2,679,322	2,143,458	23,578,034	13,067	$ 161,315	$ 150,181	$ 311,496
Process	Non-Res Motors	10	71	71	747,627	598,102	8,971,524	4,771	$ 37,131	$ 56,916	$ 94,047
Process	Non-Res Pumps										
Refrigeration	Non-Res Refrigeration	29	117	118	1,288,441	1,030,753	4,123,012	2,174	$ 47,041	$ 21,448	$ 68,489
HVAC	Non-Res Shell										
Process	Non Res Process										
Comprehensive	Non Res Comprehensive										
Other	Other										
SubTotal		57,555	595	594	5,348,713	4,329,618	42,669,638	23,363	$ 459,028	$ 288,252	$ 747,280
T&D	T&D										
Total		57,555	595	594	5,348,713	4,329,618	42,669,638	23,363	$ 459,028	$ 288,252	$ 747,280

EE Program Portfolio TRC Test	1.56

Excluding T&D

Energy Savings Targets 2011-2019



	2011	2012	2013	2014	2015	2016	2017	2018	2019
MWH	12,900	12,644	13,829	15,846	17,814	19,269	19,075	18,675	18,379
% of Load Forecast	0.63%	0.60%	0.64%	0.72%	0.79%	0.84%	0.82%	0.79%	0.76%

UKIAH PUBLIC UTILITY

History and Load Data

- The City of Ukiah is Mendocino County's only customer-owned electric utility.
- The City of Ukiah supplies electricity to approximately 16,000 plus residences and businesses.
- Peak demand: 36 megawatts – July 2006
- Annual energy use: 115,000 megawatt-hours
- Power content (2010): Geothermal 39.9 percent, small hydro 11.9 percent, large hydro 17.5 percent 30.8 percent Unspecified. [51.7 percent eligible renewable]
- Renewable generation from hydropower and geothermal provide 69.2 percent of Ukiah's power needs.

City of Ukiah Energy Efficiency Program Overview

The City of 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, refrigeration equipment, 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 city personnel is available for our customers to answer questions and provide information on energy efficiency related matters.
- Energy Audits: On-site energy audits by city 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.
- Appliance Rebates: The city provides rebates for the purchase of several ENERGY STAR® Qualified appliances.
- Residential Heat Pump and Efficient Air Conditioning Rebates: The city offers rebates for residential and small business customers who install high performance heat pumps or air-conditioners that exceed current state efficiency requirements
- Residential Lighting Rebates: The city offers rebates to homeowners who install ENERGY STAR Qualified compact florescent lamps (CFLs) and LED holiday lights.
- Weatherization Rebates: The city offers rebates to homeowners who invest in weatherization upgrades, including insulation and windows.

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 the city.
- Keep Your Cool: This offer provides a free, no obligation check of commercial refrigeration equipment. Castrovilla, the Keep Your Cool (KYC) contractor, examines the condition of fan motors, controls, case lighting, door gaskets, strip curtains and door closers. If Castrovilla finds that the current equipment is in need of replacement or upgrading, recommendations are made to customers to have the appropriate equipment installed. Most measures are installed at no cost to the customer, while other measures may require customer co-pay.

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 FY2010

For FY2011-FY2013, Ukiah's City Council adopted energy efficiency goals that increased our EE goals by 30%. In FY11, an increase in participation in the commercial lighting program, and several parking lot lighting upgrades allowed Ukiah to substantially exceed our FY11 EE goal.

The City of Ukiah's AB2021 Energy Savings Target for FY2011 was 250,000 kWh. In FY2011, the city exceeded their annual goal by 338%, with a total net energy reduction of 1,095,800 kWh.

The City of Ukiah's AB2021 Demand Reduction Target for FY2011 was 68 kW. In FY2011, the city surpassed their annual goal, with a total net demand reduction of 345 kW.

The largest contributor to FY2011 savings was the Commercial Lighting Retrofit Program which yielded 1,084,125 net annual kWh and 322 net demand kW.

The City of Ukiah's EE Program had a Total Resource Cost (TRC) of 1.22 in FY2011.

FY2012 Forecast

The City of Ukiah is forecasting that it will meet or exceed their AB2021 Energy Savings and Demand Reduction targets for FY2012. The city anticipates that commercial lighting and Keep Your Cool will deliver the vast majority of the energy savings.

The city's EE rebates were revised for FY2011-FY2013 based on the Measure Quantification Report issued by KEMA in December, 2009. The FY2011-FY2013 EE program reflects a comprehensive suite of

measures which are cost-effective based on the rebate level offered and the quantified savings in the KEMA report. The city's forecast indicates that the AB2021 goal of 250,000 kWh can be met with a funding level of $215,000 for rebates and administration; however, the City of Ukiah has consistently exceeded the established goals within budget and project the same performance over the next year.

Evaluation, Measurement and Verification

Utilities have the option of performing EM&V reports annually, or once every three years. Ukiah is planning to perform an EM&V report for FY11-FY13.

ARRA Activity

In the fall of 2009, the City of Ukiah joined in a coordinated proposal that included Biggs, Gridley, Healdsburg and Ukiah to install LED street lighting as a demonstration project to test their efficacy and energy savings. The proposal was coordinated by the Northern California Power Agency (NCPA) and submitted as an Energy Efficiency Conservation Block Grant to the California Energy Commission (CEC) under the federal stimulus - ARRA program. The proposal received CEC approval in the fall of 2010.

The demonstration project replaces 118 high pressure sodium street light (41-150Watt & 77-250Watt) with Copper 5 bar LED lights. The lights are scheduled to be installed in Quarter 1 of 2012 along State Street, a major street with the City of Ukiah. Estimated installed cost is $107,000 with an approximate energy savings of 14.9 kW or 65,550 kWh per year.

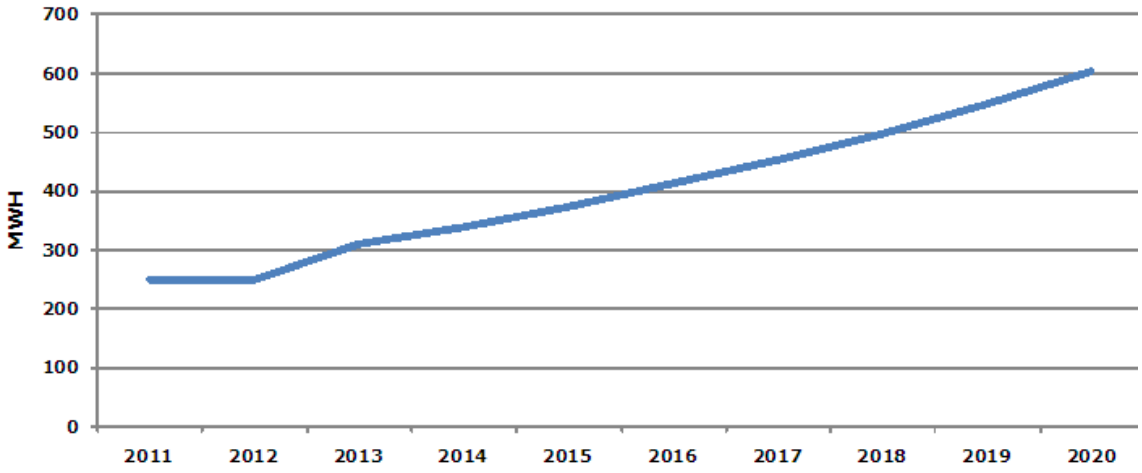
UKIAH PUBLIC UTILITY

Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Ukiah		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers	4	4	4	1,884	1,507	18,086	10	$350	$2,193	$2,543
HVAC	Res Cooling	47	6	9	2,389	1,879	28,858	18	$4,331	$5,464	$9,795
Appliances	Res Dishwashers	3	1	1	198	168	1,851	1	$180	$224	$404
Consumer Electronic	Res Electronics										
HVAC	Res Heating										
Lighting	Res Lighting	44	8		2,963	2,431	12,432	7	$271	$1,054	$1,324
Pool Pump	Res Pool Pump										
Refrigeration	Res Refrigeration	27	1	1	4,803	3,602	50,243	27	$2,000	$5,621	$7,621
HVAC	Res Shell	13	3	3	2,752	1,675	33,054	21	$3,880	$6,633	$10,512
Water Heating	Res Water Heating	2			711	413	5,363	3	$200	$627	$827
Comprehensive	Res Comprehensive										
Process	Non-Res Cooking										
HVAC	Non-Res Cooling										
HVAC	Non-Res Heating										
Lighting	Non-Res Lighting	1	322	322	1,275,442	1,084,125	10,841,253	6,008	$481,104	$79,059	$560,163
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		140	345	339	1,291,142	1,095,800	10,991,140	6,094	$492,315	$100,874	$593,189
T&D	T&D										
Total		140	345	339	1,291,142	1,095,800	10,991,140	6,094	$492,315	$100,874	$593,189

EE Program Portfolio TRC Test	1.22

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

CITY OF VERNON LIGHT & POWER

- Established in 1905, the City of Vernon began serving electric 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 2010/11, the electric system served approximately 1,893 customers, supplied approximately 1,137,500 Megawatt hours, and had a peak demand of 194.6 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 Benefits Programs and the associated benefits of participating in these programs.
- To monitor and evaluate the effectiveness of the programs.
- Meet or exceed energy efficient goals.

Overview of City of Vernon Energy Efficiency Programs:

Public Facilities:

- LED Traffic Signal Retrofits: All of the City of Vernon traffic signals are now converted to LED. This has been an ongoing project that is now complete.

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.
- Time of Use Rate Programs: All customer loads exceeding 100 kilowatts demand are eligible to receive time-of-use rate; enabling them to reduce their energy cost through time management of their energy usage.

Proposed City of Vernon Energy Efficiency Programs and Services: (for FY 2011-12)

- 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.
- Educate all existing customers on time-of use rate to utilize shifting load to off & mid peak hours.

Renewable Energy Program:

Solar Incentive Program: Solar Rebate Program provides performance-based incentives of $2.25 per installed watt. Receiving a lot request to participate in the solar rebate program but some businesses are still reluctant to move forward due to the economy.

Evaluation, Measurement & Verification:

The City of Vernon is committed to providing evaluation, measurement and verification efforts by having a third party consultant evaluate and verify its commercial/industrial lighting program by reviewing its top users that participate in the rebate program. The report is still in progress.

Vernon Demand Reduction Programs:

- Interruptible Service Program**:** Reduce demand load in case of system emergencies. Can reduce over 12.65MW within 30 minutes.

Investment in Renewable Energy:

The City of Vernon continues to explore renewable energy to meets its renewable portfolio by purchasing land in the Tehachapi Mountain in Kern County with the intent to develop a wind farm.

CITY OF VERNON LIGHT & POWER

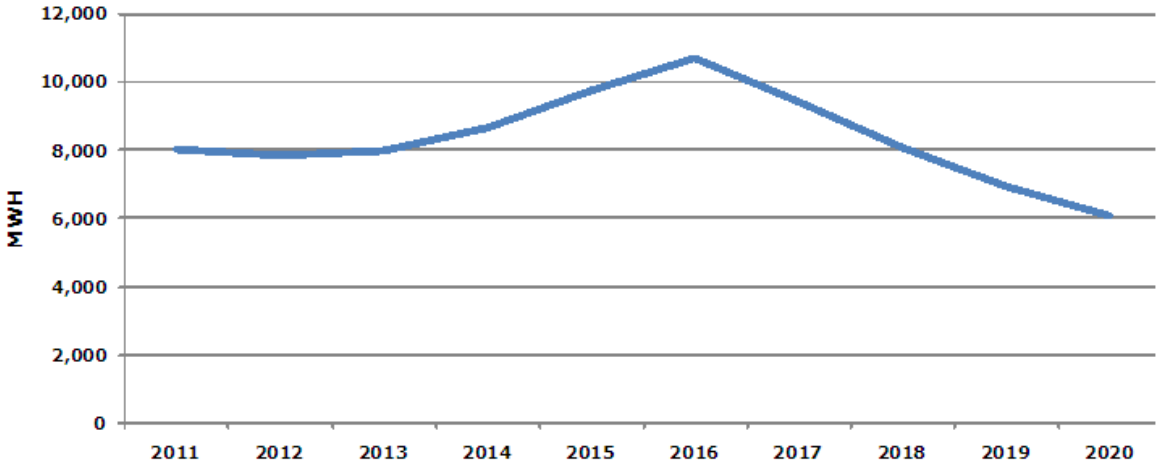
Time Period for Reporting Data: Fiscal Year ending 6/30/2011

Vernon		Resource Savings Summary							Cost Summary		
Program Sector (Used in CEC Report)	Category	Units Installed	Net Demand Savings (kW)	Net Peak kW Savings	Gross Annual kWh Savings	Net Annual kWh Savings	Net Lifecycle kWh savings	Net Lifecycle GHG Reductions (Tons)	Utility Incentives Cost ($)	Utility Mktg, EM&V, and Admin Cost ($)	Total Utility Cost ($)
Appliances	Res Clothes Washers										
HVAC	Res Cooling										
Appliances	Res Dishwashers										
Consumer Electronic	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	3,939	581	495	2,598,257	2,128,125	25,095,083	14,863	$242,069	$47,340	$289,409
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		3,939	581	495	2,598,257	2,128,125	25,095,083	14,863	$242,069	$47,340	$289,409
T&D	T&D										
Total		3,939	581	495	2,598,257	2,128,125	25,095,083	14,863	$242,069	$47,340	$289,409

EE Program Portfolio TRC Test	4.72

Excluding T&D

Energy Savings Targets 2011-2020



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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%

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.
- All customers' facilities are eight years old or less, occupying buildings that meet Title 24 requirements. This results in a lower energy efficiency potential.
- VMUS receives wholesale power through its 12 kV switchgear.
- VMUS serves approximately 44 non-residential meters.
- Peak demand for the utility is 13.0 megawatts and annual energy sales were 73,000 megawatt-hours.

Victorville Energy Efficiency Program Highlights

Energy Efficiency Program Goals:

- 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 and system demand through the time management of their energy usage.
- Web Access: Provides customers with timely information to facilitate improved management of electric consumption.
- Photovoltaic Incentive Program: Provides financial incentives of $2.25 per watt up to $15,000 per customers not to exceed 50% of the installed costs of a new solar energy system.

VMUS Demand Reduction Programs:

- Municipal Facilities: VMUS serves municipal facilities that can be interrupted as scheduled.

Appendix B: Program Energy Savings Potential and Targets

Publicly Owned Utilities Energy Savings Targets 2011 - 2020

	Annual Targets (MWH)										
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10 yr Total
Alameda	1,574	1,675	1,771	1,833	1,887	1,935	1,964	1,982	1,996	2,014	18,631
Anaheim	24,264	22,542	26,296	32,291	37,785	36,956	34,802	32,568	30,339	28,238	306,081
Azusa	2,068	1,904	2,071	2,367	2,591	2,736	2,738	2,715	2,692	2,669	24,551
Banning	962	706	782	894	944	975	979	970	945	918	9,076
Biggs	44	33	35	38	42	45	42	39	35	32	385
Burbank	8,768	7,549	8,301	9,523	10,553	11,125	10,894	10,524	10,225	9,928	97,391
Colton	3,162	2,902	3,508	4,594	5,064	5,043	4,827	4,574	4,317	4,092	42,082
Corona	166	167	190	227	256	288	312	335	358	381	2,678
Glendale	11,060	11,520	11,280	11,320	11,380	11,430	11,490	11,550	11,620	11,680	114,330
Gridley	75	75	75	87	98	107	111	114	117	120	979
Healdsburg	420	420	420	515	557	603	614	617	617	614	5,396
Hercules	75	74	86	102	113	122	130	137	145	153	1,137
IID	19,743	16,480	18,381	21,281	24,147	26,614	27,674	28,234	28,576	28,910	240,041
Industry	-	-	-	-	-	-	-	-	-	-	-
LADWP	271,000	291,000	296,000	266,000	116,000	108,000	126,000	224,000	222,000	240,000	2,160,000
Lassen	375	375	375	501	650	849	1,043	1,177	1,203	1,219	7,767
Lodi	2,296	1,667	1,905	2,242	2,587	2,873	2,948	2,985	3,019	3,053	25,575
Lompoc	517	336	395	459	544	630	708	760	776	785	5,911
Merced	1,316	1,117	1,258	1,483	1,765	2,054	2,143	2,191	2,242	2,297	17,866
Modesto	16,207	15,136	16,154	18,161	20,252	21,857	21,102	20,074	19,258	18,623	186,824
Moreno Valley	274	219	234	260	288	304	292	276	261	247	2,655
Needles	205	160	181	211	246	280	299	312	323	334	2,549
Palo Alto	5,799	6,290	6,782	7,276	7,906	7,927	7,950	7,973	7,999	8,026	73,929
Pasadena	14,500	14,500	14,500	17,500	17,500	17,500	17,500	17,500	17,500	17,500	166,000
Pittsburg Power/ Island	42	37	40	46	55	64	64	62	60	59	529
Plumas Sierra	237	230	247	279	346	491	778	1,191	1,546	1,688	7,033
Port of Oakland	406	420	424	430	437	488	523	529	533	541	4,731
Rancho Cucamonga	46	49	55	65	74	85	93	101	110	118	796
Redding	2,523	2,496	3,076	3,776	4,457	4,655	4,649	4,518	4,402	4,350	38,903
Riverside	19,016	16,313	17,698	20,524	22,955	24,489	24,589	24,285	24,000	23,782	217,651
Roseville	8,390	8,360	8,604	8,639	9,054	10,032	10,903	10,470	9,874	9,387	93,713
SMUD	166,000	169,000	171,000	175,000	179,000	183,000	185,000	187,000	190,000	194,000	1,798,000
Shasta Lake	300	300	300	713	833	934	1,016	1,073	1,108	1,143	7,719
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
Trinity	14	13	14	14	14	14	14	14	14	14	139
Truckee Donner	1,978	1,640	1,706	1,727	1,762	2,017	2,257	2,317	2,214	2,263	19,880
TID	12,900	12,644	13,829	15,846	17,814	19,269	19,075	18,675	18,379	18,172	166,603
Ukiah	250	250	310	341	375	413	454	499	549	604	4,045
Vernon	8,020	7,863	7,992	8,655	9,766	10,716	9,468	8,073	6,962	6,087	83,601
Total	**628,047**	**641,877**	**662,531**	**663,721**	**539,603**	**545,334**	**560,900**	**653,469**	**647,641**	**664,057**	**6,206,179**

Note: Redding's targets are not board approved and do not reflect Redding's expected market potential that is less than that represented in the table.

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.

California Energy Commission, 2008 Integrated Energy Policy Report Update, CEC Publication CEC-100-2008-008-CTF, November 2008.

California Energy Commission, 2007 Integrated Energy Policy Report, CEC Publication CEC-100-2009-xxx-CMF, November 2009.

California Energy Commission, 2006, *California Commercial End-Use Survey*

California Energy Commission, 2004, *California Statewide Residential Appliance Saturation Study*

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. Published in* December 2006, March 2008, March 2009, and March 2010

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

KEMA Incorporated. *Measure Quantification Methodology: Statewide Savings and Costs,* 2008 Supplement, Addendum 2008-1, February 2008. Available at http://www.ncpa.com/energy-efficiency-reports.html

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, September 2010, Global Energy Partners 3. *Energy Efficiency Program Evaluation Report*, January 2012, Energy & Resource Solutions
Azusa	4. *Evaluation, Measurement , and Verification Study,* June 2011, Lincus, Inc.
Banning	5. *Evaluation, Measurement , and Verification Study,* June 2010, Lincus, Inc.
Biggs	6. *2008 Energy Efficiency Program Evaluation Plan*, June 2008, Summit Blue Consulting 7. *FY 2008 Energy Efficiency Program Evaluation,* February 2010, Navigant Consulting 8. *FY 2009 Energy Efficiency Program Evaluation,* September 2010, Navigant Consulting 9. *FY 2010 Energy Efficiency Program Evaluation,* November 2010, Navigant Consulting
Burbank	10. *Energy Efficiency Evaluation Report,* July 2010, Lincus Energy, Inc.
Gridley	11. *2008 Energy Efficiency Program Evaluation Plan*, June 2008, Summit Blue Consulting 12. *Evaluation, Measurement & Verification Report*, February 2010, Optimized Energy and Facilities Consulting
Healdsburg	13. *2008 Energy Efficiency Program Evaluation Plan*, June 2008, Summit Blue Consulting 14. *Evaluation, Measurement & Verification Report*, Optimized Energy and Facilities Consulting, August 2010
Imperial Irrigation District	15. *Energy Efficiency Program Evaluation, Verification, and Measurement Study, FY2009 Programs*, April 2011, Navigant Consulting.
Lassen	16. *Evaluation, Measurement & Verification Report*, March 2010, Optimized Energy and Facilities Consulting
Lodi	17. *2008 Energy Efficiency Program Evaluation Plan*, May 2008, Summit Blue Consulting 18. *Process Evaluation of Lodi Electric Utility's Efficiency Program and Impact Evaluation of the Non-Residential Custom Program-Lighting and Appliance Rebate*, November 2008, Summit Blue Consulting 19. *Impact Evaluation of the Nonresidential Customer Program and*

	the Residential Home Improvement Program, FY 2008/09, November 2009, Summit Blue Consulting 20. *Energy Efficiency Program Evaluation, Verification, and Measurement Study FY 2009/10,* November 2010, Navigant Consulting 21. *2010-2011 Energy Efficiency Program Evaluation Report,* November 2011, Energy & Resource Solutions.
Lompoc	22. *Energy Efficiency Program Evaluation Plan*, June 2008, Summit Blue Consulting 23. *FY 2008 Evaluation, Verification, and Measurement Study*, March 2009, Summit Blue Consulting 24. *FY 2010 Evaluation, Verification, and Measurement Study*, February 2011, Navigant Consulting 25. *2010-2011 Energy Efficiency Program Evaluation Report,* December 2011, Energy & Resource Solutions.
LADWP	26. *2006-2007 Evaluation Report,* Expedient Energy, August 2008 27. *2007-2008 Evaluation Report,* Expedient Energy, December 2009 28. *2008-2009 Evaluation Report,* Expedient Energy, January 2011
Merced	29. *2008 Evaluation, Verification, and Measurement Study,* December 2009, *Summit Blue Consulting*
Modesto Irrigation District	30. *Evaluation, Measurement and Verification Plan for Modesto Irrigation District*, April 2009, Summit Blue Consulting 31. *Energy Efficiency Program Evaluation, Verification and Measurement FY2009 Programs,* November 2010, Navigant Consulting
Palo Alto	32. *Evaluation, Verification, and Measurement Study*, February 2009, Summit Blue Consulting 33. *FY 2008/2009 Energy Efficiency Program Evaluation,* March 2010, Navigant Consulting 34. *FY 2010 Energy Efficiency Program Evaluation,* March 2011, Navigant Consulting 35. *FY 2011 Home Energy Report Program Impact Evaluation*, March 2012, Navigant Consulting 36. *FY 2011 Residential Clothes Washer Rebate Process Evaluation*, March 2012, Navigant Consulting 37. *FY 2011 Commercial Advantage Program and Enovity Program Impact Evaluation,* March 2012, Navigant Consulting.
Pasadena	38. *2009 Energy Efficiency Program Evaluation Plan,* October 2009, Summit Blue Consulting
Plumas Sierra REC	39. *2008 Energy Efficiency Program Evaluation Plan*, May 2008, Summit Blue Consulting 40. *Engineering Evaluation of GeoExchange Program,* February 2010, Efficiency Services Group 41. *Evaluation, Measurement, & Verification Report for PSREC 2009,* February 2010, Efficiency Services Group
Port of Oakland	42. *Evaluation, Verification, and Measurement Study*, February

	2009, Summit Blue Consulting
Redding	43. *2008 Energy Efficiency Program Evaluation Plan*, June 2008, Summit Blue Consulting 44. *Evaluation, Verification, and Measurement Study*, March 2009, Summit Blue Consulting 45. *Evaluation, Verification, and Measurement Study*, July 2009, Efficiency Services Group
Riverside	46. *Evaluation, Verification, and Measurement Plans for Riverside Public Utilities*, March 2010, Summit Blue Consulting 47. *Review of Non-Residential Program Application Forms*, November 2010, Navigant Consulting
Roseville	48. *Evaluation, Measurement and Verification Plans for Roseville Electric*, December 2008, Summit Blue Consulting 49. *Process and Impact Evaluation of Roseville Electric's Residential New Construction, HVAC Retrofit, and Commercial Custom Rebate Programs*: FY2007/08, February 2009, Morrison Energy Services 50. *Evaluation, Measurement & Verification Report*, FY08/09, May 2010, Efficiency Services Group 51. *EM&V of Roseville Electric's Shade Tree Program,* September 2011, Navigant Consulting
Shasta Lake	52. *Evaluation, Measurement & Verification Report*, March 2010, Optimized Energy and Facilities Consulting 53. *Evaluation, Measurement & Verification Report - 2010*, April 2011, Optimized Energy and Facilities Consulting
Silicon Valley Power	54. *Evaluation, Measurement and Verification Plans for SVP Electric*, August 2008, Summit Blue Consulting 55. *Evaluation, Verification, and Measurement Study,* March 2009, FY 2007/2008 Program, Summit Blue Consulting 56. *Evaluation, Verification & Measurement Study, FY 2008/2009 Program,* December 2009, Summit Blue Consulting 57. *Energy Efficiency Program Evaluation, Verificiation, and Measurement Study FY2010,* March 2011, Navigant Consulting 58. *Impact Evaluation of SVP's Energy Efficiency Programs, FY2010-2011,* January 2012, The Cadmus Group
SMUD	59. *Evaluation of Prescriptive Lighting Program*, November 2007, ADM Associates, Inc. 60. *Measure and Verify Savings of Refrigerator Recycling Program*, May 2007, ADM Associates, Inc. 61. *Residential HVAC Program Evaluation*, March 2008, RLW Analytics, Inc. 62. *The Impact of Home Electricity Reports,* September 2009, ADM Associates, Inc. 63. *Evaluation of Commercial and Industrial Distributor Incentive Program: 2007-2008,* November 2009, ADM Associates 64. *Residential Energy Advisory Services Program Evaluation,*

	November 2009, Opinion Dynamics Corporation 65. *Residential ENERGY STAR Lighting Program Evaluation, January 2010,* Nexant 66. *2009 Multifamily Retrofit Program Final Evaluation Report,* April 2010, ADM Associates 67. *Commercial Savings By Design Program Evaluation,* March 2011, Nexant 68. *Evaluation of Commercial Prescriptive Lighting Incentive Program 2008/2009,* June 2011, ADM Associates 69. *2005/2006 Commercial Prescriptive Lighting Program Evaluation,* October 2011, AESC 70. *Residential Refrigerator Recycling Program Evaluation, Program Years 2009 and 2010,* November 2011, ADM Associates
TID	71. *2008 Energy Efficiency Program Evaluation Plan*, May 2008, Summit Blue Consulting 72. *Evaluation, Verification, and Measurement Study*, March 2009, Summit Blue Consulting 73. Energy Efficiency Program Evaluation – FY2009 Program, July 2010, Navigant Consulting
Truckee Donner PUD	74. *Evaluation, Measurement and Verification Plan for Truckee Donner Public Utility District 2008 Energy Efficiency Programs*, February 2009, Robert Mowris and Associates 75. *Truckee Donner Public Utilities District Calculation Evaluation, Measurement & Verification Report,* February 2010, Optimized Energy & Facilities Consulting, Inc. 76. *Evaluation, Measurement and Verification Report for Truckee Donner Public Utility District 2010 Energy Efficiency Programs*, March 2011, Robert Mowris and Associates 77. *Evaluation, Measurement and Verification Report for Truckee Donner Public Utility District 2011 Energy Efficiency Programs*, March 2012, Robert Mowris and Associates
Ukiah	78. *2008 Energy Efficiency Program Evaluation Plan*, August 2008, Summit Blue Consulting