

Public Benefits Program Proposal for FY 2008 to 2013

Silicon Valley Power

City of Santa Clara



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The City is required to collect and spend 2.85% of its electric sales revenues on cost effective energy efficiency, new renewable generation, low-income energy programs, and new electric technologies research and development. Assembly Bill 2021 (AB 2021), which passed in 2006, required the City Council to adopt energy efficiency goals for the next ten years and to report its energy efficiency savings to the California Energy Commission (CEC). Based on a feasibility study performed by Rocky Mountain Institute (RMI), goals were adopted by the City Council in June 2007 at the following rate:

Cumulative Savings	Utility Specified Feasible Goal (0.89% of Sales) in MWh
2007-2008	25,765
2008-2009	51,849
2009-2010	78,209
2010-2011	104,750
2011-2012	131,477
2012-2013	158,394
2013-2014	185,508
2014-2015	212,822
2015-2016	240,343
2016-2017	268,074

Goals & Objectives

1. Implement cost-effective energy efficiency programs to lower energy use. The cost to implement energy efficiency programs should be lower than the capital cost to build new generation and benefits of the total programs should exceed costs under the Total Resource Cost (TRC) test under the methodology reviewed and approved by the Northern California Public Agency (NCPA) Public Benefits Committee, of which Silicon Valley Power's PBC program manager is a member.
2. Provide the PBC programs in a manner that creates value to the community and meets all applicable legal requirements.
3. 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.
4. Implement programs to support renewable power generation that increase resource diversity and minimize adverse environmental impacts from electric generation and operation of the electric system.
5. Support emerging technologies to speed up market acceptance therefore, allowing energy efficiency services and products to compete in the open market.
6. Assist low-income residents in helping them to pay their electric bills and in installing energy efficient appliances and other measures.
7. Determine the best energy programs to offer Santa Clara customers by collecting input

from community organizations, businesses and other City departments.

Program Summaries

Proposed New and Modified Programs for FY 2008 to 2013

- *Room Air Conditioner Rebate:* Residents who purchase an Energy Star qualified room air conditioner will be able to receive a \$50 rebate. In order to qualify, residents must also be recycling an old air conditioning unit under the Home Air Conditioner Recycling program. This program will decrease the number of inefficient air conditioners in use and deliver long-term electric energy savings.
- *Pool Pump Rebate:* Residents will receive a \$200 rebate to replace their inefficient pool pump with a new two speed or variable speed pool pump. This program will encourage customers to purchase new, efficient pool pumps instead of rewinding old pumps, thereby decreasing the number of inefficient pool pumps and delivering long-term electric energy savings.
- *Solar Attic Fan:* Residents will receive a \$100 rebate for the installation of a solar attic fan. The program will encourage customers to use a solar attic fan to help cool their homes instead of using air conditioning. Installations are verified in order to receive the rebate.
- *Energy Star Ceiling Fan:* Residents who purchase Energy Star qualified ceiling fans (limit 3 per household) will be able to receive a \$35 rebate per ceiling fan. The program will encourage customers ceiling fans to help cool their homes instead of using air conditioning. Installations are verified in order to receive the rebate.

Ongoing Programs

- *Residential & Business Solar Photovoltaic Rebates:* A rebate for installation of solar systems will be continued under the current funding levels in accordance with Senate Bill 1 (SB1) legislation. Current funding levels are as follows:

Residential Customer %		
3 MW goal	10%	
Rebate Program 2007-2017		
Residential Installed Capacity MW	Rebate \$/Watt	Rebate Expenditures per Step
0.2	\$4.50	\$900,000
0.4	\$3.75	\$750,000
0.6	\$3.00	\$600,000
0.8	\$2.50	\$500,000
1.0	\$2.00	\$400,000
1.2	\$1.75	\$350,000
1.5	\$1.50	\$450,000
2.0	\$1.25	\$625,000
2.5	\$1.00	\$500,000
3.0	\$0.75	\$375,000

1. For systems between 10 and 100 output kilowatts:

- Program implementation will be the same as for smaller systems, except that rebate payment will begin at \$3.00 per output watt in July 1, 2007. Following the same declination path shown below, the rebate amount will decrease to \$0.25 by the time installations reach 27 MW.

Commercial/Industrial Customer %		
27 MW goal	90%	
Rebate Program 2007-2017		
Commercial Installed Capacity MW	Rebate \$/Watt	Rebate Expenditures per Step
2	\$3.00	\$6,000,000
4	\$2.25	\$4,500,000
6	\$1.50	\$3,000,000
8	\$1.30	\$2,600,000
10	\$1.10	\$2,200,000
12	\$0.90	\$1,800,000
15	\$0.65	\$1,950,000
18	\$0.45	\$1,350,000
22	\$0.35	\$1,400,000
27	\$0.25	\$1,250,000

2. For systems 100 output kilowatts and greater:

- Installations over 100 kW will receive payment on a performance basis. Performance incentives will be paid in place of the upfront rebate and net meter revenues that smaller systems receive. These incentives will pay the customer based on the measured electricity output in kilowatt-hours of their solar system over a five-year period. Pay under this incentive model is for expected system performance, not simple capacity.

Commercial/Industrial Customer %	
27 MW	90%
Rebate Program 2007-2017	
Commercial Installed Capacity MW	\$ per kWh PBI Incentive Payment
2	\$0.40000
4	\$0.36000
6	\$0.33480
8	\$0.31136
10	\$0.28957
12	\$0.26930
15	\$0.25045
18	\$0.23292
22	\$0.21661
27	\$0.20145

- Notification on the utility's website will be made at least 30 days prior to the change in rebate level.
- Payments will be distributed quarterly

Funding for these rebates will come out of the Public Benefit Program up to a total of \$500,000 per fiscal year. Any rebate amounts above that level in a fiscal year will come from the utility's generation procurement funds, as required by state law.

- *Program Measurement and Verification:* We have combined efforts with other NCPA utilities to develop a joint measurement and verification effort and report on the energy savings from all programs. This will provide third party review of our deemed and measured savings in accordance with AB 2021 requirements.
- *Small Business Efficiency Services:* Formerly known as OPUSSM, this program provides implementation services for small to medium sized businesses installing energy efficient lighting or air conditioning.
- *Residential Appliance Rebates:* The program encourages residents to purchase and install ENERGY STAR® labeled refrigerators. Customers receive \$50 rebates for new refrigerators if they also participate in the refrigerator-recycling program. Under the recycling program, residents receive \$25 rebates for turning in old working air conditioners or \$35 for working refrigerators.
- *Whole House Fan Rebate:* This program encourages residents to install a whole house fan to keep their house cool instead of using air conditioning. Customers receive a rebate of \$200 for the installation of a whole house fan. Installations are verified in order to receive the rebate.
- *LCD Monitor Rebate:* Customers receive a \$20 rebate for replacing an old CRT monitor with a new Energy Star qualified LCD computer monitor.
- *Low-Income Refrigerator Replacements:* Replaces up to 100 old, energy wasting refrigerators for residents in the financial low-income program with new, energy-saving appliances.
- *Residential Insulation Rebates:* The program encourages the installation of attic insulation. Single-family dwellers receive rebates of \$175 for installing insulation, while rebates for multi-family units are \$100 per unit. All homes are inspected to ensure installation has been completed.
- *Residential In-Home Energy Audits, Education, and Hot Line:* The program encourages residents to become more energy efficient and reduce their energy bills. Staff members visit homes and provide information and energy saving items (four compact fluorescent lights, "lime lites," and programmable thermostats). Also, the *Solar Explorer* and the SVP information booth will continue to be displayed at several city events, providing education on energy efficiency and solar electric generation systems to residents. With the Police Department, compact fluorescent light bulbs (CFL's) and educational materials are given to residents participating in the National Night Out Program in August.
- *Solar Electric Project:* A capital project to install a PV carport at a city facility was budgeted, but SVP has not been able to acquire the necessary land rights. Therefore, the project will be cancelled and funds will be used for another PV project within the City of Santa Clara.

- *Neighborhood Solar Program:* Customers pay into a special fund to support the installation of solar electric systems at community buildings. The second installation at Valley Village Retirement Center was completed in 2007. Of the funds given for this installation, \$10,000 came from industrial customers. Member voting determined the third location to be the Bill Wilson Center, with an installation anticipated in 2009.
- *SVP Plug-ins Catalog:* The energy-efficient product catalogs are delivered four times per year to residents. Regular monthly promotions are available to customers who order over the web. The printing of catalogs and fulfillment of customer orders is done by Energy Federation, Inc.
- *Rate Assistance Program:* Customers receive a 25% discount on their electric bill if they qualify through low income or needing high electric use for medical reasons. The financial program is administered by the state, while the medical discount is managed in-house.
- *Business Audits:* Provides free energy efficiency audits to business customers. Aspen Systems Corporation administers this and other business PBC programs.
- *Business Energy Information:* Management Information and education on energy usage through 15-minute interval meters, Itron's EEM Suite software, training, and other sources.
- *Business Rebates:* Encourages businesses to install energy efficient lighting, motors, air conditioners, motion sensors, programmable thermostats, cool roofs, and customized energy-efficiency/peak load reduction installations. The programs are occasionally changed to match statewide programs. Lockheed Martin, administers all of these except for the washing machine rebates, which are administered by the Santa Clara Valley Water District
- *Energy Innovator Grant:* The program provides grants to encourage businesses to develop new energy-related technologies.
- *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.

Third Party Programs for Business Customers

As one of the ways to enhance energy savings through the PBC programs and meet our kilowatt hour and kilowatt demand reduction goals, an RFP was sent out to over 100 potential providers of third party energy efficiency programs in December 2006. Of the responses received, a review team picked three responses as being the most likely to help our customers without overlapping with programs already being provided. These three programs are direct install replacement of gaskets in refrigeration systems, compressed air system maintenance and repair, and building commissioning. The programs are briefly outlined below.

- *Refrigeration Gaskets; Keep Your Cool:* The goal of the Keep Your Cool program by Bay Area Gasket Guy is to save 3.9 million kWh in the first year of the measure life. The program does this by focusing on refrigeration within the food and beverage industry in the City of Santa Clara. Between 30% and 50% of the electricity used in restaurants, grocery stores, liquor stores, convenience stores, and bars is consumed by their refrigeration equipment. Broken door gaskets (the seal around the door) cause

refrigerators and freezers to run excessively as the cold air simply leaks into the hot kitchen or store. Missing strip curtains allow the cold air to pour out of a walk-in cooler every time the door is opened. The Keep Your Cool program addresses these problems by offering Santa Clara businesses the opportunity to replace broken door gaskets and install new strip curtains at no cost. Combining Bay Area Gasket Guy's low cost gasket and strip curtain installations with SVP's incentive money makes these no cost to the customer installations possible.

- *Compressed Air (CAMP)*: CAMP uses a measurement-based audit approach to determine the conditions and performance of the compressed air system and to identify possible efficiency improvements. The detailed audit is performed to provide reliable cost and savings estimates for possible energy efficiency improvements and to determine which should be recommended to the customer for implementation. Once the baseline model is established, a list of possible measures for improving performance is developed. The customer makes the decision about what to implement and the incentive amount will be adjusted accordingly. The customer is responsible for implementing the selected improvements. They may accomplish this work by any combination of efforts from compressed air system contractors and their own staff. The program's goal is to save about 1 million kilowatt hours in the first year of the measure life.
- *Retrocommissioning*: The SVP Retrocommissioning Program (SVP RCx Program) is an innovative cost-effective program to generate substantial energy savings by providing commissioning and retro commissioning services for businesses, commercial buildings, educational facilities, and hotels. The program includes sub-metering and demand responsive strategies. Commissioning services identify measures that improve the energy performance of existing building systems and equipment, often at very low cost. They are typically the most cost-effective method for achieving energy savings. Including program incentives, customer investment typically would have a payback of less than one year. The program's goal is to save about 1 million kilowatt hours in the first year of the measure life.

Based on the success of the CAMP program and the Keep Your Cool program, SVP sent out a second RFP to over 130 potential providers of third party energy efficiency programs in May 2008 to expand upon its program offerings to commercial and industrial customers. Based on the results of the RFP, additional third party programs may be proposed.

Budgeted Program Costs for Fiscal Year 2008-2009 (Operating & Capital)

Program	#	kWh Saved	kW Saved	Rebates to Customer	Total Budgeted
REVENUE					
PBC Charges				\$	7,000,000
Subtotal Revenue					\$ 7,000,000
EXPENDITURES					
Energy Efficiency					
Residential					
Audits	200	79,600	25.96	\$ -	\$ 130,000
Refrigerator Rebate	250	21,750	3.75	\$ 12,500	\$ 25,000
CFL Giveaway	6,000	15,600	4.8	\$ -	\$ 13,000
Insulation Rebate	100	35,100	30.40	\$ 17,500	\$ 25,000
MFR Insulation Rebate	-	0	-	\$ -	\$ -
Ceiling Fan Rebates	100	18,000	17	\$ 3,500	\$ 9,000
Plug-ins Rebate	400	12,800	2.40	\$ 6,000	\$ 125,000
Low Inc Refrig Replacement	100	97,300	0.40	\$ -	\$ 60,000
Refrigerator Recycle	500	973,000	4.00	\$ 17,500	\$ 75,000
Window AC Recycle	50	3,800	5.70	\$ 1,750	\$ 25,000
Whole House Fan Rebate	15	7,755	11.70	\$ 3,000	\$ 15,000
LCD Rebate	200	8,600	1.00	\$ 4,000	\$ 5,000
Pool Pump Rebate	10	14,000	5.4	\$ 2,000	\$ 3,000
Window AC Rebate	50	3,800	5.9	\$ 1,750	\$ 13,000
Solar Attic Fan Rebate	50	3,250	0.4	\$ 5,000	\$ 15,000
Business					
All Audits	100	39,800	6.49	\$ -	\$ 700,000
Light Rebate	150	4,672,510	761.99	\$ 350,000	\$ 600,000
HVAC Rebate	25	500,000	81.54	\$ 200,000	\$ 400,000
Motor Rebate	5	350,000	57.08	\$ 15,000	\$ 30,000
New Cons. Rebate	2	550,000	89.69	\$ 200,000	\$ 250,000
Washer Rebate	75	95,000	54.00	\$ 7,500	\$ 12,500
Customer Direct Rebates	5	10,500,000	1,712.33	\$ 1,050,000	\$ 1,350,000
Third Party Energy Efficiency	15	6,000,000	978.47	\$ 500,000	\$ 750,000
Energy Innovator Grant	3	800,000	130.46	\$ 500,000	\$ 520,000
Energy Info & Web	-	-	-	\$ -	\$ 350,000
City Programs	5	250,000	40.77	\$ 100,000	\$ 125,000
Refrigeration/Gasket	25	500,000	81.54	\$ -	\$ 50,000
Renewable					
Green Power (most paid by Member Fees)			-	\$ -	\$ 25,000
Habitat Solar	6	18,000	0	\$ -	\$ 100,000
Solar Project--new capital funds		-	-	\$ -	\$ 0
Solar Rebate--Residential	20	60,000	28.00	\$ 240,000	\$ 250,000
Solar Rebate--Business	10	150,000	40.00	\$ 500,000	\$ 540,500
NSP/Bill Wilson Center	1	6,000	3.00	\$ -	\$ 25,000
Low Income					
RAP	2,300		-	\$ 161,000	\$ 171,000
EM&V					\$ 150,000
Community Education				\$ -	\$ 50,000
Total Expenditures		25,785,665	4,184.2	\$3,898,000	\$ 7,000,000
REVENUES - EXPENDITURES					\$ -

