

Public Benefits Program Proposal for FY 2012 to 2017

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. These goals were updated through a potential study conducted by Summit Blue Consulting LLC in 2009 and were adopted by City Council in 2010 at the following rate:

Cumulative Savings	Utility Specified Feasible Goal in MWh
2010-2011	23,055
2011-2012	25,415
2012-2013	26,255
2013-2014	28,502
2014-2015	29,506
2015-2016	28,413
2016-2017	25,456
2017-2018	23,052
2018-2019	21,328
2019-2020	20,020

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 2012 to 2017

- *Customer Directed Rebate* – Incentive levels for lighting will be increased from \$0.06 to \$0.10 for measures under this program. *We will add a pilot program to incentivize the installation of lodging controls. The rebate level will be \$200/guest room under this program.*
- *LED Lighting Rebate* – *We will increase the limit of bulbs in the residential LED Light Bulb Rebate for Homeowner's Associations (HOAs) to allow up to 100 bulbs per HOA with pre-approval required. We will also add fuel pump canopy and outdoor pole mount LED fixtures with rebates of \$175/fixture for fixtures greater than 250 Watts and \$100/fixture for fixtures 250 Watts or less.*
- *Commercial Lighting Rebates* – *Due to the change in Federal Lighting Standards, T12s are no longer the baseline for energy efficiency retrofits and standard T8 lamps are no longer eligible for rebates. We will rebate high efficiency T8s with high efficiency ballasts, and will implement a lighting rebate calculator that will determine the rebate amount based on energy savings exceeding Title 24. This will be available online so that customers and contractors can easily enter information about the project, facility, and operating hours in order to determine the amount of the rebate. For induction lighting, we will now allow retrofit kits, as these have become a viable option.*
- *Small Business Efficiency Services Program* – *In order to increase participation in energy efficiency programs from small business customers, we will increase the small business rebate incentive from 33% for lighting and 15% for HVAC to 35% for both measures. We will still require customers to install the lighting measures within 6 months of program enrollment and HVAC measures within 12 months of enrollment in order to receive the additional incentive.*
- *Controls Program* – *We will add a pilot program for controls where at least 80% of the savings come from the control strategies. Incentives will be paid on a performance basis with 6 payments made over 5 years at a rate of \$0.02/kWh saved annually, capped at 65% of total project cost. The first payment will be made upon project completion and each additional annual payment will be subject to commissioning of the controls system and validation of persistent energy savings.*

Programs Ending or On Hold

- *Motor Rebates:* All motors available for purchase are premium efficiency purchase and no better options are available. Therefore, this program is “on hold” until motors with a higher efficiency are developed.
- *Holiday Promotional LED LCD Television Rebate* – this program was a one-time promotional program that ran November 1st 2011 through January 31st 2012 to encourage customers to purchase more efficient LED back lit and LED edge lit Energy Star LCD televisions during the busy holiday shopping season.
- *Pool Pump Rebate:* Due to code changes, all new pool pumps are required to be dual speed or variable speed. Due to this change, the program can no longer incentivize a

more efficient purchase, so it will end.

Ongoing Programs

- *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:* 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.
- *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.
- *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.
- *Low-Income Refrigerator Replacements:* Replaces up to 75 old, energy wasting refrigerators for residents in the financial low-income program with new, energy-saving appliances.
- *ENERGY STAR Residential Heat Pump Electric Water Heater Rebate* – These units became commercially available in the Spring of 2010 and are still considered an emerging technology. Due to the cost differential between a standard electric water heater and the Energy Star heat pump, as well as the fact that SVP wants to encourage adoption of this emerging technology, a rebate of up to \$1,000 per household is offered for the purchase of an ENERGY STAR-qualified electric heat pump water heater.
- *LED Light Bulb Rebate* – Residential customers can receive a rebate of \$15 per ENERGY STAR-qualified LED light bulb, up to a maximum of six (6) bulbs per household.
- *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 (compact fluorescent lights, “lime lites,” and literature). 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.

- *Solar Electric Project:* A capital project to install a photovoltaic generation system located in the undeveloped portion of Jenny Strand Park at 250 Howard Drive. This project will construct a location to support the progress of PV technologies developed in Santa Clara and Silicon Valley, as well as provide interconnection and net-metering benefits to Silicon Valley Power’s own operations. The initial solar panels have been gifted by MiaSolé. The project will be complete by mid-Summer 2012.
- *Neighborhood Solar Program:* Customers pay into a special fund to support the installation of solar electric systems at community buildings. The third installation at the Bill Wilson Center was completed in 2010. Of the funds given for this installation, \$10,000 came from industrial customers. Member voting for the location of the fourth installation is underway.
- *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 programs are managed in-house.
- *Business Energy Audits:* Provides free energy efficiency audits to business customers. Energy & Resource Solutions 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, air conditioners, motion sensors, programmable thermostats, and customized energy-efficiency/peak load reduction installations. The programs are occasionally changed to match statewide programs. Energy & Resource Solutions, administers all of these except for the washing machine rebates, which are administered by the Santa Clara Valley Water District.
- *Data Center Efficiency Program* – This program is similar to the Customer Directed Rebate program but targets data centers with IT server load greater than 350 kW or cooling load greater than 100 tons. Incentive levels are \$0.06/kWh saved for new construction and \$0.08/kWh saved for retrofit projects. An additional \$0.02/kWh saved is paid for installing advanced controls.
- *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.
- *Low Income LED Holiday Light Exchange* – exchange up to 10 standard holiday lights with energy efficient LED holiday lights for customers who qualify for our Financial Rate Assistance Program.
- *City Revolving Energy Efficiency Loan Program* – Established a revolving loan fund for

qualifying energy efficiency measures at City owned and occupied facilities. Funds will be repaid on utility bills through the energy savings achieved by the project. Total available funding would be \$250,000, but individual projects are capped at a lower level in order to ensure multiple projects could be implemented. Project paybacks must be under 5 years to qualify.

- *Residential & Business Solar Photovoltaic Rebates (PV):* A rebate for installation of solar systems will be continued under the current funding levels for residential and business systems 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

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

- Installations over 100 kW receive payment on a performance basis. Performance incentives are paid in place of the upfront rebate and net meter revenues that smaller systems receive. These incentives 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	\$0.40
4	\$0.30
6	\$0.20
8	\$0.17
10	\$0.15
12	\$0.12
15	\$0.09
18	\$0.06
22	\$0.04
27	\$0.03

- Performance based incentive payments are distributed monthly.
- Funding for all PV 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 revenue.

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, SVP periodically embarks on an RFP process to add

third party energy efficiency programs to its Public Benefit Program offering. The RFP is sent out to over 100 potential providers of third party energy efficiency programs. Of the responses received each cycle, a review team selects responses that are both cost-effective and the most likely to help our customers without overlapping with programs already being provided. Current third party programs include:

- *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.*
- *Sustainable Schools Program* – This program expanded on the Sustainable Preschools Program and delivers energy efficiency measures such as lighting, programmable thermostats, HVAC tune ups, LED exit signs, and occupancy sensors to schools located in the City of Santa Clara. The program was designed to provide technical assistance, contractor management and up to 100% incentives to offset the costs of the equipment.
- *Data Center Airflow Management Program* – This program is targeted at small data centers under 15,000 square feet that are located within an office building or other type of facility. The program provides technical assistance in identifying and correcting airflow management issues, which make up a significant portion of wasted energy in these facilities.

Past programs have included:

- *Compressed Air Management Program*, which focused on energy efficiency improvements to compressed air systems in commercial and industrial facilities.
- *Keep Your Cool*, which focused on replacement of refrigeration gaskets and use of strip curtains in commercial refrigeration facilities.
- *Express Refrigeration*, which provided control systems and LED lighting for refrigerated cases, as well as ECM motors.
- *Vending Miser Installation Program*, which installed cold beverage machine occupancy sensors on vending machines at commercial and industrial facilities.
- *EnergySmart Program* – This program delivered energy efficiency measures such as refrigeration controls, motors, gaskets, strip curtains and LED lights to customers with commercial refrigeration equipment. The program was designed to provide free energy audits and savings recommendations targeted at refrigeration and provide incentives ranging from \$0.06 - \$0.18 per kilowatt hour to offset up to 90% of the costs of the equipment. This program rolled up the energy efficiency measures offered under several different refrigeration programs in the past so that they were presented to customers as a package that may be more cost effective than implementing individually.
- *Data Center Optimization Program (DCOP)* - This program targets small data centers less than 10,000 square feet within existing office or other buildings.
- *Enhanced Automation Initiative* – This program promoted investments in enhanced automation and control technologies targeted at HVAC systems controls in facilities over 100,000 square feet or with a demand of at least 500 kilowatts. The program provided free technical assistance to qualifying customers, as well as incentives for energy saved.

- *Sustainable Preschools Program* – This program delivered energy efficiency measures such as lighting, programmable thermostats, HVAC tune ups, LED exit signs, and occupancy sensors to preschools located in the City of Santa Clara. The program was designed to provide technical assistance, contractor management and up to 100% incentives to offset the costs of the equipment.
- *Laboratory Energy Management Program* – This program delivers design of energy efficient lab space and custom energy efficiency measures to customers with laboratory space within their facilities. Technical assistance is provided free of charge to the customer in order to encourage implementation of the energy efficiency measures and rebates are paid based on the actual energy savings achieved.

Budgeted Program Costs for Fiscal Year 2012-2013 (Operating & Capital)

Program	#	kWh Saved	kW Saved	Rebates to Customer	Total Budgeted
REVENUE					
PBC Charges					\$8,389,461.00
Transfer From Unallocated PBC Funds from Prior Fiscal Years					\$0.00
Subtotal Revenue					\$8,389,461.00
EXPENDITURES					
Energy Efficiency					
Residential					
Audits	200				\$130,000.00
Refrigerator Rebate	250	21,750	3.75	\$12,500.00	\$27,000.00
Low Inc Holiday Light Exchange	600	49,200	225	\$6,000.00	\$10,000.00
Insulation Rebate	100	35,100	30.4	\$17,500.00	\$30,500.00
MFR Insulation Rebate	30	10530	10	\$5,250.00	\$7,000.00
Ceiling Fan Rebates	150	27,000	25.5	\$5,250.00	\$10,750.00
Low Inc Refrig Replacement	75	72,975	0.4	\$60,000.00	\$85,000.00
Refrigerator Recycle	500	973,000	4	\$17,500.00	\$75,000.00
Window AC Recycle	50	3,800	5.7	\$1,250.00	\$15,000.00
Whole House Fan Rebate	15	435	11.7	\$3,000.00	\$15,000.00
Window AC Rebate	50	3,800	5.9	\$1,250.00	\$10,500.00
Solar Attic Fan Rebate	50	3,250	0.4	\$5,000.00	\$15,000.00
Heat Pump Water Heaters	20	55,700		\$20,000.00	\$27,500.00
LED Lighting Rebates	225	11,250		\$3,375.00	\$10,000.00
LED Lighting Rebates - HOA Exteriors	500	25,000		\$7,500.00	\$10,500.00
Energy Info & Web					\$100,000.00
Business					
All Audits	100				\$700,000.00
Light Rebate	150	3,399,900	489	\$400,000.00	\$650,000.00
HVAC Rebate	25	500,000	81.54	\$200,000.00	\$400,000.00

New Cons. Rebate	2	550,000	89.69	\$200,000.00	\$250,000.00
Food Service	7	334,999	80	\$25,000.00	\$50,000.00
VFD Rebate	10	1,000,000	50	\$100,000.00	\$130,000.00
Washer Rebate	75	95,025	54	\$7,500.00	\$12,500.00
Customer Directed/Data Center Rebates	20	15,000,000	1,500.00	\$2,000,000.00	\$2,500,000.00
Third Party Energy Efficiency	5	1,250,000	500	\$400,000.00	\$700,000.00
Energy Innovator Grant	3	1,500,000	100	\$500,000.00	\$520,000.00
Energy Info & Web	-	-	-	\$ -	\$210,000.00
City Programs	5	400,000	40.77	\$100,000.00	\$125,000.00
City Loan Program	5	400,000	25	\$250,000.00	\$250,000.00
Renewable					
Green Power (most paid by member fees)			-	\$ -	\$60,000.00
Solar Project--capital funds		-	-	\$ -	\$500,000.00
Solar Rebate--Residential	50			\$100,000.00	\$100,000.00
Solar Rebate--Business	6			\$400,000.00	\$400,000.00
Low Income					
RAP (discount provided outside PBC funding)	2,400		-		\$45,000.00
EM&V					\$150,000.00
Community Education				\$ -	\$50,000.00
Total Expenditures		25,722,714	3,333	\$4,847,875.00	\$8,381,250.00