

# Public Benefits Program Proposal for FY 2010 to 2015

## 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:

<b>Cumulative Savings</b>	<b>Utility Specified Feasible Goal in MWh</b>
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 2010 to 2015**

- *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 will be offered for the purchase of an ENERGY STAR® qualified electric heat pump water heater.
- *City Revolving Energy Efficiency Loan Program* – Establish a revolving loan fund for qualifying energy efficiency measures at City owned and occupied facilities. Funds would be repaid on utility bills through the energy savings achieved by the project. Total available funding would be \$250,000, but individual projects would be capped at a lower level in order to ensure multiple projects could be implemented. This project kick off was delayed until FY 2010-2011 due to a focus of staff resources on the ARRA Energy Efficiency Conservation Block Grant application and program kick off.
- *Customer Directed Rebate* – economizers will no longer be eligible for a rebate for new construction of data centers since this has now become standard practice and is considered a “free rider” in the program. Economizers for existing data centers will be rebated at a level of \$0.11 per kWh of first year savings, which is reduced from the \$0.17 per kWh rate that was previously paid. This lower incentive level takes into account the fact that the savings are off peak.
- *Revision to Customer Rebate Cap* – Over the past two years, SVP increased its rebate cap for any single customer in a fiscal year in order to stimulate demand in the programs and achieve energy efficiency savings targets. Demand has increased significantly and there are a number of large data center projects on the horizon which could represent good energy efficiency potential. Since the energy efficiency programs have been oversubscribed financially for the past two years, SVP will reduce the rebate cap from its current \$750,000 per customer to \$600,000 per customer per fiscal year.

### **Programs Ending**

- *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. This program will phase out when its contract expires on December 31, 2010 due to its lack of participation.

### **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.
- *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.
- *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 (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.
- *Solar Electric Project:* A capital project to install a PV carport at a city facility was budgeted, but SVP was not able to acquire the necessary land rights. Therefore, the project was 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 underway in 2010.
- *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 Energy 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, 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
- *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.
- *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:

<b>Residential Customer %</b>		
<b>3 MW goal</b>	<b>10%</b>	
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

<b>Commercial/Industrial Customer %</b>		
<b>27 MW goal</b>	<b>90%</b>	
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

<b>Commercial/Industrial Customer %</b>	
<b>27 MW</b>	<b>90%</b>
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 embarked on an annual 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.
- *Data Center Optimization Program (DCOP)* - This program targets small data centers under 10,000 square feet within existing office or other buildings. The program delivers 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.
- *Sustainable Preschools Program* – This program will deliver 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 is designed to provide technical assistance, contractor management and up to 100% incentives to offset the costs of the equipment.
- *Enhanced Automation Initiative* – This program promotes 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 provides free technical assistance to qualifying customers, as well as incentives for energy saved.
- *Laboratory Energy Management Program* – This program will deliver 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.
- *EnergySmart Program* – This program will deliver energy efficiency measures such as refrigeration controls, motors, gaskets, strip curtains and LED lights to customers with commercial refrigeration equipment. The program is 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 rolls up the energy efficiency measures offered under several different refrigeration programs in the past so that they are presented to customers as a package that may be more cost effective than implementing individually.

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.

Budgeted Program Costs for Fiscal Year 2010-2011 (Operating & Capital)

Program	#	kWh Saved	kW Saved	Rebates to Customer	Total Budgeted
<b>REVENUE</b>					
PBC Charges					\$7,913,080
Transfer From Unallocated PBC Funds from Prior Fiscal Years					\$2,000,000
<b>Subtotal Revenue</b>					<b>\$9,913,080</b>
<b>EXPENDITURES</b>					
<b>Energy Efficiency</b>					
<b>Residential</b>					
Audits	200	79,600	25.96	\$ -	\$130,000
Refrigerator Rebate	250	21,750	3.75	\$12,500	\$27,000
Low Inc Holiday Light Exchange	1,250	102,500	456.25	\$ -	\$15,000
Insulation Rebate	100	35,100	30.4	\$17,500	\$27,500
MFR Insulation Rebate	30	10530	10	\$ 3,000.00	\$ 3,000.00
Ceiling Fan Rebates	150	27,000	25.5	\$5,250	\$10,750
Plug-ins Rebate	400	12,800	2.4	\$6,000	\$69,000
Low Inc Refrig Replacement	100	97,300	0.4	\$ -	\$60,000
Refrigerator Recycle	500	973,000	4	\$17,500	\$75,000
Window AC Recycle	50	3,800	5.7	\$1,750	\$25,000
Whole House Fan Rebate	15	7,755	11.7	\$3,000	\$15,000
Pool Pump Rebate	10	14,000	5.4	\$2,000	\$4,000
Window AC Rebate	50	3,800	5.9	\$1,750	\$10,500
Solar Attic Fan Rebate	50	3,250	0.4	\$5,000	\$15,000
Heat Pump Water Heaters	40	111,400		\$40,000	\$42,500
<b>Business</b>					
All Audits	100	39,800	6.49	\$ -	\$700,000
Light Rebate	150	3,155,850	761.99	\$400,000	\$650,000
HVAC Rebate	25	500,000	81.54	\$200,000	\$400,000
Motor Rebate	5	75,000	57.08	\$15,000	\$30,000
New Cons. Rebate	2	550,000	89.69	\$200,000	\$250,000
Washer Rebate	75	95,000	54	\$7,500	\$12,500
Customer Direct Rebates	5	10,500,000	1,712.33	\$1,050,000	\$1,550,000
Third Party Energy Efficiency	15	6,000,000	978.47	\$550,000	\$800,000
Energy Innovator Grant	3	800,000	130.46	\$500,000	\$520,000
Energy Info & Web	-			\$ -	\$310,000

City Programs	5	250,000	40.77	\$100,000	\$125,000
City Loan Program – capital funds	5	100,000	25	\$250,000	\$250,000
<b><i>Renewable</i></b>					
Green Power (most paid by member fees)			-	\$ -	\$60,000
Solar Project--capital funds		-	-	\$ -	\$500,000
Solar Rebate--Residential	50	225,000		\$525,000	\$555,000
Solar Rebate--Business	6	3,230,000		\$1,746,000	\$1,771,000
<b><i>Low Income</i></b>					
RAP	2,300		-	\$690,000	\$700,000
EM&V					\$150,000
Community Education				\$ -	\$50,000
<b>Total Expenditures</b>		<b>27,024,235</b>	<b>4,526</b>	<b>6,348,750</b>	<b>9,912,750</b>