Public Benefits Program Proposal for FY 2014-2015 through 2018- 2019

Silicon Valley Power

City of Santa Clara

Public Benefits Program Proposal for FY 14/15 to 18/19

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 are updated through a potential study every three years. The most recent study was conducted by Navigant Consulting in 2012 and the goals were adopted by City Council in 2013 at the following rate:

Cumulative Savings	Utility Specified Feasible Goal in MWh
2013-2014	24,076
2014-2015	24,387
2015-2016	23,079
2016-2017	22,848
2017-2018	22,407
2018-2019	21,274
2019-2020	20,961
2020-2021	20,174
2021-2022	18,923
2022-2023	18,282

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 14/15 to 18/19

- *Residential LED Lighting Rebate* – We will reduce the rebate amount from $10 to $5 per bulb for LEDs up to 1,000 lumens due to the decline in costs of LED bulbs. However, since there are very few LEDs on the market over 1,000 lumens, we will keep a $10 rebate for bulbs 1,000 lumens or greater in order to encourage manufacturers to make more of these bulbs, which have a higher cost due to the additional diodes. This is in line with the Consortium for Energy Efficiency (CEE) recommendations for utility programs across the country.
- *LEED Rebate*: This rebate provides reimbursement to businesses for the cost of registering their LEED building project with the U.S. Green Building Council. Upon completion, if they meet the requirements to obtain LEED certification and achieve the energy requirements, SVP pays a rebate based on the square footage of the facility and the level of certification achieved. The overall incentive levels will decline by 20% for the upcoming program year, as LEED is becoming more commonly implemented and less incentive is needed in order to encourage customers to pursue LEED certification.
- *Commercial Lighting Rebate* – The incentive for reduced wattage fluorescent retrofits will be reduced from $0.30/kWh to $0.25/kWh to reflect the lower cost of the measure.
- *Energy Innovator Grant:* The program provides grants to encourage businesses to develop new energy-related technologies, but does not accurately convey this in its name. Therefore, we propose rebranding the program to the "Emerging Technologies Grant". This is more in line with similar programs run by other California utilities and should be more recognizable for the type of program we are running.

Programs Ending or On Hold

- *Apartment Lighting Rebate Program*: This was planned as a one-year initiative to retrofit common area and exterior lighting at apartment complexes of ten or more units throughout Santa Clara. Prescriptive rebates were offered for specified light fixture types, which are most commonly found at apartment complexes. All eligible fixtures must be retrofitted at one time to ensure cost effectiveness of the package of measures, rather than piecemeal measures. This program had very little participation by apartment complexes, despite our direct mail efforts. Lighting contractors were also trained on the program offering to provide outreach through our Trade Ally Network, but found it too difficult to reach decision-makers and opted not to pursue the program. Therefore, we are recommending that this initiative be cancelled and any lighting retrofits at apartment complexes will be handled with the lighting calculator through our standard Lighting Rebate program.

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.

- *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 $35 for working refrigerators.
- *Residential Energy Star Emerging Technology Award Dryer Rebate Program:* The first electric dryer to meet the Energy Star Emerging Technology Award requirements is now available at major retail outlets and saves an estimated 30% of energy over a conventional clothes dryer. Additional models are anticipated to be available in the near future. SVP offers a $100 rebate to encourage customers to purchase the most efficient model(s) that meet the Energy Star Emerging Technology Award requirements.
- *Residential Heat Pump Clothes Dryer Rebate Program:* Electric heat pump clothes dryers have been available oversees for a number of years and are widely adopted in Europe, but have yet to become available in the united States. They were anticipated in late 2013, so SVP developed this program last fiscal year without launching it. The first models are now anticipated in late 2014 and promise significant energy savings over conventional electric clothes dryers and the Energy Star Emerging Technology Award requirements. Therefore, SVP will launch a $300 rebate for electric heat pump clothes dryers once they are available on the market.
- *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.
- *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.
- *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. 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.
- *Financial Rate Assistance Program (FRAP)* – This program provides a 25% discount on the electric portion of utility bills for income-qualified residential customers, up to the first 800kWh of use per month.
- *Low Income Direct Install Program* – This program has a first year budget of $200,000 for a direct install program that includes an energy audit, behavior education, and energy efficiency measures at no cost to qualifying customers and is targeted to those customers who average over 800 kWh/month and are on the FRAP program. If funds are not exhausted in the first year, the program will be renewed for a second year, provided that energy savings potential remains for the target customers.

- *Medical Rate Assistance Program:* Customers receive a 25% discount on their electric bill if they qualify due to high electric use for medical reasons. The programs are managed in-house.
- *Commercial Lighting Rebates* – Incentives are determined through a lighting rebate calculator based on energy savings exceeding Title 24. This is 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.
- *Advanced Lighting Rebate Program:* The program provides a $0.20/kWh rebate for advanced lighting controls projects that have such capabilities as real time monitoring and control via remote access and automatic dimming based on occupancy and/or daylighting control strategies, and where the system reduces lighting energy consumption by at least 50%.
- *Commercial Uninterruptible Power Supply (UPS) Rebate Program* – The rebate amounts are based on a sliding scale of $20-$70 per horsepower, depending on the size of the UPS.
- *Data Center Efficiency Program* – This program targets data centers with IT server load greater than 350 kW or cooling load greater than 100 tons. The incentive is paid as a performance incentive, where the customer will receive five annual payments based on actual measured energy savings, with the first payment made three months after project completion. The incentive payment is $0.03 per kWh in energy savings.
- *Deep Energy Retrofit Pilot Program* – This pilot is open to a maximum of three customers who are interested in deep energy retrofits and able to make a commitment to a multi-year effort in reaching an energy savings of at least 30%. Incentives match the levels offered for the same measures incentivized under SVP's other programs, with a range from $0.02-$0.20 per kWh in first year savings.
- *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 (to be replaced with Energy Engage when the SVP MeterConnect advanced meters are installed), 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 (ERS), administers all of these except for the washing machine rebates, which are administered by the Santa Clara Valley Water District.
- *Customer Directed Rebate* – This program provides incentives based on actual energy saved for energy efficiency measures that do not fall into SVP's standard business rebate programs.
- *Small Business Efficiency Services Program* – This program is targeted at small business customers, and provides assistance in identifying energy efficiency projects, selecting and managing contractors, and help with filling out rebate application paperwork. The program also provides a 35% incentive for lighting and HVAC rebates, provided that 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* – This program is available for projects where at least 80% of the savings come from the control strategies. Incentives are 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 is made upon project completion and each additional annual payment will be subject to commissioning of the controls system and validation of persistent energy savings.
- *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 and energy management assistance.
- *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.
- *Neighborhood Solar Program:* Customers pay into a special fund to support the installation of solar electric systems at community buildings. Funds are matched through a portion of the money collected through the Santa Clara Green Power program (also a voluntary participation program) and SVP's Public Benefits Charge. Once there are enough funds to install a PV system, participants in the Neighborhood Solar Program are asked to nominate a non-profit located in the City of Santa Clara or a City of Santa Clara facility. Eligible non-profits are then placed on a ballot and Neighborhood Solar Program participants are asked to vote in order to select the PV system recipient. Recipients must own their own building or have five or more years remaining on their lease and be the customer of record on the utility bill. Because not all roof space is idea for a PV system, SVP also allows PV systems on structures located on the property and tied to the electric meter, such as a parking lot shade structure.
- *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 50 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. 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. The most recent RFP was issued in December 2013, with new programs planned to begin in FY 2014-2015. Programs are currently being reviewed and the Scopes of Work are being negotiated. We anticipate selecting three programs, all direct install focused on refrigeration measures and small business customers.

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.
- *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.

- *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.
- *Retrocommissioning:* This 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 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.

Budgeted Program Costs for Fiscal Year 2014-2015 (Operating & Capital)

Program	#	kWh Saved	kW Saved	Rebates to Customer	Total Budgeted*
REVENUE					
PBC Charges					**$9,310,184.00**
Transfer From Unallocated PBC Funds from Prior Fiscal Years					**$3,000,000.00**
Subtotal Revenue					**$12,310,184.00**
EXPENDITURES					
Energy Efficiency					
Residential					
Audits	200				$50,000.00
Energy Audit Program Enhancements					$60,000.00
Refrigerator Rebate	250	21,750	3.75	$12,500.00	$35,000.00
Ceiling Fan Rebates	150	27,000	25.5	$5,250.00	$15,000.00
Low Income Direct Install Program	65	150,000		$200,000.00	$240,000.00
Refrigerator Recycle	500	973,000	4	$17,500.00	$80,000.00
Heat Pump Water Heaters	20	55,700		$20,000.00	$27,500.00
LED Lighting Rebates	1200	60,000		$7,200.00	$33,000.00
LED Lighting Rebates - HOA Exteriors	500	25,000		$5,000.00	$10,000.00
Heat Pump Clothes Dryer Rebate	10	3,000		$3,000.00	$10,000.00

Energy Star Emerging Technology Award Clothes Dryer Rebate	20	2,000		$2,000.00	$7,000.00
Energy Info & Website					$200,000.00
Business					
Audits & Consultations	100				$700,000.00
Lighting Rebate	185	4,193,210	489	$450,000.00	$700,000.00
HVAC Rebate	25	500,000	81.54	$200,000.00	$400,000.00
New Cons. Rebate	2	550,000	89.69	$200,000.00	$275,000.00
Food Service	7	334,999	80	$25,000.00	$75,000.00
Washer Rebate	75	95,025	54	$7,500.00	$12,500.00
Customer Directed/Data Center Rebates	30	13,000,000	1,250.00	$2,100,000.00	$2,650,000.00
Advanced Lighting Controls	10	1,000,000		$200,000.00	$240,000.00
Building Controls	5	750,000		$15,000.00	$40,000.00
Third Party Energy Efficiency Programs	5	1,250,000	500	$750,000.00	$950,000.00
Emerging Technology Grant	3	1,500,000	100	$500,000.00	$540,000.00
Energy Info & Website		-	-	$ -	$300,000.00
City Programs	5	300,000	40.77	$100,000.00	$125,000.00
City Loan Program	5	400,000	25	$250,000.00	$275,000.00
LED Streetlight Replacement Program	6000	5,000,000			$3,000,000.00
Renewable					
Green Power (most paid by member fees)			-	$ -	$60,000.00
Solar Rebate--Residential	50			$100,000.00	$175,000.00
Solar Rebate--Business	6			$400,000.00	$475,000.00
Low Income					
RAP (discount provided outside PBC funding)	2,400		-		$100,000.00
EM&V					$150,000.00
RD&D Projects (non-energy efficiency)					$150,000.00
Customer/Community Education				$ -	$150,000.00
Total Expenditures		**30,190,684**	**2,743**	**$5,569,950.00**	**$12,310,000.00**

*Includes marketing & overhead