

**Public Benefits Program Proposal for FY 2018-2019  
through 2022- 2023**

**Silicon Valley Power**

**City of Santa Clara**



# Public Benefits Program Proposal for FY 18/19 to 22/23

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 four years. The most recent study was conducted by Navigant Consulting in 2016 and the goals were adopted by City Council in 2017 at the following rate:

<b>Cumulative Savings</b>	<b>Utility Specified Feasible Goal in MWh</b>
2017-2018	12,851
2018-2019	13,032
2019-2020	14,015
2020-2021	14,928
2021-2022	15,129
2022-2023	14,565
2023-2024	13,333
2024-2025	12,192
2025-2026	11,528
2026-2027	10,590

## **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 18/19 to 22/23**

- *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. The project cap was raised to \$750,000 for projects completed in FY 2017-2018 and that cap will be extended for projects completed in FY 2018-2019. A peak demand incentive of \$150 kW was introduced in FY 2017/2018, but it did not result in any additional project applications, so this will be removed for simplicity.
- *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. Lighting with network lighting controls will be removed from the Customer Directed rebate program and will now be covered under the standard lighting rebate. The incentive will be \$0.15 per kWh for all custom projects incentivized by the Customer Directed Rebate Program. The project cap was raised to \$750,000 for projects completed in FY 2017-2018 and that cap will be extended for projects completed in FY 2018-2019. A peak demand incentive of \$150 kW was introduced in FY 2017/2018, but it did not result in any additional project applications, so this will be removed for simplicity.
- *Commercial Lighting Rebates* – The lighting rebate will be increased to \$0.25 per kWh for the installation of network lighting control systems. This incentive applies to lighting retrofits only and helps to cover the customer's additional cost of measurement and verification of the energy savings.

### **Programs Ending or On Hold**

- *City Revolving Energy Efficiency Loan Program* – Established a revolving loan fund for qualifying energy efficiency measures at City owned and occupied facilities. Funds were repaid on utility bills through the energy savings achieved by the project. Total available funding was \$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. Utilization of the program was low. This was funded through a Capital project budget which is being closed at the end of FY 17/18, so this program will end. City energy efficiency projects will still be eligible for rebates through our standard programs, but loan funds will no longer be available.
- *Residential Solar Electric Rebate* – the state legislation that required utilities to provide solar electric rebates expired on December 31, 2016. Silicon Valley Power continued to offer rebates for commercial solar installations through June 30, 2017. Residential Solar rebates end June 30, 2018 under the current program design. Staff will evaluate options for solar programs in future years, with emphasis on a possible low income program.

## Ongoing Programs

- *Residential Electric Dryer Rebate Program:* This program provides a rebate of \$100 for any ENERGY STAR -qualified electric clothes dryer having a Combined Energy Factor (CEF) of 4.3-5.4. For Energy Star-qualified clothes dryers with a CEF of 5.5 or greater, the rebate is \$200.
- *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 Pool Pump Rebate:* This program provides a \$100 rebate to residential customers installing a new variable speed pool pump with a qualifying controller.
- *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 to use ceiling fans to help cool their homes instead of using air conditioning.
- *ENERGY STAR Residential Heat Pump Electric Water Heater Rebate –* SVP offers a maximum rebate of \$500 per household 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 SVP information booth will continue to be displayed at several City events, providing education on energy efficiency and solar electric generation systems to residents.
- *Residential Attic Insulation Rebate –* This program pays \$0.10/square foot for attic insulation of R-38 over conditioned space in single family homes or in multifamily homes where the attic space is completely separated from that of the other multifamily units. Eligible customers must have electric heat either in the form of a heat pump or electric resistance heat and no more than R19 existing attic insulation.
- *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 800 kWh of use per month.
- *Residential Blower Door and Duct Testing Pilot Program:* In an attempt to help customers improve the efficiency and comfort of their homes through the reduction of leaks, this pilot program will be available to residential customers in single family homes who have central air conditioning. A free SVP audit will be required to determine if the home is a good candidate for the blower door test. Duct testing is a much more involved process and will be offered to those customers who are a good candidate for reducing the leaks in their air conditioning duct system, who demonstrate an interest in taking action to improve the duct work, and who are not already doing an air conditioning system upgrade where a duct test is required by building code. The service will be free to eligible customers under the pilot program. At the time of this report, this pilot program is still in the design phase and has not yet been launched.
- *Low Income EV Charging Station Grant for Multi-family properties –* Under its low

income programs, SVP will offer a grant of up to \$1,000 per charging station for multi-family properties where 15% of customers residing at the property qualify for SVP's low income programs. This program was approved in FY 2016-2017 but has not launched as of the time of this report. The utility is looking at providing charging station rebates for all eligible 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.
- *Deep Energy Retrofit Pilot Program* – This pilot is targeted at 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. The program target is to enroll three customers.
- *Enhanced Ventilation Controls Demonstration Projects* –The program is targeted at smaller customers with rooftop package units of 15 tons or smaller. This customer segment is not at the forefront of adopting new technology. In order to educate customers on the technology and validate the energy savings, we are aiming for demonstration projects at customers' facilities and will fund up to the lesser of 100% of the project cost or \$3,500. The customers are required to allow SVP to install metering equipment to validate energy savings and to write a case study on the project. The case study will be used in promoting the rebate program to other customers and educating them on the energy savings and payback of the project.
- *Emerging Technologies Grant:* The program provides grants to encourage businesses to develop new energy-related technologies. The incentive is \$0.35/kWh, paid in two payments. The first payment of 50% of the incentive will be paid upon completion of the project and the second payment of 50% will be paid upon verification of energy savings. This is intended to encourage customers to implement innovative energy efficiency projects and minimize some of the risks involved if the savings do not materialize as expected, which has been one of the barriers to program adoption. SVP is actively researching emerging technologies and reaching out to customers to inform them about the program and appropriate emerging technologies for their business.
- *Commercial New Construction Rebate:* This program provides a rebate to customers who exceed Title 24 by 10% for the measure being incentivized, in line with our other prescriptive rebates for retrofit projects. A Design Team Incentive matching the Investor Owned Utilities' program is provided as follows: at 10% savings, the incentive rate is \$0.033 per kWh. The incentive rate increases as the savings increase, up to 30% savings and \$0.10 per kWh. The incentive rate remains at \$0.10 per kWh until the project savings exceed 40%. At 40% and above, the incentive rate is \$0.13 per kWh. The Design Team Incentive, capped at \$50,000, also includes an incentive of \$33 per peak kW reduction.
- *Business Energy Audits:* Provides free energy efficiency audits to business customers. Energy & Resource Solutions administers this and other business PBC programs.
- *Business Rebates:* Encourages businesses to install energy efficient lighting, air conditioners, motion sensors, programmable thermostats, food service equipment, etc. The programs are occasionally changed to match statewide programs.

- *Enhanced Ventilation Controls Rebate*: This program provides an incentive of \$160 per ton for adding enhanced ventilation controls to HVAC rooftop packaged units 15 tons or smaller.
- *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, which is above the statewide program cap of 50%. 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.

### **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 April 2018. The previous RFP was issued in December 2016. Several programs were selected and implemented beginning in fiscal year 2016-2017. The following are still being offered:

- *Compressed Air Management Program* was run from 2007-2010 and provided successful implementation of energy efficiency measures in compressed air systems. It was reintroduced in FY 2015-2016, following an RFP issued in December 2013, and is ongoing.
- *Keep Your Cool*, which focused on replacement of refrigeration gaskets and use of strip curtains in commercial refrigeration facilities was launched in 2007. A second version of this program ran in FY 2014/2015 and focused on strip curtains, efficient refrigeration motors, and LED case lighting. The latest version was launched in April 2017 and adds additional energy efficiency measures.
- *Specialized Commercial and Industrial Operational Optimization Program* - This program provides engineering support and analysis to large customer facilities to effectively engage these customers in taking a long-term view of developing energy savings strategies geared towards implementing measures that will continually optimize the operations of their facilities. The program also provides project management support to customers during the implementation phase to make the recommended energy efficiency improvements and data analytics support to assist with ongoing savings validation.

- *Energy Efficient Water Systems Program* - This program provides engineering support and analysis to large customer facilities with cooling towers, significant wastewater systems, and significant pumping loads to assist in implementing energy efficiency measures which will also likely result in water conservation. The program provides an audit of the facilities and project management support to customers during the implementation phase to make the recommended energy efficiency improvements and validate the energy savings.
- *Small Business Exterior Lighting Program* – This program provides a free snapshot audit of exterior lighting efficiency opportunities. It then provides free LED exterior lights to eligible small businesses. The businesses are responsible for the installation cost and can use their own staff, the contractor of their choice, or one of the contractors working with the program provider.

Appendix A lists past third party energy efficiency programs that have been offered.

### Budgeted Program Costs for Fiscal Year 2018-2019

Program	#	kWh Saved	Rebates to Customer	Total Budgeted*
<b>REVENUE</b>				
PBC Charges				\$12,106,305.00
Transfer From Unallocated PBC Funds from Prior Fiscal Years				
Subtotal Revenue				\$12,106,305.00
<b>EXPENDITURES</b>				
<b>Energy Efficiency</b>				
<b>Residential</b>				
Audits	200			\$40,000.00
Energy Audit Program Enhancements				\$25,000.00
Ceiling Fan Rebates	150	27,000	\$5,250.00	\$30,000.00
Heat Pump Water Heaters	10	16,000	\$5,000.00	\$25,000.00
Pool Pump Rebate	20	13,480	\$2,000.00	\$10,000.00
Attic Insulation Rebate	50	5,000	\$5,000.00	\$40,000.00
Blower Door and Duct Testing Pilot	20	2,000		\$20,000.00
Clothes Dryer Rebate	40	5,000	\$6,750.00	\$30,000.00
Energy Info & Website				\$100,000.00
<b>Business</b>				
Audits & Consultations	100			\$900,000.00
Lighting Rebate	220	3,850,000	\$525,000.00	\$775,000.00
HVAC Rebate	25	500,000	\$200,000.00	\$400,000.00
New Construction Rebate	3	650,000	\$250,000.00	\$375,000.00
Food Service	10	475,000	\$60,000.00	\$160,000.00
Customer Directed/Data Center Rebates	30	3,500,000	\$2,600,000.00	\$3,750,000.00
Building Controls	5	750,000	\$30,000.00	\$65,000.00
Third Party Energy Efficiency Programs	5	3,000,000	\$850,000.00	\$2,000,000.00

Emerging Technology Grant	3	400,000	\$500,000.00	\$560,000.00
Energy Info & Website	-	-		\$300,000.00
City Programs	5	300,000	\$100,000.00	\$125,000.00
<b>Renewable</b>				
Green Power (most paid by member fees)			\$ -	\$60,000.00
Solar Rebate--Residential	50		\$400,000.00	\$500,000.00
Solar Rebate--Business (PBI Payments)	10		\$800,000.00	\$850,000.00
Neighborhood Solar Program (Final Projects)			\$240,000.00	\$265,000.00
<b>Low Income</b>				
RAP (discount provided outside PBC funding)	1,300			\$100,000.00
Low Income Multi-family EV Charging Station Grants	20		\$20,000.00	\$40,000.00
<b>Other</b>				
EM&V				\$150,000.00
RD&D Projects				\$260,000.00
Customer/Community Education			\$ -	\$150,000.00
Total Expenditures		13,493,480	\$6,599,000.00	\$12,105,000.00
*Includes marketing & overhead				

## Appendix A

Past programs have included:

- *Hospitality Management Program* – This program ran in 2017 and focused on providing lighting retrofits and PTAC controls for in-room air conditioning units in small hotels and motels.
- *Small Business and Multifamily Energy Efficiency Program* – this program provided a free snapshot energy audit and energy efficiency retrofits at no cost to the customer for small businesses and multifamily common areas.
- *CoolerMiser Installation Program*, which installed cold beverage machine occupancy sensors on walk up coolers for non-perishable items such as beverages at commercial and industrial facilities. This program ended on June 30, 2015 due to market saturation.
- *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 delivered design of energy efficient lab space and custom energy efficiency measures to customers with laboratory space within their facilities. Technical assistance was provided free of charge to the customer in order to encourage implementation of the energy efficiency measures and rebates were paid based on the actual energy savings achieved.
- *Retrocommissioning*: This program was 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

included sub-metering and demand responsive strategies. Commissioning services identified measures that improve the energy performance of existing building systems and equipment, often at very low cost. They were typically the most cost-effective method for achieving energy savings. Including program incentives, customer investment typically had a payback of less than one year.

- *Data Center Airflow Management Program* – This program was targeted at small data centers under 15,000 square feet located within an office building or other type of facility. The program provided technical assistance in identifying and correcting airflow management issues, which make up a significant portion of wasted energy in these facilities.