

INTEGRATED RESOURCE PLAN (IRP)

Date: 9/1/2023

IRPs shall consider all reasonable opportunities to meet future energy resource requirements using Demand Side Management techniques, new renewable resources and other programs that will provide retail consumers with electricity at the lowest possible costs, and minimize, to the extent practicable, adverse environmental effects.

To meet your Integrated Resource Planning reporting requirement, complete the following. Unaddressed items will be deemed incomplete and not eligible for approval. Western reserves the right to require customers to provide any supporting back-up data used to support and develop this report.

Customer Contact Information:

(Provide contact information for your organization. Contact person should be able to answer questions concerning the plan)

Customer Name:	City of Santa Clara dba Silicon Valley Power
Address:	881 Martin Avenue, Santa Clara, CA 95050
Contact Person:	Monica Nguyen
Title:	Resource Analyst II
Phone Number:	408-615-2718
E-Mail Address:	MNguyen@SantaClaraCA.gov
Website:	https://www.siliconvalleypower.com/

Type of Customer:

(Check one as applicable)

<input checked="" type="checkbox"/>	Municipal
<input type="checkbox"/>	State
<input type="checkbox"/>	Federal
<input type="checkbox"/>	Irrigation District
<input type="checkbox"/>	Water District
<input type="checkbox"/>	Other (Specify) _____

Identification of Resource Options (considerations that may be used to develop potential options include cost, market potential, consumer preferences, environmental impacts, demand or energy impacts, implementation issues, revenue impacts, and commercial availability):

Supply-side options:

(Including, but not limited to: purchase power contracts and conventional and renewable generation)

List existing supply-side options:	List future supply-side resource options considered and evaluated:
Natural gas, large hydro, small hydro, solar, wind, biogas, geothermal	Wind, geothermal, utility-scale battery storage

Demand-side options:

List existing demand-side options:	List future demand-side resource options considered and evaluated:
Load shifting, energy conservation and efficiency, interruptible load	Battery storage

Resource options chosen:

(Provide a narrative statement that describes the option chosen and clearly demonstrates that decisions were based on a reasonable analysis of the options)

SVP’s load has increased by more than 20% over the last decade and is expected to continue increasing over the next decade as we strive to meet the goals of a zero-carbon future. SVP continues to evaluate renewable projects that meet our load profile and clean energy goals. In addition to renewables, SVP also evaluated battery storage projects and is expected to enter into a contract to add a 50 MW Battery Energy Storage System (BESS) which will tentatively reach commercial operation in 2026. The BESS will be built within SVP’s service territory. Constructing a BESS would benefit SVP’s customers by maximizing the utilization of existing system capacity and offering another tool to assist in managing the reliability of SVP’s electric distribution system. The BESS will help meet the peak electrical demand and projected future growth. It will compliment our renewable energy purchases, such as wind and solar, by storing energy when those resources are abundant on the electrical grid. The stored energy is then used during times when wind and solar are not available or to help manage peak electrical demand.

Action Plan:

Specific Action Items to be Implemented Over the Next 5 Years:

Attachment: SVP's Public Benefits Program Proposal for FY2023-2024 through 2027-2028

Energy Consumption Improvements:

Proposed Items	Begin Date	End Date	Est. kW capacity savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Boiler, Furnace, air conditioning retrofits	1998	Ongoing			See the Public Benefits Program for numbers
Weatherization, insulation storm windows/doors	1998	Ongoing			
Insulation of air ducts, boilers, pipes, etc.					
Clock thermostats and equipment system timers	1998	Ongoing			
Heat pumps					
Energy audits	1998	Ongoing			
Public education programs	1998	Ongoing			
Loan arrangements or rebate program for energy efficient equipment	1998	Ongoing			
Use of infrared heat detection equipment	2014	Ongoing			
Energy efficient lighting	1998	Ongoing			
Equipment inspection programs					
Electric motor replacements	1998	Ongoing			
Upgrading of distribution lines/substation equipment					
Power factor improvement					
Other: _____				19,721,000 (FY21-22)	SVP no longer evaluates individual items, but one cumulative savings

Renewable Energy Activities:

Proposed Items	Begin Date	End Date	Est. kW savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Solar thermal/photovoltaic projects					See SVP's 2023 annual WAPA IRP
Day lighting technologies					
Active solar installations					
Biomass/refuse-derived fuels					
Geothermal projects					
Small-scale hydro projects					

Load Management Techniques:

Proposed Items	Begin Date	End Date	Est. kW savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Load management devices/systems					
Demand control techniques and equipment					
Smart meters or automated equipment	2010	ongoing	No savings		
Time-of-use meters					
Other:					

Rate Design Improvements:

Proposed Items	Begin Date	End Date	Est. kW savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Cost-of-service pricing		Ongoing	No savings		
Elimination of declining block rates					
Time-of-day rates					
Seasonal rates					
Interruptible rates	1999	Ongoing			
Other:					

Agricultural Improvements:

Proposed Items	Begin Date	End Date	Est. kW savings per year	Est. kWh savings per year	Milestones to evaluate accomplishments
Irrigation pump utilization/scheduling					
Irrigation pump testing or efficiency improvements					
Electric motor replacement					
Photovoltaic pumping systems					
Ditch lining or piping					
Laser land leveling					
Pumpback systems					
Water conservation programs					
Other:					

Environmental Effects:

(Provide a narrative statement that sets forth the efforts taken to minimize adverse environmental effects of new resource acquisitions)

SVP has been proactive in its efforts to acquire additional renewable resources to its portfolio. SVP contracts with projects that are in compliance with CEQA and other federal requirements. SVP has only evaluated and entered into renewable and carbon-free PPAs since the last WAPA 5-year IRP submittal. SVP has contracted for the following resources currently online: a 14 MW small hydro project, a four-unit hydro (two small hydro, two large hydro) project totaling 78 MW to SVP, a 6.8 MW small hydro project, and a 75 MW solar project. SVP has also contracted for two additional projects: a 300 MW wind project scheduled to come online in 2025 and an existing geothermal project totaling 35 MW in 2025 and 2026 and 70 MW 2027-2036 to SVP.

Public Participation:

(Customers must provide ample opportunity for full public participation in preparing and developing an IRP. Provide a brief description of public involvement activities, including how information was gathered from the public, how public concerns were identified, how information was shared with the public, and how it responded to the public comments)

SVP's Chief Electric Utility Officer, through a Public Meeting, provides quarterly utility updates to the City Council. These meetings are public and open to public comments. SVP will hold meetings detailing our IRP progress. SVP also holds an annual commercial/industrial customers meeting and additional workshops for our customers.

SVP has always included public opinion in the development of its programs. Among the goals adopted by the Santa Clara City Council regarding the Public Benefits Program states that it will "determine the best energy programs to offer Santa Clara customers by collecting input from community organizations, businesses and other City departments." The Public Benefits Program Proposal for FY2023-2021 through 2027-2028 is attached.

Future Energy Service Projections:

(Provide a load forecast to show expected growth or expansion; or a narrative statement concerning expected future growth)

Calendar Year	Peak Demand (kW)	Total Energy (kWh)
2024	704,972	4,993,220,000
2025	781,597	5,577,104,000
2026	848,350	6,099,075,000
2027	910,559	6,569,843,000
2028	988,487	7,170,164,000

or Narrative Statement:

Measurement Strategies:

(Provide a brief description of measurement strategies for options identified in the IRP to determine whether the IRP’s objectives are being met. These validation methods must include identification of the baseline from which a customer will measure the benefits of its IRP implementation)

The City of Santa Clara’s Council adopted the IRP on 11/27/2018 which was subsequently submitted to the California Energy Commission (CEC). The IRP is a system plan laying out the resource needs, policy goals, physical and operational constraints, and SVP’s general priorities or proposed resource choices including customer-side preferred resources. The IRP provides a framework to evaluate how SVP has chosen to align with greenhouse gas emission reduction targets and other policy goals. SVP is currently updating its IRP for 2024 CEC submittal. The CEC will review and determine if SVP is meeting the state’s mandated targets. CEC’s determination for SVP’s IRP met all requirements.

IRP Approval:

(Indicate that all of the IRP requirements have been met by having the responsible official sign below; or provide documentation that the IRP has been approved by the appropriate governing body)

<u>Bill Her</u> (Name – Print or type)	<u>Electric Division Manager</u> (Title)
<u><i>Bill Her</i></u> (Signature)	<u>9/1/2023</u> (Date)

Other Information:(Provide/attach additional information if necessary)