



City Council

**Item #8: Silicon Valley Power
Bi-Annual Update**

RTC 25-1250

January 28, 2025

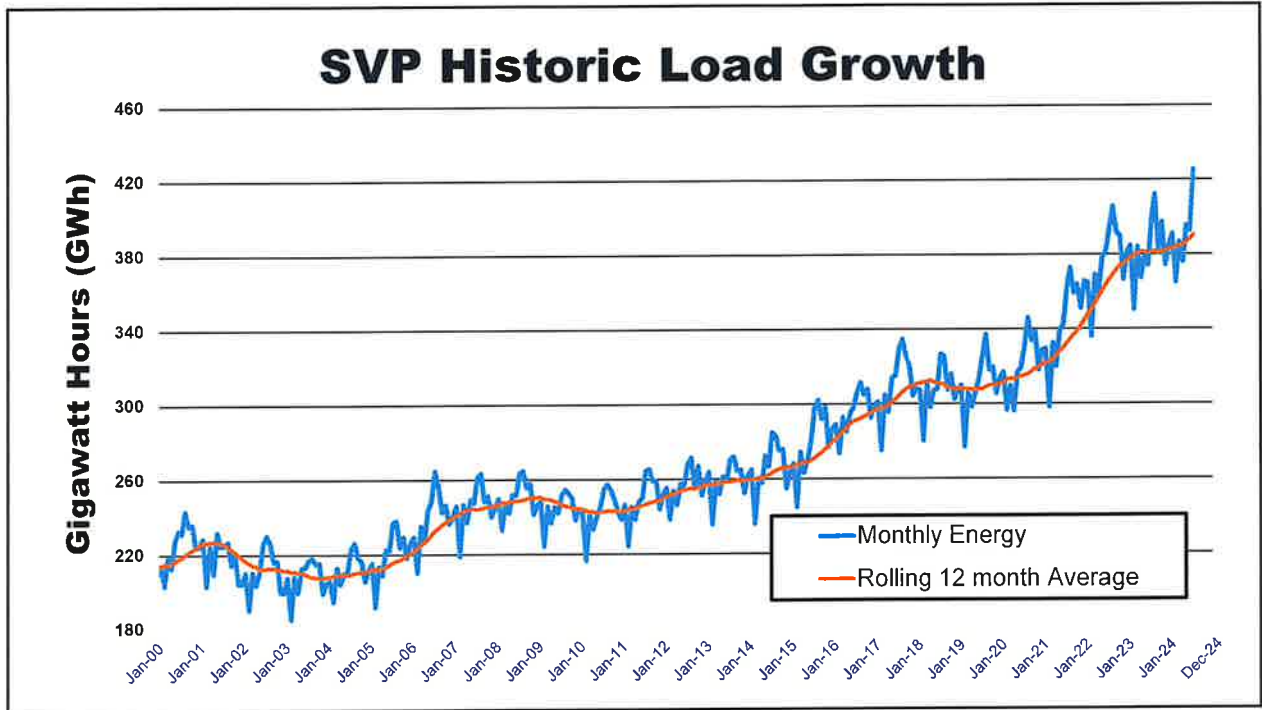
1




Agenda

- Growth Plan Update and System Limitations
- Update on Other Strategic Priorities
- Update on System Expansion Projects
- Update on the Technology Projects
- Rebate Update
- Six-month look-ahead

2





3





Growth and Expansion

- Staff determined there was a growth need in late 2019 - SVP Strategic Planning Session
- Prioritized Growth Plan as an SVP Strategic Priority and three others
 - Maintenance Program
 - Power Acquisition Strategy
 - Succession Planning







4



Three Other Priorities

Maintenance Programs

- Generation (Power Plants)
 - Master Service Agreements (2021 and 2025) : Gas Turbine, Steam Turbine, Generator, and Rotating Equipment
 - Implementation of Predictive Maintenance Program
 - Strategic Capital Projects to upgrade and replace major facility equipment including Turbine and Balance of Plant Controls, SCR and CO Catalysts, and Cooling Tower overhaul
- Substations
 - Implementation of Predictive Maintenance Program (2022): Thermography, Partial Discharge Testing, Transformer Oil Testing by 3rd Party on quarterly basis in all Substations.
 - Developed Maintenance Program (2024) – Phased implementation is underway through 2026.
- Transmission and Distribution
 - Implementation of new proactive tree trimming contract (2020 and updated 2022) and strategic tree trimming philosophy
 - Two new contractor contracts (2024) - T&D maintenance and construction.

5


Three Other Priorities

Power Acquisition Strategy

- More aggressive approach to Power Purchase Agreements
- Focus on feasibility
- Have entered into 1,404 MWs the last 5 years.
- Exploring 1,412 additional MWs

Succession Planning

- Added 24 Positions the following two years
- Added 12 positions in 2024
- Staffing and organizational plan in 2025




6





Growth and Expansion

- Staff determined there was a growth need in late 2019 - SVP Strategic Planning Session
- Prioritized Growth Plan as an SVP Strategic Priority and three others
 - Maintenance Program
 - Power Acquisition Strategy
 - Succession Planning
- Peak limit approximately 750 MW
 - Planning for a 1300+/- MW system
- Current peak – 722 MW







7






Load Growth - Key Priorities

- Two Multi-phased Activities (SVP and CAISO)
- Analyzed New Load for Upcoming Projects and Load Ramp
- Additional Power and Transmission Capacity
 - Working with CAISO on additional transmission capacity and growth
 - CAISO to develop and construct projects for transmission capacity
- SVP In-City Projects
 - Consultant support
 - Rebuild receiving stations
 - New transmission
 - Upgrading existing transmission
 - Battery storage




8





Major Expansion Projects

- Bond Financing
 - First Bond Issuance of \$130 Million in 2024 and Second Bond Issuance of \$240 Million in 2026
- Scott and Kifer Receiving Stations - \$254 million
 - Full rebuild and expansion
 - Replaces end of life infrastructure and increases capacity
- Schedule
 - Issue For Bid Package Underway
 - Major Material Procurement (In-Progress)
 - Construction Bid Advertise – February 2025





Scott Receiving Station (SRS)




Kifer Receiving Station (KRS)

11


Major Expansion Projects

- Northern Receiving Station - \$166 million
 - Upgrades and Expansion
 - Schedule
 - Issue for Bid Package Underway
 - Major Material Procurement (In-Progress)
 - Construction Bid Advertise – March 2025
- 115 kV Transmission line - \$50 million
 - Connects Northern Receiving Station and Kifer Receiving Station
 - Schedule
 - 60% Design Underway
 - Easement acquisition – thru May 2026
 - Anticipated construction start – late 2026



Northern Receiving Station


12



Council Communication and Actions

<ul style="list-style-type: none"> • October 13, 2020 - Master service agreements with several engineering consultant firms • April 6, 2021 - Comprehensive review of upcoming load growth and capital projects to the City Council • September 28, 2021 - the City Council accepted SVP's Three-Year System Growth Plan Strategy • April 5, 2022 - updated connection and load development fees for SVP • November 15, 2022 - City Council accepted SVP's System Expansion Plan for the California Independent System Operator's Transmission Planning Process • May 9, 2023 - City's intent to issue tax-exempt electric system bonds 	<ul style="list-style-type: none"> • July 18, 2023 - Updated City Council regarding these key near-term projects • October 10, 2023 - Authorized the purchase of up to 12 high voltage transformers - \$81,392,908 • March 19, 2024 - Informational Report Regarding Route Analysis for 115kV Transmission Line from NRS to KRS • April 23, 2024 - updated connection fees and load development fees • May 7, 2024 - Authorized the negotiation and purchase of high voltage circuit breakers - \$38,000,000.
---	--



13



Council Communication and Actions

<ul style="list-style-type: none"> • May 28, 2024 - Authorized the negotiation and purchase of high voltage disconnect switches, station service voltage transformers, voltage transformers and capacitive voltage transformers, and combination revenue metering transformers - \$17,400,000 • May 28, 2024 - Authorized Amendments to Existing Agreements as Required to Complete Unanticipated Internal Inspection and Re-rate Engineering Study for Transformer Upgrades at KRS and SRS • September 10, 2024 - Approved the issuance of electric revenue bonds which provide funding for the large System Expansion Plan projects • October 8, 2024 -- Action Continued on an MND and MMRP and Route Approval for the 115kV Transmission Line from NRS to KRS 	<ul style="list-style-type: none"> • November 12, 2024 – Approved MND and MMRP and Route Approval for the 115kV Transmission Line from NRS to KRS (Continued from 10/8/24) • November 12, 2024, Authorized the purchase of control enclosures with protection and control panels and neutral grounding resistors - \$14,950,000 • November 19, 2024, Authorized the purchase of capacitor banks with reactive switching devices, protection and control panels, insulators, and surge arrestors - \$12,650,000 • December 3, 2024, Delegation of Authority to the City Manager to Negotiate and Execute Amendments to Agreements for Design Professional Services for System Capacity Expansion Planning
---	--


14

Battery Energy Storage Project

- Capacity up to 50MW/200MWh (4 hours daily)
- Completed:
 - 60% Site BESS Design (Electrical)
 - 60% Transmission Line Design
 - 90% SVP Control Enclosure Design
 - 100% Civil Site Design
- In progress:
 - Complete BESS IFC Design Packages
 - Site Grading began December 2024
 - Long Lead Equipment Procurement by Ameresco has been placed for the following items:

• Transformer	• Inverter transformers
• Switchgear	• Disconnect switches
• Battery	• Control building
• Main breaker	
- Expected Completion Date:
 - 1st Quarter 2026



Example of a Tesla Megapack

15

Technology Upgrades

Outage Management System

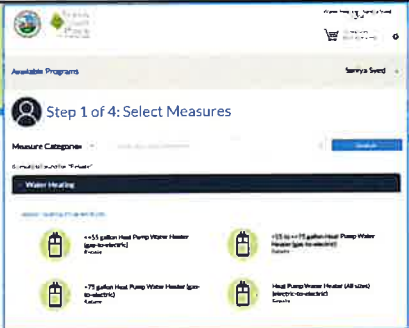
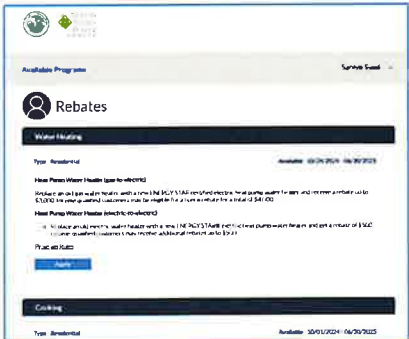
- OMS Project Kick-off: January 15, 2025
 - System Go-Live: Summer 2025

Modeling and Battery Optimization

- Software for optimizing the timing of charge and discharge cycles
- Preparing RFP for service providers
- Targeting Q3/Q4 2025
- Increase ROI and support maximizing grid reliability

Customer Rebate System

- Billion hosted database software to process rebates for customer programs
- Launch dates: Residential- Feb/March 2025, Commercial Summer 2025
- Billion tool will increase capacity and decrease processing time

16




Technology Upgrades

Safety Training Program



- Unified Computer-Based Training platform for all SVP staff
 - HSI deployed to all staff January 1st
- Two new contracts for hands on safety training for T&D, Substation, and Generation
- Better training content and status tracking tools for managers



Work Management Software Tools

- ARCOS Software - Automated “callout”, scheduling & crew management
 - Contract executed on –October 2024
 - Target implementation Q2 2025

17

Technology Upgrades

Autodesk Vault

- Maintain version control and audit logs for drawings
- Digital drawings across multiple work groups and platforms
- Optimize performance for faster file searches, data retrieval and enhanced data management
 - Council approved RTC on Nov 19, 2024 (Finalizing contract)



ArcGIS/ArcFM Migration

- Benefits include Mobile GIS Application extending GIS to our field crews
 - RFP Released July 10, 2024
 - Proposals reviewed by SVP team on Nov 18, 2024
 - Estimated duration of project is 18 months following kickoff meeting

Enterprise Asset Management System (EAM)



- Plan, design, construct, operate, inspect and maintain assets using a GIS-centric unified solution
- Predict and mitigate potential equipment failure
 - RFP will be published Spring 2025



18





Customer Programs



- Current programs for customers switching from gas to electric
 - Residential Rebates
 - Building: Inductions Cooking, Electric Clothes Dryers, Heat Pump Water Heaters
 - Transportation: Electric Vehicles, EV Charging and eBikes
 - Commercial Rebates
 - Building: Food Service, Heater Pump HVAC, Water Heating, Pool Pumps and Heaters
 - Transportation: EV Charging Stations
- New Programs Launching This Year...
 - Tune-up Programs-Rebates for Solar and HVAC annual maintenance
 - Residential Retrofit Electrification- Heat Pump HVAC, Multi-family program
 - Residential New Construction- Multi-family and ADU Building Electrification Incentive Program




19

Upcoming Items

- Next 6 months highlights
 - KRS/SRS Construction Contract (June timeframe)
 - NRS Construction Contract (June timeframe)
 - Northwest Loop Upgrades Contract
 - Property Acquisition
 - Easement Acquisition
 - Property Leases
 - Secondary Staging Yard
 - Office Building
 - Community Solar Findings
 - Multiple Contracts and Agreements
 - Policy Discussion - Future Growth

20



City Council

**Item #8: Silicon Valley Power
Bi-Annual Update**

RTC 25-1250

January 28, 2025

The image shows a graphic for a City Council meeting. On the left is the official seal of the City of Santa Clara, California, featuring a mission building, the year 1852, and the motto 'THE MISSION CITY'. The seal is set against a dark blue background with a red diagonal stripe. To the right of the seal, the text 'City Council' is in a large, bold, black font. Below it, 'Item #8: Silicon Valley Power Bi-Annual Update' is also in bold black font. Underneath that is 'RTC 25-1250' and at the bottom is 'January 28, 2025', both in bold black font.