

AI Data Center Power Supply and Impacts

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Electric Utility Director

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About Silicon Valley Power

Vertically Integrated Utility – Transmission, Generation, Distribution

Fast Facts



129 years young

Established in 1896



3RD Largest Municipal Utility

Retail Sales in CA



714 MW

Peak Demand



235 SVP Employees



**Department of the
City of Santa Clara**



19.3 sq. Miles

Service Area



131,062 Residents

60,980 Electric Accounts



55 Data Centers

Largest data center cluster on
West Coast



SVP Infrastructure

- 22 Substations & 4 System Connection Stations
 - 7 new substations under design or construction
- 569 miles of 12kV Distribution Lines (67% underground)
- 186 Distribution Feeders
- 11,000+ Power Poles
- 5,700 Transformers
- 60,795 Customer meters
- 8,223+ Street Light
- 145 Fiber Miles

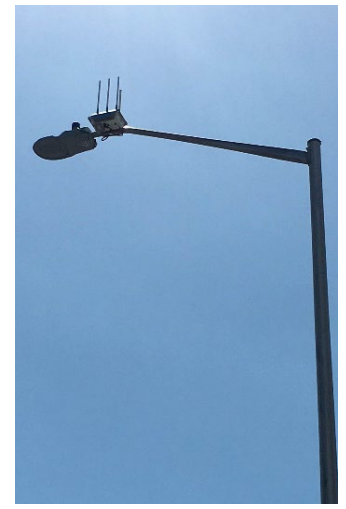
Distribution and Customer Substations



147 MW DVR Power Plant



Street Light Poles



SVP MeterConnect©

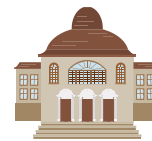
Data Center Cluster Map



Tech. Alley



Data Center



City Hall



Police Department



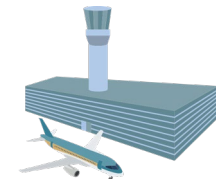
Santa Clara University / Mission College



Levi's Stadium



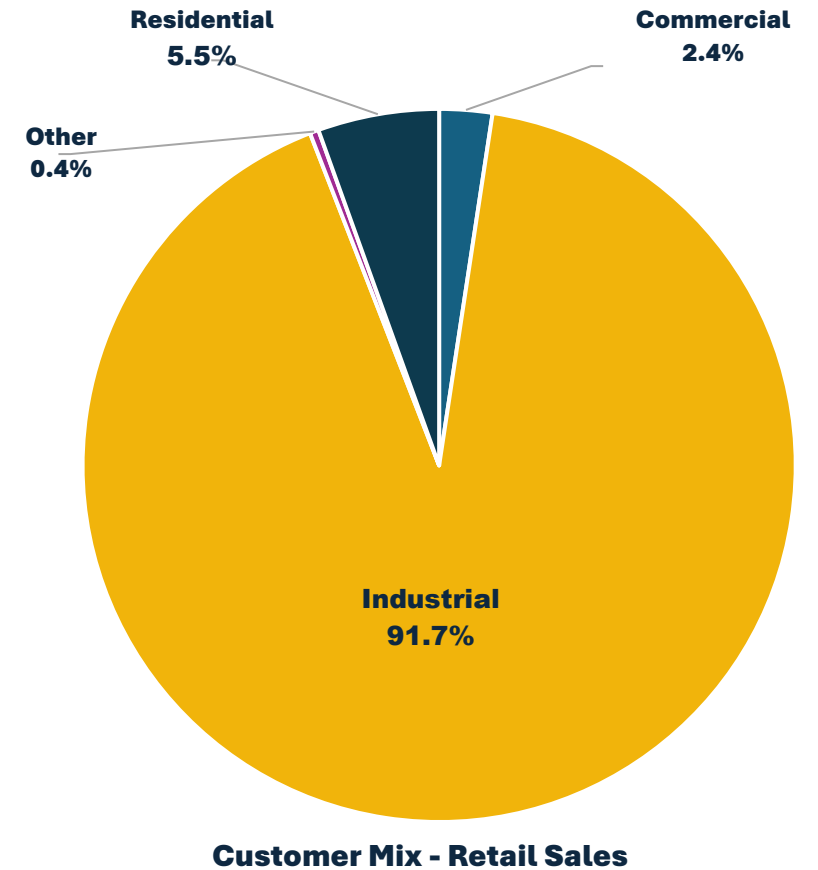
Great America



SJC Airport

Sales

- One of the Data Center Capitals of the West Coast
- Third largest public utility in CA
 - \$723.6 Million in Sales Revenues
- \$32+ Million General Fund Contribution
 - Third largest contribution to the General Fund
- Sales expected to double in the next 10 years
- Intel, NVIDIA, Microsoft, Vantage Data Centers, Digital Realty, Edgecore, AWS, AMD, etc...

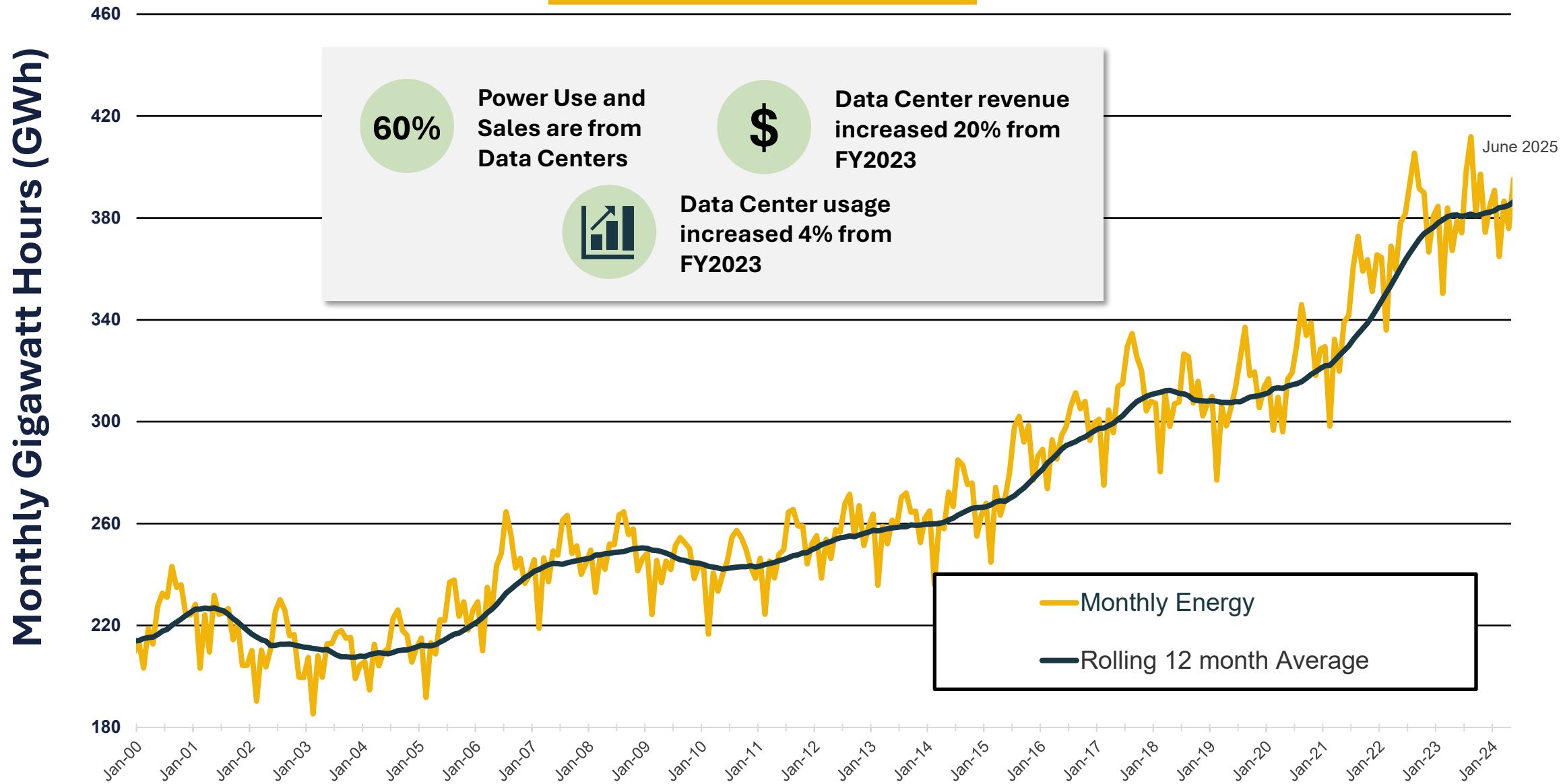


Regional Asset

Market advantage for companies to cite data centers in Silicon Valley

- Data Centers provide essential service for the Bay Area and State
- Economic driver for the entire region
- Region has a high density of technology, social media, and communications companies that are hyper users of cloud services, and thus customers of data storage services.
- Region has strong fiber infrastructure, which is critical for data center operations.
- City of Santa Clara has SVP, which is a utility with competitive electricity rates, reliability, and cleaner power.

SVP Historic Load Growth



Energy Density



	City of Santa Clara	City of Palo Alto	City of San Jose
Sq. Miles	19.3	26	181
Population	131,062	66,010	970,000
Peak Load	714 MW	170 MW	1,236 MW
Energy Intensity	36.9 MW / sq. mile *	6.5 MW / sq. mile	6.8 MW / sq. mile

* Projected load growth to 1,300 MW increases energy density to 67 MW per square mile.

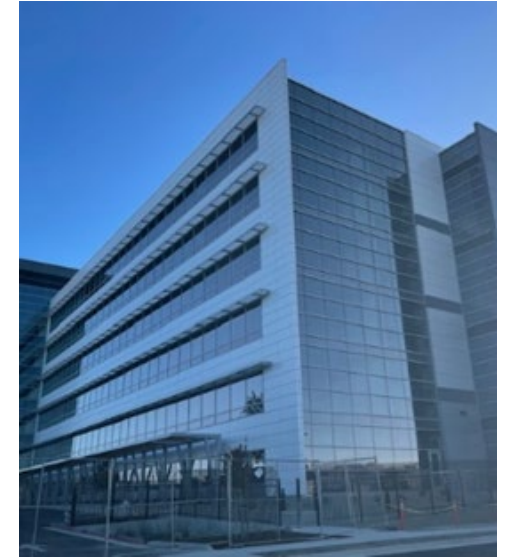
Data Center Needs

- Ready to Go Power Availability (Transmission capability)
- Partnership with Local Government
- Fiber Connectivity
- Renewable/Clean Power Options (Wind, Solar, hydroelectric, geothermal, SMR)
- Water Availability
- Streamlined Environmental and Permitting Process
- Clear Land Use Policies that Addresses:
 - Air Quality
 - Noise (Back-up Generators)
 - Design Standards (aesthetics)
 - Zoning

Laying the Groundwork

\$459 Million+ System Expansion Program

- Designed to double electric load capacity to meet current and future demand
- Current capacity: 700MW, projected to reach 1,300 MW in 5-10 years
- Growth driven by increasing demand from large industrial customers
- Demand stresses both SVP's local system and California's Bulk Electric Systems
 - Most new data centers request 50–99 MW
- Since 2021, SVP has communicated limited capacity by halting “Will Serve” letters, issuing system limitation notices, and conducting impact studies.



Capital Project Funding

- First Phase Bond issuance \$113 Million
- Funded through Load Development Fees (new customers)
- Rate Payers (existing customers)
- Combination of both
- Funding split depends on whether the project is adding capacity or replacing infrastructure





Powering The Center of What's Possible

ELECTRIC RESOURCE MAP

M-S-R Big Horn I Wind | 105 MW

M-S-R Big Horn II Wind | 17 MW

South Feather Power Project | 78 MW

Grizzly Hydroelectric | 20 MW

Camp Far West | 6.8 MW

Stony Creek Hydroelectric | 11.6 MW

G2 Landfill Gas | 1.3 MW

NCPA Geothermal | 55.7 MW

Geysers Geothermal | 50 MW / 100 MW
Coming 2025/2027

Western Area Power Administration (WAPA) | 136 MW

Altamont Wind Projects | 49.5 MW
TBD

NCPA Lodi Energy Center Natural Gas | 72 MW

Ameresco Vasco Landfill Gas | 4.6 MW

NCPA Calaveras Hydroelectric | 93.6 MW

NCPA Combustion Turbine Facilities | 31 MW

Tri-Dam Small Hydroelectric | 16.2 MW

IN TOWN RESOURCES 📍 Santa Clara, CA

Jenny Strand Solar PV System | 100 kW
Tasman Parking Structure Solar PV | 400 kW

Ameresco Santa Clara Landfill Gas | 750 kW

Donald Von Raesfeld Power Plant | 147.8 MW
Gianera Generating Station | 49.5 MW
230 kV Transmission Line | 400 MW Capacity

Ameresco Forward Landfill Gas | 4.6 MW

Friant Small Hydroelectric | 25 MW

Friant II Small Hydroelectric | 7 MW

Central 40 Solar | 40 MW

Aquamarine Solar | 75 MW

Rio Bravo Hydroelectric | 14.4 MW

Manzana Wind Power | 50 MW

Rosamond Solar | 20 MW

Cimarron Wind | 300 MW
Coming 2026

LEGEND



Wind



Solar



Geothermal



Hydroelectric



Landfill



Natural Gas

SVP Jointly Owned Transmission Projects

California-Oregon Transmission Project

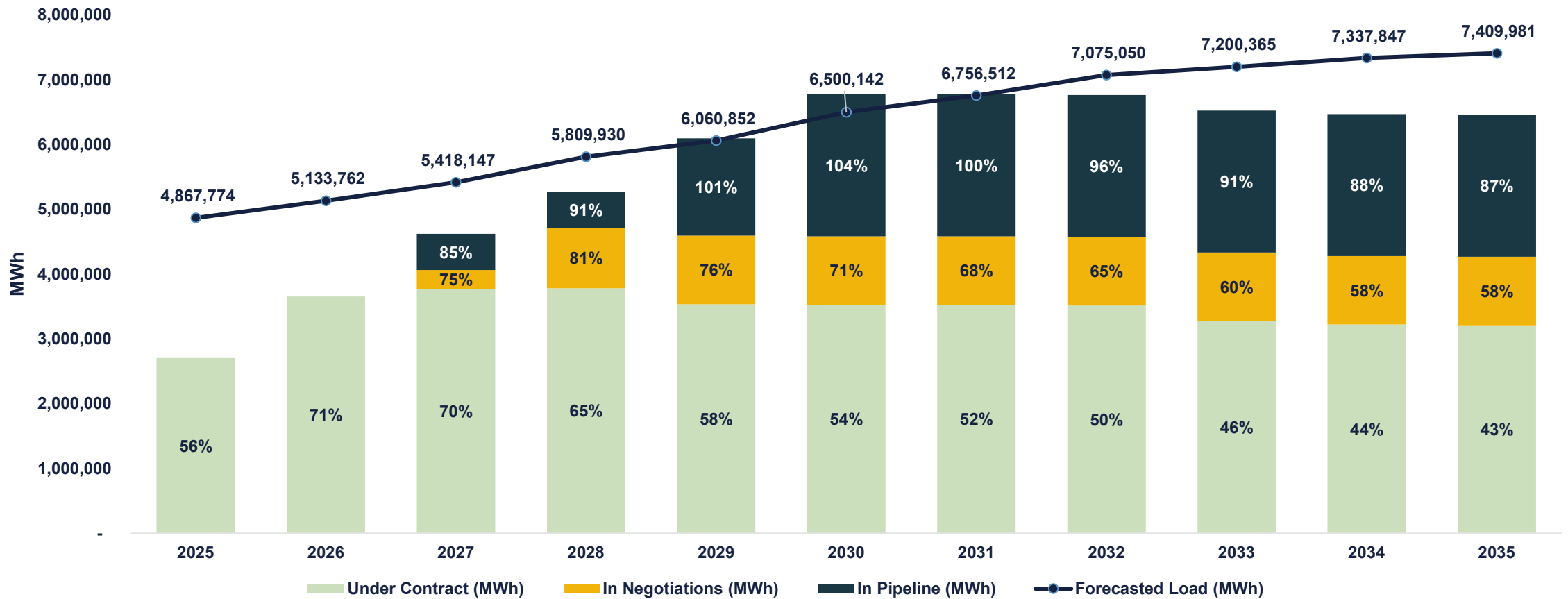
Tesla-Midway Transmission Service



CA Unique Challenges to Resources

- Aggressive (and ever changing) CA Renewable and Decarbonization Policies without consideration of infrastructure challenges
- Increased Mandates for Electrification of Transportation and Buildings
- Competition for California Eligible Renewables
 - Community Choice Aggregators
 - Hyperscale Datacenters
 - Investor-Owned Utilities
- Renewable Energy Demand Explosion – Demand Outstrips Supply
 - Interconnection backlog - CAISO “super” cluster process - 14 & 15 over 900 applications of projects
 - 16 is suspended
- Upward cost pressure on Capacity Markets





Renewables and Load Growth



* Does not include Large Hydroelectric Resources

Powering the South Bay




In Progress

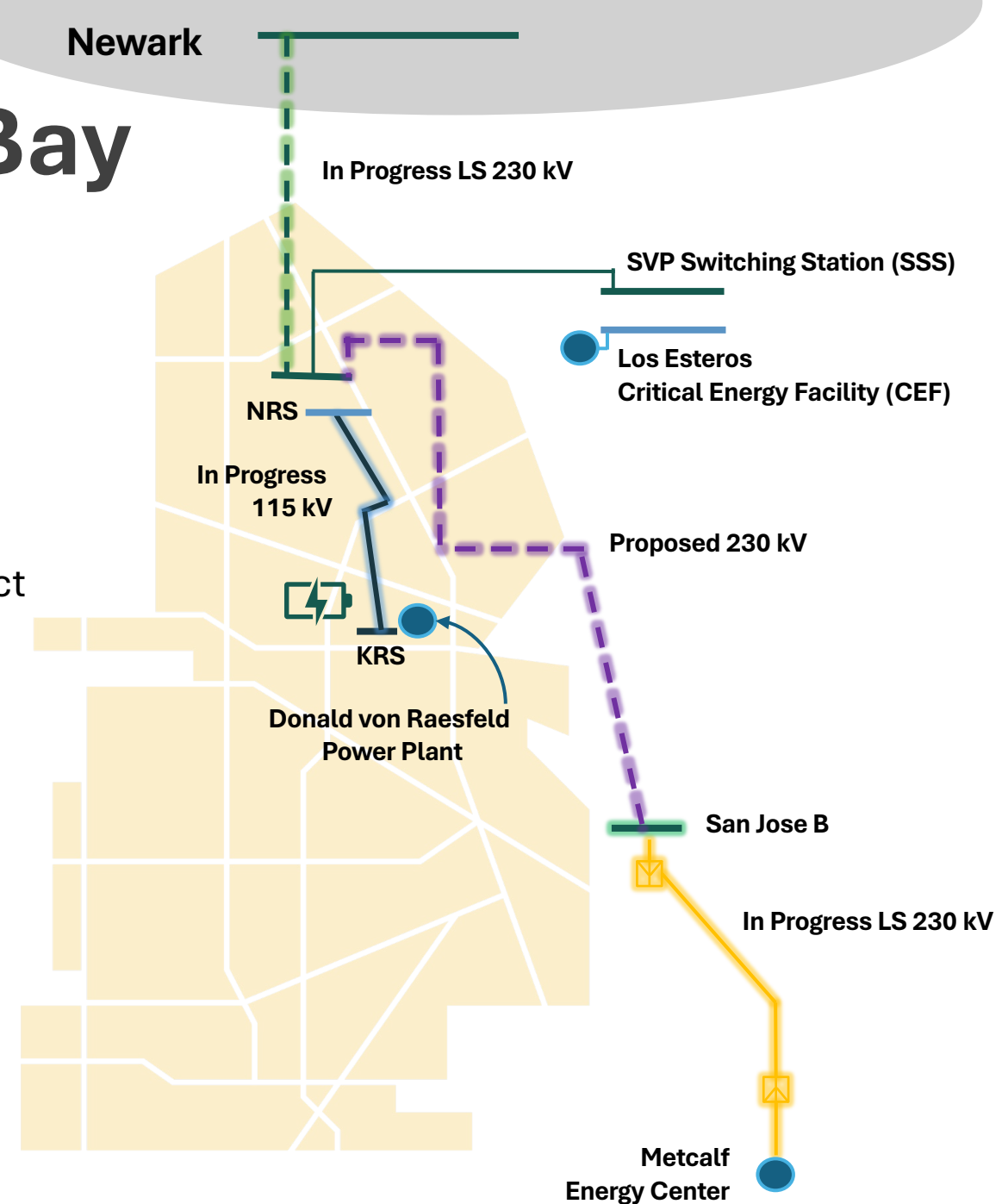
-  LS 230 kV (Newark to NRS)
-  LS 230 kV (Metcalf to San Jose B)
-  115 kV (NRS to KRS)
-  50MW/200MWh Battery Energy Storage Project

Proposed

-  230 kV (San Jose B to NRS)

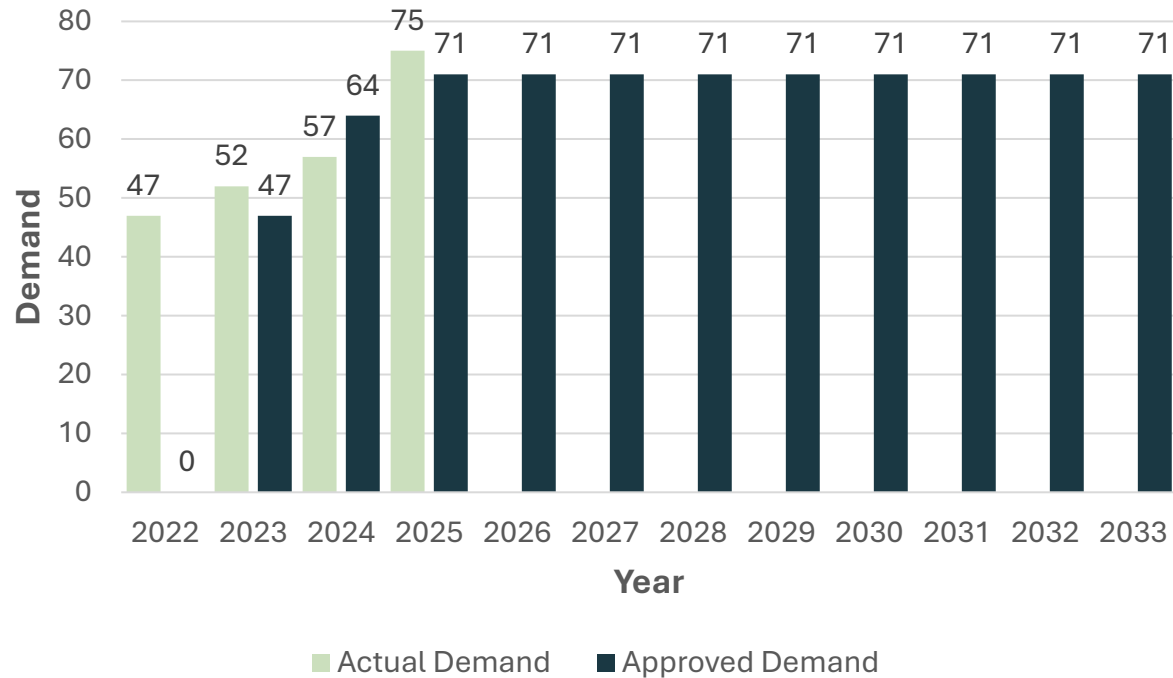
Regional

-  Power Plant
-  Alameda County
-  City of Santa Clara

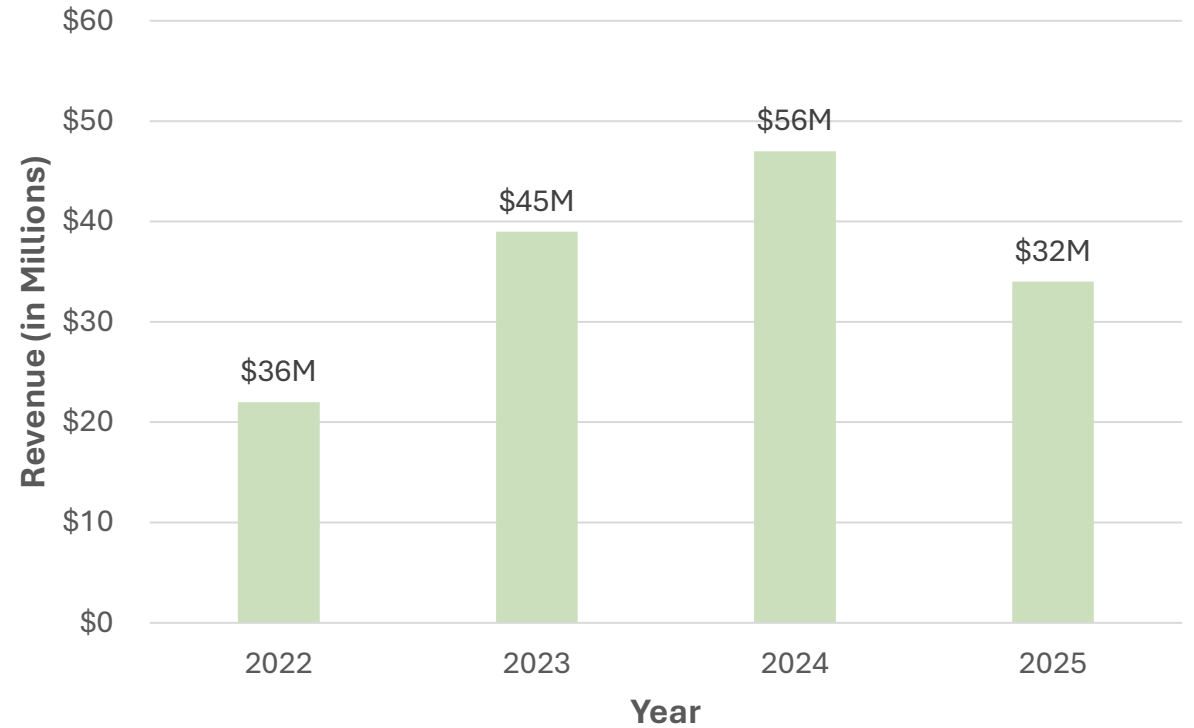


Growth Management

Actual Demand vs. Agreement Demand (in MW)



Revenue To-Date



Levi's® STADIUM

FAITHFUL FORTY-NINE
49
PRESENTED BY
esurance
SF



THANK YOU

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SONY

