



City Council

**Item #4: Silicon Valley Power
Bi-Annual Update**

RTC 25-15610

January 27, 2026

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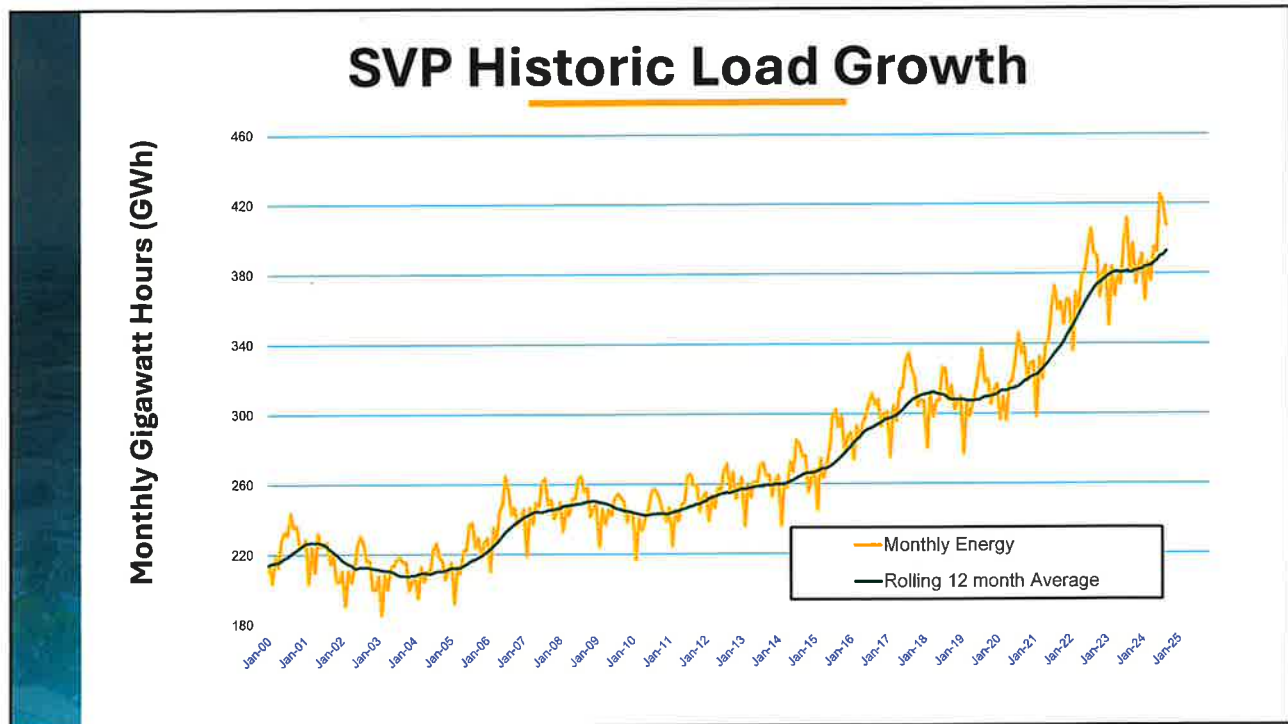
Agenda

- Load Growth and Strategic Priorities
- System Expansion Projects
- Technology Projects
- Resources, Procurement and Customer Programs
- Major Issues Coming in the next 12 months



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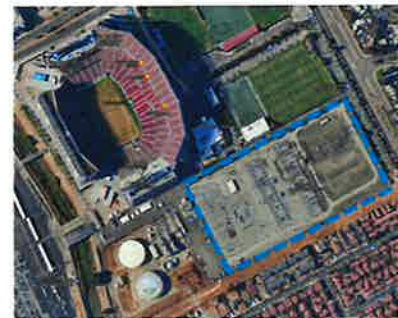
POST MEETING MATERIAL



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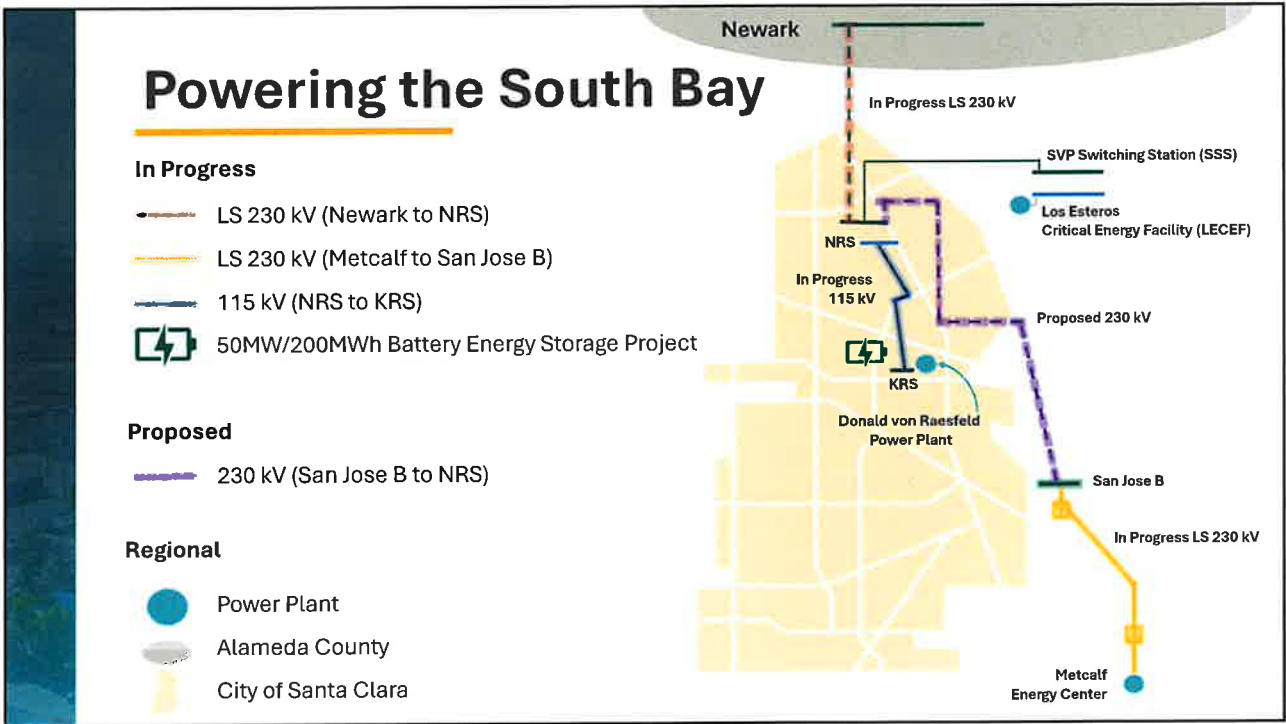
Load Growth - Key Priorities

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





Northern Receiving Station

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System Expansion Projects	
Northern Receiving Station (NRS)	Kifer and Scott Receiving Stations (KRS & SRS)
<ul style="list-style-type: none">• Upgrade and expansion• Contractor: Henkels & McCoy West• Schedule<ul style="list-style-type: none">✓ NTP issued Jul. 29, 2025✓ Construction underway• Estimated completion date:<ul style="list-style-type: none">• Jun. 13, 2028	<ul style="list-style-type: none">• Full rebuild and expansion• Contractor: DMZ Builders• Schedule<ul style="list-style-type: none">✓ NTP issued Aug. 20, 2025✓ Construction underway• Estimated completion date:<ul style="list-style-type: none">• SRS: Mar. 5, 2029• KRS: Jun. 23, 2029
	

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Capital Improvement Projects

60KV Junctions and Transmission line projects

Stender Way Junction	Energized April 2025
Laurelwood Junction	In construction, tentative energization 04/2026
Northwest loop Capacity Upgrade	Tentative energization 1st quarter 2026
Juliette Substation Expansion	In Design Tentative Energization 1st Quarter 2027
Homestead substation	In scoping and initial design phase <ul style="list-style-type: none"> Tentative energization phase 1, 2029, 2nd quarter, Phase 2, 4th quarter 2030
Great America Parkway & Tasman Lighting replacements	in construction, completion date end of 2025
Palm Substation Expansion	Tentative Energization, 3rd quarter 2028
Agnew substation Rebuild	Tentative Energization, 2029

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Maintenance Program Updates

Generation (Power Plants)

- Master Service Agreements
 - Gas Turbine, Steam Turbine, Generator, and Rotating Equipment
- Implemented 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

- Implemented Predictive Maintenance Program
 - Thermography, Partial Discharge Testing, and Transformer Oil Testing by 3rd Party quarterly in all Substations
- Developed Asset Management Program
 - Implementation is underway in phases through 2026

Transmission and Distribution

- Implemented tree trimming contract
- Implemented two new contractor contracts for T&D maintenance and construction
- Implemented a detailed utility pole assessment



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Technology Upgrades

Outage Management System

- ✓ OMS Project Kick-off: January 15, 2025
 - System Go-Live: Launched November 2025

Generation & Battery Resource Modeling and Risk Management Software

- Optimizes forecasted generation and battery operations
- Strengthens portfolio planning and risk management
- Competitive RFP completed; vendor evaluation in progress
- Software implementation targeted for mid-2026

Customer/Contractor Rebate System

- Brillion hosted database software to process rebates for customer programs
- Launched: Residential - Spring 2025, Commercial/Contractor - Fall 2025



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Technology Upgrades

Safety Training Program

- Unified Computer-Based Training platform for all SVP staff
 - ✓ HSI deployed to all staff January 1, 2025
- Two new contracts for hands-on safety training for T&D, Substation, and Generation
- Better training content and status tracking tools for managers

Citywide Work Management Software Tools

- ARCOS Software - Automated "callout", scheduling & crew management
 - ✓ Contract executed - October 2024
 - Began rollout Q2 2025 to Water/Sewer, SVP Customer Service and Engineering
 - Public Works, Community Development, Finance, Parks & Rec., Electric Field Personnel and Crew Manager - Q1 2026



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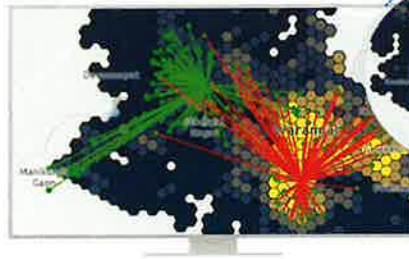
Technology Upgrades

Drawing Management System in Pilot Phase.

- AutoDesk Vault software installation phase complete.
- ✓ Pilot phase is in process for 2026
- ✓ Software will track revisions and design history.

Geographical Information System (GIS) migration to ESRI ArcGIS Pro

- Kick off Meeting in January 2026
 - User friendly interface
 - 3D integration
 - Project Based Work
 - Advanced Analysis Tools
 - Data Management



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Physical Security Improvements

- ✓ DHS Assessments began in 2024
- ✓ Approved by Council at the July 8, 2025 meeting
- Enhance safety & security across SVP facilities
- Deter criminal activity & unauthorized access
- Provide real-time data to law enforcement

3 Phases

- ✓ Phase 1: 7 Critical Generation and Substations
Completed by December 2025
- Phase 2: Roll out to remaining facilities
(roughly 27 assets)
Completed by December 2026
- Phase 3: training and policy and procedure creation



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Physical Security Improvements

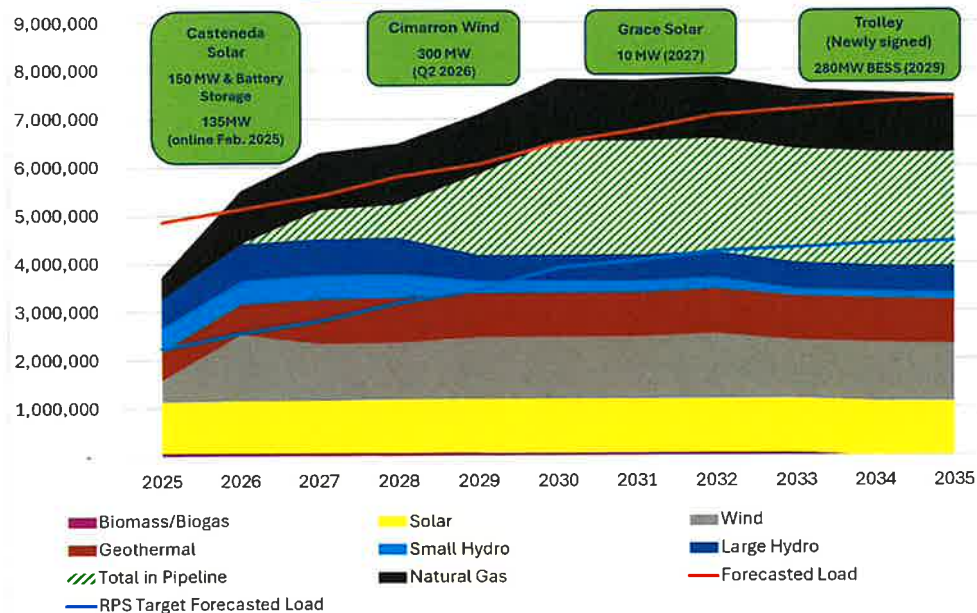
The new security system will provide:

- Depth of coverage across critical areas
- Video intercoms at select gates and entrances
- View stations in Operations and Generation Control Centers
- Speakers in key locations to deter theft and issue real-time audio warnings
- Access controllers with:
 - Secure remote door access
 - Real-time monitoring of assets
 - Advanced reporting in conjunction with PD
 - Multi-factor authentication



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Resource Stack 2025-2035



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Customer Engagement

Equity-Focused Electrification Mitigation Plan

- ✓ Kickoff - Fall 2025

Community Solar Feasibility Study - in progress

Program Changes

- Enhanced EV commercial and multifamily offerings
- New rebates for residential HVAC replacements
- ✓ Residential EV Charger rebates
- New HVAC tune-up rebate and new solar tune-up rebate
- K-12 education programs

City Building Lighting Upgrades

- Assisted City with upgrading 40 buildings

Community workshops and events

- Solar, Induction Cooktop, Lighting workshops
- Art & Wine, Auto Show, Bike to Anywhere, Earth Day/Arbor Day, Halloween, Holiday Tree Lighting

Rate increase outreach – began October 2025

New Programs Launching This Year...

- Residential New Construction - Multi-family and ADU Building Electrification Incentive Program
- Managed by a 3rd party



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Challenges Ahead

Policy Uncertainty

From Local, State & Federal. Making it hard to plan.

Tariffs

Increasing equipment costs and limiting sourcing options due to international trade restrictions.

Project Delays

Large Capital projects have inherent risks in timelines – transmission, local grid expansion, etc.

Supply Chain

Long lead times and material shortages are delaying critical infrastructure projects.

Staffing

Difficulty recruiting and retaining skilled workers is slowing project development and operations.

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Major Issues Coming in the next 12 months

Q1	Q2
<ul style="list-style-type: none"> • 60kV System Impact Studies Completed • SVP 15 year (2028-2041) Load Forecast accepted by the California Energy Commission in Dec. 2025 • CAISO Transmission Planning Process 2026/2027 Phase 1 Kickoff in January. • SVP participation in CAISO Large Load Working Group with PG&E, So Cal Edison, and San Diego Gas & Electric • Conditionally approved interconnection of 10.5 MW of generation to SVP system • Action to approve budget for SVP System Expansion Project at NRS and SSS for provision for a third 230kV Interconnection to SVP going to council on February 10th. • PG&E on schedule for the interconnection of Santa Clara Series Compensation Device 	<ul style="list-style-type: none"> • SVP requested line re-rate of PGE NRS-SRS #1 & # 2 Transmission Line in preparation for Summer 2026 loading. • Launch multifamily/ADU program • Substation agreements negotiations for the next approved TPP customers • SVP to release capacity evaluation and new queuing process for interconnection of 60kV customers • New Engineering Service Agreements grouping

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Major Issues Coming in the next 12 months

Q3	Ongoing
<ul style="list-style-type: none"> • Cost of service study • Construction contract award anticipated for 115kV Transmission Line from NRS to KRS • TPP Ph-0 TPP 2027-2028 System Expansion Plan Report. • SVP's 130th birthday celebration – July 	<ul style="list-style-type: none"> • Procurement efforts for the NRS 3rd CAISO line (TBD pending project approval) <ul style="list-style-type: none"> • 80kA breaker • Transformer procurement (230kV and PST) • Miscellaneous other procurements • Substation agreements for next TPP approved customers • Launching new modeling software for resources • Continued evaluation of PPAs for growth • Continued support of the SVP sustainability futures program • California Independent System Operator (CAISO) Transmission Planning Process (TPP)

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KH0

HOME / NEWS / THE CRITICAL POWER CHANNEL

Silicon Valley Power stockpiles discontinued GE Vernova JMUX, expects substation costs to go up with tariffs

Costs for the GE Vernova JMUX stockpiles are expected to rise significantly due to tariffs on the equipment.

By Luke James | November 10, 2025 | 2 min read

Los Angeles Times [SUBSCRIBE](#)

BUSINESS

Data centers in Silicon Valley stand empty, awaiting power

HOME / NEWS / THE ENERGY & SUSTAINABILITY CHANNEL

Intel looks to fund SVP substation expansion for Santa Clara data center growth

Looks to add 17MVA to support its data center campus

By Sebastian Moss | November 10, 2025 | 2 min read

Silicon Valley data centers totalling nearly 100MW could 'sit empty for years' due to lack of power — huge installations are idle because Santa Clara can't cope with surging electricity demands

Luke James
November 10, 2025 • 2 min read

HOME / NEWS / THE CRITICAL POWER CHANNEL

Silicon Valley data centers stand empty awaiting power connections - report

Grid issues mean facilities have yet to be energized

November 11, 2025 | By Matthew Gooding | Have your say

Data Centers — Santa Clara's Third Largest General Fund Revenue Generator

By Matthew Gooding
November 11, 2025 | 2 min read

NOVEMBER 19, 2025

Santa Clara City Council Questions Silicon Valley Power's Ability to Deliver Energy to Data Centers

HOME / NEWS / GRID LEVEL

Silicon Valley Power says data center load to double by 2035, will need geothermal power and batteries

Plots out the difficult pathway to 24/7 green energy

December 03, 2025 | By Sebastian Moss | Have your say

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Slide 20

KH0 Can you add more global data center issues?

Kathleen Hughes, 2025-12-05T16:47:28.328

AK0 0 Added a second slide

Astra Kredel, 2025-12-08T23:00:31.028

AK0 1 Maybe for closed session

Astra Kredel, 2026-01-05T19:37:53.491

Council Communication and Actions

Oct. 13, 2020	Master service agreements with several engineering consultant firms	July 18, 2023	Updated City Council regarding these key near-term projects
Apr. 6, 2021	Comprehensive review of upcoming load growth and capital projects to the City Council	October 10, 2023	Authorized the purchase of up to 12 high voltage transformers - \$81,392,908
Sep. 28, 2021	the City Council accepted SVP's Three-Year System Growth Plan Strategy	March 19, 2024	Informational Report Regarding Route Analysis for 115kV Transmission Line from NRS to KRS
Apr. 5, 2022	updated connection and load development fees for SVP	April 23, 2024	updated connection fees and load development fees
Nov. 15, 2022	City Council accepted SVP's System Expansion Plan for the California Independent System Operator's Transmission Planning Process	May 7, 2024	Authorized the negotiation and purchase of high voltage circuit breakers - \$38,000,000.
May 9, 2023	City's intent to issue tax-exempt electric system bonds		

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Council Communication and Actions

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	Nov. 12, 2024	Approved MND and MMRP and Route Approval for the 115kV Transmission Line from NRS to KRS (Continued from 10/8/24)
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	Nov. 12, 2024	Authorized the purchase of control enclosures with protection and control panels and neutral grounding resistors - \$14,950,000
Sep. 10, 2024	Approved the issuance of electric revenue bonds which provide funding for the large System Expansion Plan projects	Nov. 19, 2024	Authorized the purchase of capacitor banks with reactive switching devices, protection and control panels, insulators, and surge arrestors - \$12,650,000
Oct. 8, 2024	Action Continued on an MND and MMRP and Route Approval for the 115kV Transmission Line from NRS to KRS	Dec. 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

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Battery Energy Storage Project

Capacity up to 50MW/200MWh (4 hours daily)

Completed:

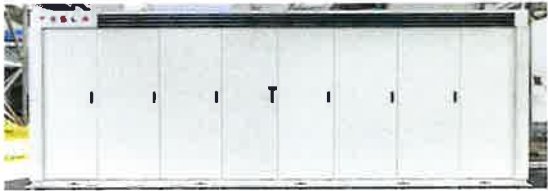
- IFC BESS Site Design (Civil, Electrical & Structural)
- IFC SVP Transmission Line & Control Enclosure Designs
- Approved Permits (Civil & Encroachment)

In progress:

- Fire, Electrical, & Structural
- Permitting with the City of Santa Clara
- Conduit Installation & Utility Relocations
- Long Lead Equipment Procurement by Ameresco has been placed for various items
 - Transformer
 - Switchgear
 - Battery
 - Main breaker
 - Inverter transformers
 - Disconnect switches
 - Control building

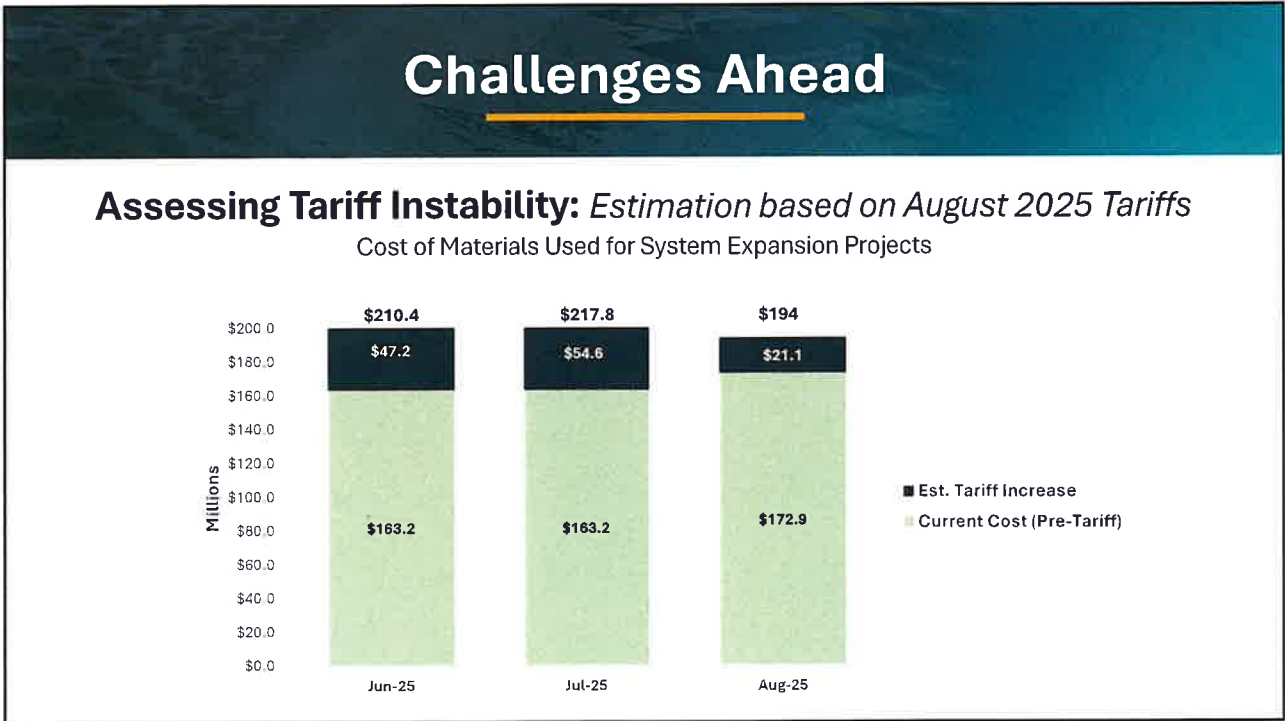
Expected Completion Date:

- 3rd Quarter 2026

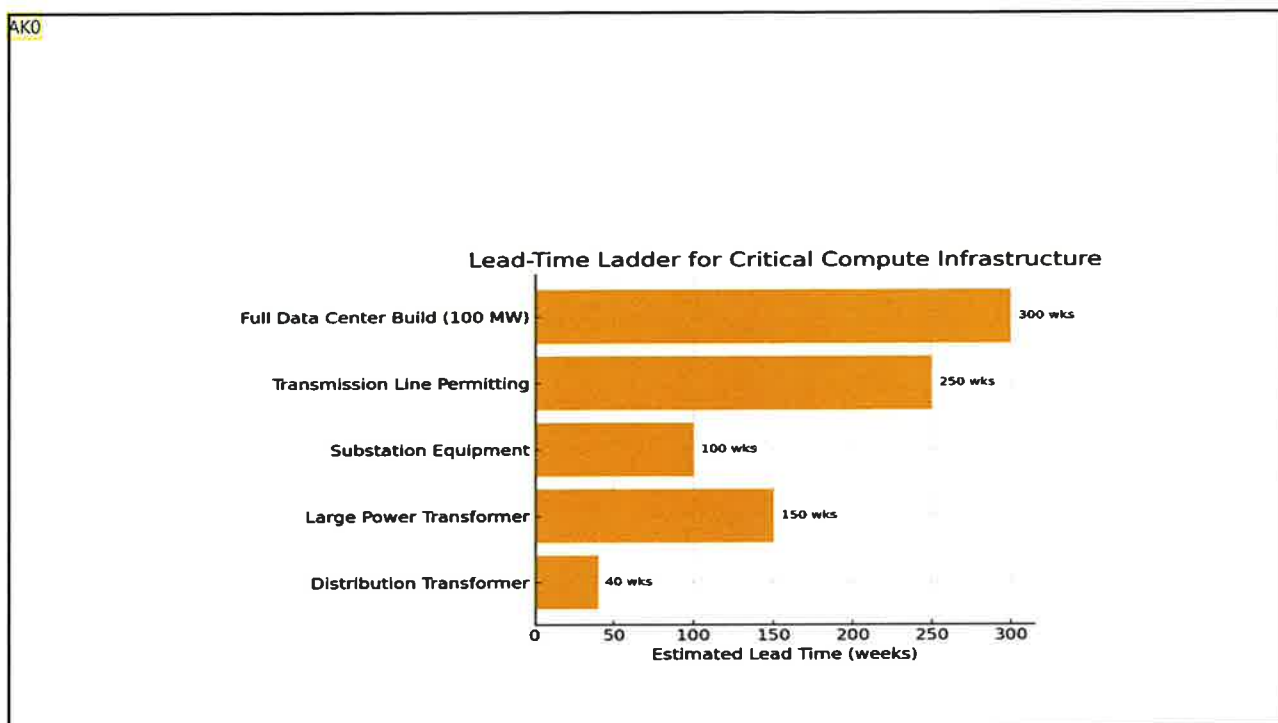


Example of a Tesla Megapack

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Additional Key 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, and Transformer Oil Testing by 3rd Party quarterly 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.



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Slide 25

AK0 Kathleen to finish

Astra Kredel, 2025-12-10T19:06:42.287