



Powering The Center of What's Possible

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Silicon Valley Power Comments on the Draft 2021-2022 Transmission Study Plan

Submitted to: regionaltransmission@caiso.com

The City of Santa Clara *dba* Silicon Valley Power (SVP) appreciates the opportunity to comment on the draft 2021-2022 Transmission Study Plan (Study Plan, hereafter) and materials presented at the February 25, 2021 stakeholder meeting. SVP appreciates CAISO's incorporation of SVP-provided load forecast and topology change files for multiple years for the 2021-2022 Transmission Planning Process (TPP).¹

As we explain below, the CAISO and PG&E must expeditiously approve mitigation plans and a comprehensive action plan to serve the significant load growth the CEC forecasted in the South Bay.

CEC and SVP Expect a Significant Load Growth Over the Next Several Years

As the CAISO is aware, SVP's load is expected to grow considerably in the next several years, primarily driven by hyper-scale data centers. CEC's latest adopted California Energy Demand Update (CEDU) 2020-2030 managed forecast (Demand Forecast 2020) accurately captures SVP's currently expected rapid load growth.

In Table 1, we provide a comparison of the 1-in-10 Summer Peak load for SVP modeled in the CAISO 2020-2021 TPP with the CEC's Demand Forecast 2020 adopted in January 2021. CAISO 2020-2021 TPP was based upon the 2019 IEPR final report (adopted on February 20, 2020). The CEC's Demand Forecast 2020 would be used by the CAISO in its 2021-2022 TPP.

The CEC's recently adopted forecast is significantly higher. For example, the CAISO modeled SVP's 1-in-10 Summer peak load at 657MW (=672MW minus 14.6MW of energy efficiency) in the year 2025 in the 2020-2021 TPP, whereas the CEC's Demand Forecast 2020 now shows SVP's peak load in 2025 at **1,011MW**, which is even higher than the SVP peak load of **865 MW** that the CAISO modeled under the *SVP High Load sensitivity* case for the year 2030.

¹ Study Plan, p.6



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Table 1: A Comparison of 1-in-10 SVP Summer Peak Load (MW) Modeled in CAISO 2020-2021 TPP Cases Vs. in CEC Adopted Baseline Demand Forecast 2020

Scenario	Year	CAISO 2020-2021 TPP*	CEC Adopted 2020-2030 CEDU
<i>Base</i>	2022	624	743
	2025	657	1,011
	2030	670	1,176
<i>SVP High Load Sensitivity</i>	2030	865	

*Adjusted for energy efficiency amounts

A Significant Number and Levels of Reliability Violations on the CAISO Controlled Grid Critical Facilities Serving SVP Load Are Expected In the Near-Term

The CAISO 2020-2021 Draft Plan noted multiple Category P1, P2, and P7 overloads on the Los Esteros-Nortech 115 kV line in both the short and long term.² To mitigate these overloads, the CAISO has indicated that it is working with PG&E to develop a project which could include reconductoring the 115 kV line.

SVP welcomes the coordination between the CAISO and PG&E to upgrade PG&E’s south bay area transmission system, which is where SVP load exists. SVP conducted a preliminary reliability assessment using the 2020-2021 TPP GBA 2025 Summer Peak power flow case as the starting case. SVP assumed certain topology changes to update the SVP network to the 2026 Summer configuration and scaled the SVP load to 1,011MW consistent with the CEC Demand Forecast 2020 (see Table 1).

As shown in Table 2, this assessment indicates that the P1, P7, and P6 overloads on the Los Esteros-Nortech 115 kV line and additional PG&E transmission facilities serving the SVP load are expected to be even worse as early as 2025 than those envisioned in 2030 under the *SVP High Load sensitivity* case studied in the 2020-2021 Plan.³ These PG&E facilities include the Newark-Northern Receiving Station (NRS) 115kV line, the Newark-Zanker-Kifer 115kV line, and the FMC-Kifer 115kV line the as shown in Table 2 below. For the year 2025, SVP’s preliminary assessment using the latest CEC load forecast shows that the P1 contingency of the loss of the SSS-NRS 230 kV causes **39%** overload on the Los Esteros-Nortech 115 kV Line, which is significantly higher than the **2%** and **25%** overloads identified under the two SVP load scenarios in 2030.

² Draft Plan, p. 102.

³ See 2020-2021 ISO Reliability Assessment - Preliminary Study Results, PG&E Greater Bay Area, CAISO 2020-2021 TPP, August 15, 2020.



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Table 2: A Comparison of Loadings (%) on the Critical Facilities Serving SVP Load in 2030 Identified by CAISO in 2020-2021 TPP and SVP's Preliminary Assessment for Year 2025

Overloaded Facility	Contingency	Category	Base Summer Peak 2030 with SVP load at 670MW*	SVP High Load Sensitivity Summer Peak 2030 with SVP load at 865MW*	Summer Peak 2025 Case with SVP load at 1,011MW**
Los Esteros-Nortech 115 kV Line	SSS-NRS 230 kV same as outage of SVP's PST or NRS T2	P1	102%	125%	139%
Los Esteros-Nortech 115 kV Line	LS ESTRS 230kV - Middle Breaker Bay 8	P2	102%	124%	139%
Los Esteros-Nortech 115 kV Line	Los Esteros - Trimble & Los Esteros - Montague 115 kV	P7	88%	110%	121%
Newark-NRS #1 115kV Line	Newark - Los Esteros & Los Esteros - Metcalf 230 kV Lines	P7	97%	Diverge	147%
Newark-NRS #2 115kV Line			80%	Diverge	130%
Newark-Zanker-KRS 115kV Line			<100%	Diverge	112%
San Jose A-San Jose B 115kV Line			<100%	Diverge	106%
Newark-NRS #1 115kV Line	Phase Shifter Path and Los Esteros-Nortech 115kV Line	P6	<100%	<100%	160%
Newark-NRS #2 115kV Line			<100%	<100%	151%
Newark-Zanker 115kV Line			<100%	<100%	121%
FMC-Kifer 115kV Line			<100%	<100%	107%
Los Esteros-Nortech 115kV	Phase Shifter Path and San Jose B-FMC 115kV	P6	<100%	<100%	159%
Newark-NRS #1 115kV			<100%	<100%	103%

*Source: 2020-2021 CAISO Reliability Assessment – Preliminary Study Results, PG&E Greater Bay Area, CAISO 2020-2021 TPP, August 15, 2020.

**Source: SVP Preliminary Assessment



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Significant Rapid Load Growth in SVP-San Jose Area Requires Timely Comprehensive Actions

In addition to the SVP internal load, the load surrounding SVP's system in the San Jose sub-area is expected to grow rapidly in the near-term. For example, Microsoft has proposed to construct and operate the San Jose City Data Center (99MW) connected to Los Esteros Substation.⁴ Therefore, several P1, P7, and P6 overloads on the Los Esteros-Nortech 115 kV Line and Newark-NRS #1 & #2 115kV lines identified under the SVP's Preliminary Assessment in the year 2025 (Table 2) would be even worse with the interconnection of the San Jose Data Center. The necessity to plan for projects to alleviate future overloads is critical given the timing of the SVP-San Jose new loads.

We believe it is important for the CAISO to timely develop and approve a plan to relieve the overloads delineated above. SVP is concerned that even if CAISO had already identified and approved transmission projects, they would not be completed in time to eliminate expected planning criteria violations. **Since any reinforcement of the transmission grid in the SVP/San Jose area will probably take significant time to construct, it is critical for CAISO and PG&E to approve mitigation plans and a comprehensive action plan expeditiously.** SVP expects to work closely with PG&E and the CAISO in such efforts.

SVP appreciates the opportunity to comment on the Draft 2020-2021 Transmission Plan and acknowledges the significant effort of the CAISO staff in its development. We look forward to working with PG&E and the CAISO to develop the needed transmission projects.

If you have any questions concerning these comments, please contact Albert Saenz at ASAENZ@santaclaraca.gov.

⁴ See 19-SPPE-04 (Small Power Plant Exemption) located at <https://ww2.energy.ca.gov/sitingcases/sj2/>