



Powering The Center of What's Possible

February 23, 2021

Silicon Valley Power Comments on the Draft 2020-2021 Transmission Plan

Submitted to: regionaltransmission@caiso.com

The City of Santa Clara *dba* Silicon Valley Power (SVP) appreciates the opportunity to comment on the draft 2020-2021 Transmission Plan (Draft Plan, hereafter) and materials presented at the February 9, 2020 stakeholder meeting.

The Draft Plan notes multiple Category P1, P2, and P7 overloads on the Los Esteros-Nortech 115 kV line in both the short and long term.¹ 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 also observes that these overloads on the Los Esteros-Nortech 115 kV line and additional PG&E transmission facilities serving the SVP load are even worse in the *SVP High Load sensitivity* case studied in the 2020-2021 Plan.² These PG&E facilities include the Los Esteros-SVP Switching Station 230 kV line, the Newark-Kifer 115kV line, and the Newark-Northern Receiving Station 115kV line as shown in Table 1 below. SVP believes that the results of the *SVP High Load sensitivity* case should be thoroughly considered in developing a plan of service for the area. SVP load growth projections are primarily driven by large-scale data center block loads that result in an SVP average annual load factor of as high as 80%, do not follow traditional load models. As SVP indicated in its comments on the 2020-2021 Transmission Planning Process (TPP) Preliminary Reliability Assessment Results and PTO Request Window Submissions, we have been concerned with SVP's projected load growth not being reflected.³

¹ Draft Plan, p. 102.

² See 2020-2021 ISO Reliability Assessment - Preliminary Study Results, PG&E Greater Bay Area, CAISO 2020-2021 TPP, August 15, 2020.

³ See (1) SVP's comments on the 2020-2021 TPP Preliminary Reliability Assessment Results and PTO Request Window Submissions, dated October 8, 2020 located at <http://www.caiso.com/Documents/SVPComments-2020-2021TransmissionPlanningProcess-Sept23-24-2020StakeholderCall.pdf>, (2) SVP's comments on the 2020-2021 Transmission Study Plan, dated March 16, 2020 located at <http://www.caiso.com/Documents/SVPComments-2020-2021TransmissionPlanningProcess-Feb282020StakeholderMeeting.pdf>



Powering The Center of What's Possible

Table 1: Loadings (%) on the Critical Facilities Serving SVP Load Identified by CAISO in 2020-2021 TPP*

Overloaded Facility	Contingency	Category	Base Summer Peak 2022	Base Summer Peak 2025	Base Summer Peak 2030	SVP High Load Sensitivity Summer Peak 2030
Los Esteros-Nortech 115 kV Line	SSS-NRS 230 kV same as outage of SVP's PST or NRS T2	P1	100%	98%	102%	125%
Los Esteros-Nortech 115 kV Line	LS ESTRS 230kV - Middle Breaker Bay 8	P2	99%	98%	102%	124%
Los Esteros-Nortech 115 kV Line	Los Esteros - Trimble & Los Esteros - Montague 115 kV	P7	85%	84%	88%	110%
Los Esteros-Silicon Switching Station 230 kV	LOS ESTEROS 115KV BAAH BUS #2 (FAILURE OF NON-REDUNDENT RELAY)	P5	96%	94%	97%	Diverge
Newark-Kifer 115kV Line	LOS ESTEROS 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDENT RELAY)	P5	58%	68%	76%	101%
Newark-Northern Receiving 115kV Line	LOS ESTEROS 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDENT RELAY)	P5	83%	97%	103%	131%

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

SVP's load growth includes California Energy Commission (CEC)-approved small generator exemptions granted to hyper-scale data centers in SVP's service territory. SVP has been working with the CEC's Energy Assessments Division on its demand forecast process to ensure that the CEC's forecast accurately captures future demand growth in the SVP area.⁴ As a result of these

⁴ See the City of Santa Clara dba Silicon Valley Power Comments - Commissioner Workshop on Updates to the California Energy Demand located at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=20-IEPR-03>



Powering The Center of What's Possible

efforts, CEC’s adopted (on January 25, 2021 at the CEC Business Meeting⁵) California Energy Demand Update (CEDU) 2020-2030 managed forecast (Demand Forecast 2020), accurately captures SVP’s currently expected rapid load growth. In Table 2, we provide a comparison of the 1-in-10 Summer Peak load for SVP modeled in the CAISO 2020-2021 TPP based upon the 2019 IEPR final report (adopted on February 20, 2020) with the CEC’s Demand Forecast 2020, which presumably would be used by the CAISO in its 2021-2022 TPP for different study years. For example, the CAISO modeled SVP’s 1-in-10 Summer peak load at 657MW (=672MW minus 14.6MW of energy efficiency) in year 2025, 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. This means that the P1 overload of 25% on the *Los Esteros-Nortech 115 kV line*, that CAISO identified in 2030 in the SVP High Load sensitivity case as shown in Table 1, would be significantly higher than 25% by 2025 itself. This is one example of numerous planning criteria violations that are expected to occur based on the fact that additional overloads were identified by the CAISO, and in some cases the power flow case diverged, in 2030 as shown in Table 1.⁶ SVP, therefore, expects significant reliability issues will be identified in the 2021-2022 TPP on the transmission network serving the SVP Load as early as 2025-2026.

Table 2: 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 ⁷
<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

The necessity to plan for projects to alleviate future overloads is critical given the timing of the SVP new loads. In SVP’s comments on the 2020-2021 TPP Study Plan, dated February 28, 2020, we provided a table identifying examples of PG&E projects with long implementation lead times in the

⁵ Slides #19-20 of the CEC Business Meeting Presentation located at <https://www.energy.ca.gov/event/meeting/2021-01/energy-commission-business-meeting>

⁶ *Ibid.*

⁷ California Energy Demand 2020-2030 Managed Forecast - Mid Demand / Low AAEE Case, 1-in-10 Net Electricity Peak Demand by Agency and Balancing Authority (MW), January 2021. See **1.5d** tab in the *TN236520_20210129T170205_CEDU 2020 Managed Forecast - LSE and BA Tables Mid Demand - Low AAEE Case.x*



Powering The Center of What's Possible

range of 6 to 15 years. We believe it is important 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 based upon the SVP High Load sensitivity study in the current planning cycle itself - before new reliability studies are completed in next transmission planning cycle.** 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 and PG&E staffs in its development. We look forward to working with PG&E and the CAISO to develop needed transmission projects.

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