DOCKETED	
Docket Number:	21-IEPR-03
Project Title:	Electricity and Natural Gas Demand Forecast
TN #:	240007
Document Title:	SVCE Demand Forecast Narrative
Description:	N/A
Filer:	Cheyene
Organization:	SVCE
Submitter Role:	Public Agency
Submission Date:	10/7/2021 4:46:54 PM
Docketed Date:	10/7/2021

Silicon Valley Clean Energy ("SVCE") utilizes its load forecasting model/methodology for three primary purposes: (1) for portfolio management and procurement; (2) for the development of financial projections; and (3) for Resource Adequacy compliance with the California Public Utilities Commission ("CPUC") and the California Independent System Operator ("CAISO"). The adopted load forecasting methodology focuses primarily on the projected customer counts within the SVCE service territory and incorporates historical per capita usage data to derive the load forecast. At present, the SVCE service territory includes Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Saratoga, Sunnyvale, Unincorporated Santa Clara County.

The load forecast is developed for each of the thirteen major customer classes served by SVCE. These classifications correspond with the customer categories for which statistical hourly class load profiles are published by Pacific Gas & Electric ("PG&E"). These include the following customer classes:

Load Profile Group	**Internal Forecasting Classification**	**2021 IEPR Forecast Classification**
E-1/E-TOU	Residential	Residential
A-1/B-1	Small Commercial	Commercial
A-6/B-6	Small Commercial	Commercial
A-10/B-10	Medium Commercial	Commercial
E-19-S/B-19-S	Large Commercial – Secondary Voltage	Commercial
E-19-P/B-19-P	Large Commercial – Primary Voltage	Commercial
E-19-T/B-19-T	Large Commercial – Transmission Voltage	Commercial
E-20-S/B-20-S	Industrial – Secondary Voltage	Industrial
E-20-P/B-20-P	Industrial – Primary Voltage	Industrial
E-20-T/B-20-T	Industrial – Transmission Voltage	Industrial
Ag	Agricultural and Pumping	Other
TC	Traffic Control	Other
SL	Street Lighting	Other

SVCE's load forecasting process starts with a baseline-forecast of current customers by end-use classification (residential, commercial, etc.), utilizing historical usage data and customer counts. SVCE uses historical weather data from San Jose International Airport (KSJC) as a proxy for its current service territory, and linear regression models to estimate relationships between weather variables (heating degree days, cooling degree days, and solar insolation) and customer consumption patterns. The resulting coefficients are then applied to normalized weather conditions, over a 5-year observation period, and current customer counts to derive a forecast for the existing customer base. Potential impacts of climate change are captured by utilizing the most recent 5-years of observed weather data as the benchmark for normal weather conditions.

Once the class-specific forecasts are derived, including all anticipated customers that will take electrical generation service from SVCE, PG&E class hourly load profiles are applied to translate the monthly usage data into hourly values (PG&E class profiles are used to consistently align with CAISO settlements requiring use of load profiles for specified customer classes). Furthermore, SVCE utilizes a four-year

rolling average for the PG&E hourly load profiles in order to normalize for weather or other short-term events and anomalies that impact the hourly load profiles.

For load projections beyond the current year, SVCE assumes a long-term annual growth rate of 0.5%, which reflects the estimated net increase in customer consumption due to economic and demographic factors. SVCE does not have a long-term history for its current customer base with which to compare the reasonableness of the projected long-term growth rate. However, SVCE believes that it is generally consistent with the net growth rate in the PG&E service area as a whole.

For SVCE's peak demand forecast, statistical analyses are utilized to determine historical relationships between recorded monthly peaks and energy consumption for its service territory. The peak demand forecast is then estimated as a function of forecasted consumption under normalized weather conditions, based on the observed historical relationships. Class-level peak demands are estimated based on the hourly class load profiles and are scaled to SVCE's monthly non-coincident peak forecast. A 6% distribution loss factor is also applied, which reflects the overall recorded historical average over the past three years.

SVCE utilizes historical consumption data to calibrate and adjust its load forecast. The calibration process is run monthly and compares the most recent monthly kWh and peak kW usage data to the forecast values. The forecast is tracked relative to both the initial usage estimates (T+9) reported to the CAISO as well as the final reported usage (T+70). To the extent that the monthly forecast error exceeds a 5% threshold, SVCE evaluates the potential causes of the variance and, if such error is deemed likely to persist, adjusts the forecast going forward.