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Description:	Pioneer Community Energy Form 4 Narrative 2023 IEPR Demand Forecast 23-IEPR-02 Forecast Methods and Models
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Pioneer Community Energy (“Pioneer”) 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 Pioneer service territory and incorporates historical per capita usage data to derive the load forecast. At present, the Pioneer service territory includes Auburn, Colfax, Lincoln, Loomis, Rocklin, Placerville, Unincorporated areas of Placer County, and Unincorporated areas of El Dorado County, with planned service expansion into Nevada City and Grass Valley in 2024.

The load forecast is developed for each of the thirteen major customer classes served by Pioneer. 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	2023 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

Pioneer’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. Pioneer uses historical weather data from Auburn Municipal Airport (KAUN) 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.

For the new territory expansion in 2024, PG&E provided Pioneer with monthly historical usage data for every eligible customer (Item 16), which is adjusted for assumed customer opt-outs and utilized for Pioneer’s load forecast until Pioneer has twelve months of historical information on the new group of

customers. Pioneer applies an assumed opt-out rate to the eligible customer accounts (and associated electric loads) that are offered service. Pioneer is assuming a 10% opt-out rate for the currently eligible expansion related customers. Monthly energy consumption estimates, derived from historical data, are applied to the expected customer enrollments, which yields a monthly energy forecast by customer class for the new customer groups.

Once the various forecasts layers are finalized and aggregated into total class-specific forecasts, including all anticipated customers that will take electrical generation service from Pioneer, 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, Pioneer 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, Pioneer 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. Pioneer 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, Pioneer believes that it is generally consistent with the net growth rate in the PG&E service area as a whole. Pioneer has not included the potential effects of incremental energy efficiency, demand response, distributed energy resources, and other behind-the-meter programs in its current long-term forecast. If and when Pioneer administers demand modifying customer programs, Pioneer will update its load forecast accordingly.

For Pioneer'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 Pioneer's monthly non-coincident peak forecast. A 6% distribution loss factor is also applied, which reflects the overall recorded historical average over the past four years.

Pioneer 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, Pioneer evaluates the potential causes of the variance and, if such error is deemed likely to persist, adjusts the forecast going forward.