DOCKETED	
Docket Number:	23-IEPR-02
Project Title:	Electricity Resource Plans
TN #:	250925-2
Document Title:	Clean Energy Alliance Form 4 Narrative 2023 IEPR Demand Forecast
Description:	Clean Energy Alliance CEA Form 4 Narrative 2023 IEPR Demand Forecast 23-IEPR-02 Forecast Methods and Models
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Submission Date:	7/3/2023 1:26:51 PM
Docketed Date:	7/3/2023

Clean Energy Alliance ("CEA") 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 CEA service territory and incorporates historical per capita usage data to derive the load forecast. The CEA service territory includes the Carlsbad, Del Mar, Solana Beach, Escondido, and San Marcos, with planned service expansion into Oceanside and Vista in 2024.

The load forecast is developed for each of the five major customer classes served by CEA. These include the following customer classes:

Load Profile Group	Internal Forecasting Classification	2023 IEPR Forecast Classification
RES	Residential	Residential
SMLCOM	Small Commercial	Commercial
MEDCI	Medium & Large Commercial	Commercial
AGR	Agriculture & Pumping	Other
LIGHT	Lighting	Other

CEA'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. CEA uses historical weather data from San Diego International Airport (KSAN) 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. Class-level hourly load profiles, created by analyzing historic interval data provided by SDG&E for CEA's customer base, are applied to translate the monthly usage data into hourly values. Monthly peak demand reflects the maximum hourly CEA demand within each month. A 4.3% distribution loss factor is also applied, which closely aligns with the overall recorded historical average over CEA's existence.

For load projections beyond the current year, CEA 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. CEA 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 CEA administers demand modifying customer programs, CEA will update its load forecast accordingly.

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