DOCKETED	
Docket Number:	25-IEPR-03
Project Title:	Electricity and Gas Demand Forecast
TN #:	264285
Document Title:	CPA 2025 IEPR Demand Forecast Form 4 Narrative Public
Description:	N/A
Filer:	Jen-Ann Lee
Organization:	Braun Blaising and Wynne
Submitter Role:	Public Agency
Submission Date:	6/16/2025 2:42:08 PM
Docketed Date:	6/16/2025

Form 4 – Load Forecast Documentation

Data Sources

CPA receives AMI data for 2019-2024 for active customers. This dataset served as the primary source of data for CPA's energy and peak demand forecasts.

Additional sources of data include the CEC's Integrated Energy Policy Report (IEPR) for growth assumptions, vehicle counts for CPA service territory from the DMV, installed battery storage and PV from the customer list, historical loss factors provided by our data service provider, and hourly weather data at four weather stations from AccuWeather. The weather stations are KBUR (Burbank), KLAX (Los Angeles), KCMA (Camarillo), and KFUL (Fullerton).

Methodology

CPA aggregated its customer interval data by rate literal, energy product (proportion of renewable energy), vintage, and CARE status. Aggregated energy by group was normalized based on customer counts. Each rate literal was forecasted independently and then aggregated to form a system level retail energy forecast. Distribution losses are added based on group distribution voltage, month, and hour of day to get a system level loss adjusted load forecast.

The forecast model is a random forest model that controls for weather variables from 4 weather stations and calendar features. Growth is added exogenously based on the IEPR. Weather scenarios from 2014-2023 provided by AccuWeather are used to predict the forecast period. The resulting energy forecast is the average of the 10 weather scenarios.

Monthly peak forecasts are calculated based on historical load factors and the loss adjusted energy forecast. CPA identified the top 3 system level peaks for each month of the last 6 years of data available. We then found the coincident peaks of each rate family for each of the 6 years. The 3 peaks per month were then averaged for each rate family to form the denominator of the load factor calculation for that month and that group, with the average hourly load for that month and that group being the numerator. The load factor used for each month of the RA forecast period is the average of the available monthly load factors.

Load Migration Assumptions

CPA assumes a steady-state opt-out rate for residential customers at 0.48% annually and a steady state opt-out rate for small commercial customers at 0.31% annually.

The communities of La Canada Flintridge, Lynwood, and Port Hueneme are expected to transition to CPA in October 2025, at an assumed opt-out rate of 0%.

Load Modifier Electric Vehicle Assumptions

CPA forecasts the stock of light-duty EVs using a linear regression model to predict new car sales which includes CARB new EV sales mandates and a third-party new vehicle sales forecast. Historical stock is based on DMV data for registered vehicles within CPA's territory. The EV stock forecast is translated into electricity usage by the CEC's charging per vehicle forecast. Hourly shapes applied to the total usage assume that 50% of charging is unmanaged (driver plugs in their EV, it starts charging immediately), 49% customer managed (driver manually sets charging times via the vehicle or charger), and 1% smart managed (A charging session that is dynamically optimized based on a range of inputs including the drivers' charging requirements, ready-by time, retail electric rates, etc.)

Load Modifier BTM PV Assumptions

CPA creates a historical installed capacity timeseries using information provided by SCE in the customer list. A model is fit based on the CEC SCE Forecast zones 7 and 8 historical and forecast installed capacity data. Installed capacity is then turned into GWh based on CEC Energy per kW on the same forecast zones. Using the CEC hourly forecast for PV the GWh forecast is then distributed to each hour throughout the year for forecast zones 7 & 8.

Load Modifier BTM Storage Assumptions

CPA creates a historical installed capacity timeseries using information provided by SCE in the customer list which contains installed kW by customer. In the CPA territory storage is highly reliant on PV installation which aligns with the same CEC forecast procedure. Using CPA internal PV capacity forecast, a linear regression is used to create a robust model that predicts installed storage capacity for the CPA territory. Using 2021-2022 SGIP Impact Evaluation results written by Verdant Associates, LLC CPA is able to convert the kW installed by residential and non-residential capacity to an hourly shape, accounting for the charge and discharge of the battery.