DOCKETED	
Docket Number:	25-IEPR-03
Project Title:	Electricity and Gas Demand Forecast
TN #:	264290
Document Title:	Marin Clean Energy Form 4 Narrative - 2025 IEPR Demand Forecast
Description:	N/A
Filer:	Troy Nordquist
Organization:	Marin Clean Energy
Submitter Role:	Public Agency
Submission Date:	6/16/2025 4:52:29 PM
Docketed Date:	6/16/2025

Marin Clean Energy ("MCE") 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"). Due to the nature of MCE's business as a rapidly growing Community Choice Aggregator which has experienced a constantly changing customer base since its inception in 2010, the adopted load forecasting methodology focuses primarily on the projected customer counts within the MCE service territory and incorporates historical per capita usage data to derive the load forecast. At present, the MCE service territory includes all of Marin and Napa Counties and parts of Contra Costa and Solano Counties.

The load forecast is developed for each of the thirteen major customer classes served by MCE. 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**	**2025 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

MCE's load forecasting process starts with a base-forecast of current customers by end-use classification (residential, commercial, etc.), utilizing historical usage data and customer counts. MCE uses historical weather data from Concord Buchanan Airport (KCCR) 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. MCE assumes a baseline long-term annual growth rate of 0.5%, and adjusts for the incremental impacts of program expansions, energy efficiency, distributed generation, and electric vehicle demand, factors. In addition to current saturation in energy efficiency, demand response, and distributed energy resources, the forecast includes anticipated growth to these modifiers based on historical trends as well as internal studies on future growth.

For MCE’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 MCE’s monthly non-coincident peak forecast. A 6% distribution loss factor is also applied, which reflects the overall recorded historical average.

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

Other Uncommitted Load Modifier Programs

Load-Modifying Demand Response (DR)

Forecasted impacts from Load-Modifying Demand Response are based on projected participation in MCE’s Peak Flex Program. Per-customer dispatchable capacity values were developed using historical performance data from both MCE’s Peak Flex and Clean Power Alliance’s (CPA) demand response programs. These datasets were analyzed to determine average load shed capabilities by customer segment—residential and commercial. Future capacity forecasts apply these average per-customer capacity values to projected enrollment levels, which incorporate internal forecasts of program growth and customer engagement rates. This approach provides a grounded, data-driven estimate of future DR impacts based on proven historical outcomes.

Managed Electric Vehicle (EV) Charging

Forecasts for Managed EV Charging are derived from measured program performance in 2024, including the observed per-vehicle capacity contribution. The model assumes that this per-vehicle capacity remains constant over time. Growth in the total number of participating vehicles is forecasted at 20% annually, reflecting program expansion, increased EV adoption, and improved customer onboarding strategies. This approach ensures a scalable forecast that captures the increasing role of EV load management in MCE’s broader demand-side strategy.

Energy Efficiency (EE)

The energy efficiency forecast is anchored in the approved CPUC values from MCE’s latest EE portfolio application, covering the period through 2031. These values reflect vetted savings estimates for both resource and non-resource programs. Beyond 2031, savings are extrapolated using a scaling factor that reflects historical growth trends and anticipated future investment in energy efficiency. The scaling approach maintains consistency with current planning assumptions while enabling long-term visibility into EE portfolio contributions to load reduction.