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2021 IEPR
Form 4 Demand Forecast Methods and Models
CleanPowerSF

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2021 IEPR for CleanPowerSF

Form 4 Demand Forecast Methods and Models

CleanPowerSF uses electric utility industry forecasting software (Itron MetrixND) which uses various industry standard numerical computational methods, including time series-based regression analysis. Load forecasts take into consideration historical weather data and a 2-week weather forecast to help predict customer behavior/load patterns. These load patterns are developed from historical usage data for each customer in each rate class. An updated customer count for each model is then fed into the computation models to ascertain the total load on the system.

CleanPowerSF performs forecasts on a short-term and a medium-to-long-term basis, both of which use the same forecasting models built into Itron MetrixND noted above. While short-term forecasts are conducted primarily for day-to-day business operations, medium-to-longer-term forecasts are conducted for regulatory requirements and business planning purposes. Standard long-term forecasts are for Resource Adequacy (RA), Congestion Revenue Rights (CRR), Energy Resource Recovery Account (ERRA), and Integrated Energy Policy Reports (IEPR).

Historical data, consisting of hourly energy consumption for all AMI recorders (loss adjusted), actual and forecasted customer count, as well as holiday schedules and weather data, are assembled through automated and manual processes for import into each MetrixND model. Forecasts are generated by each of the ten broadly defined rate classes consistent with PG&E's broad rate classes, and with adjusted horizons. The final system forecast is prepared by aggregating these rate class-based forecasts.

Forecast Calibration Procedures

Every forecast is reviewed by staff and may be calibrated if needed. Calibration is done to adjust for changes in individual usage patterns of large customers that may not be reflected in the outputs of the forecasting models.

Economic and Demographic Data

The forecast assumes that loads will gradually increase as electric usage recovers from the COVID-19 impact.

Historical Peak and Projected Peak Loads

Historical peak loads are compared with the forecasted peaks and adjusted based on recommendations from Management, forecasting Analysts/Specialists, and other data as necessary.

Energy and Peak Loss Estimates

CleanPowerSF calculates hourly energy and peak loss estimates for each major rate class.

Estimates of Direct Access, Community Choice Aggregation, and Other Departed Load

CleanPowerSF currently assumes a steady state opt-out rate of 3.9%.

The forecast includes the impact from Direct Access (DA) departing load effective January 2022, however it does not assume any further departing load beyond standard opt-outs as provided above.

Weather Adjustment Procedures

The MetrixND forecast models normalize weather by taking the average temperature for each given hour based on its three-year dataset or hourly temperatures. The weather data is obtained from the local weather station in downtown San Francisco. As new data becomes available it will be used for normalization.

Hourly Loads by Subarea

Currently CleanPowerSF does not review hourly loads by Subareas/geographic zones within the City and County of San Francisco. Note that San Francisco is within a single PG&E SubLAP (PGSF) which is in the Greater Bay Area Local Capacity Area.

Known Load Growth Projects

CleanPowerSF is continually updating its projections and assumptions for electrification including building decarbonization and transportation electrification.

Other Load Modifier Impacts

CleanPowerSF highlights issues with access to data and information necessary to adequately respond to Form 3 of the 2021 IEPR Demand Forecasts. For example, the Utility Distribution Company must ultimately approve any interconnection requests by customers for various load modifiers including Rule 21 interconnections and Rule 24 Demand Response Providers whereas CleanPowerSF has limited to no input in such request processes. However, CleanPowerSF has attempted to forecast out the annual *incremental* increase in its Service Territory for BTM Solar PV by using historical Rule 21 interconnection data and applying a modest growth rate. CleanPowerSF then utilized California Solar Initiative load profiles for zip codes within San Francisco to simulate potential production profiles for the annual *incremental* BTM Solar PV installations.