4. Demand Forecast Methods and Models

Demand Forecast Methodology

For most years, Glendale *Water & Power* (GWP) uses linear regression modeling to forecast peak load and total system energy consumption. Recognizing that CY 2010 was a cooler year than previous and that a significant economic downturn had occurred, the forecast CY 2011 goes back to closer to 2009 levels. Beyond the calendar year 2011, the load is normalized for weather and is flat growth, due to efficiency measures and solar installations, with the exception of forecasting potential Electric Vehicle use within the City. GWP is a community without a large industrial customer base. In fact, the customers that are listed in the industrial category are mostly large commercial customers such as the Glendale Community College and high-rise office buildings.

Demand Forecast Methodology- Energy Efficiency and Demand-Side Measures

GWP uses a separate forecast for energy efficiency (EE) and other demand-side measures and is shown as a line item on the S-1/S-2 forms. Our Public Benefit Charge office provides this data on a Fiscal Year basis, not Calendar Year which is provided in those forms currently.

GWP's Public Benefit Charge Program office uses CEC AB 2021 information developed with SCPPA, NCPA, and Rocky Mountain. The E3 software tool projects Demand and Energy Savings Targets going forward based upon the various programs in place and new programs to be implemented. GWP currently does not have any interruptible demands nor DCLM in place.

Because GWP uses historic energy usage by customer class in its forecast for future energy consumption, the historic energy usage reflects all energy efficiency programs that were implemented over the course of the last 10 years (with the most significant reductions occurring in the past few years). Growth within the City of Glendale has been offset by GWP's aggressive energy efficiency and solar incentive programs. The past actual energy demand mega-watt hours are mitigated by a negative energy demand as a result of these programs.

I. System Forecast

Monthly peak demand is estimated using a 1-in-2 peak load forecast as requested by WECC. The increase in this peak demand is due to Electric Vehicle charging station use in the public sector – low scenario- not home use which would be mostly off-peak.

As mentioned earlier, GWP's load forecast from 2010 actual is normalized for weather 11.5% and is flat growth, due to aggressive efficiency measures and solar installations, with the exception of forecasting potential Electric Vehicle (EV) use within the City. EV use potential was analyzed in 2010. The low market penetration level was used in the forecast of energy load.

II. Customer Class Forecast

GWP does not forecast load by customer classification. However, GWP is in the process of completing a system-wide Smart Grid, which eventually will allow us to better model our forecasts specifically by customer classification. More transparent load data will help us determine as to which segments of the customer classes are weather-sensitive, who might react better to media reduction notification and track the effects of load management and energy efficiency programs.

e. Other Consumption

GWP absorbs the energy use for Street Lights and some minor Parks and Recreation facilities. Much of this usage is not metered, but is estimated based upon the types of lamps installed, which is added to the actual and forecast amounts.