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Filer:	Rebecca Simonson
Organization:	Sonoma Clean Power
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FORM 4 DEMAND FORECAST METHODS AND MODELS

SONOMA CLEAN POWER

SERVICE AREA AND CUSTOMER BASE

Sonoma Clean Power (SCP) currently serves all incorporated and unincorporated areas of Sonoma County except for Healdsburg which has its own municipal utility. Starting June 1, 2017, Sonoma Clean Power will also serve all incorporated and unincorporated areas of Mendocino County with the exception of Ukiah which also has its own municipal utility.

Customers within the SCP service area have the ability to opt-out of SCP and remain or go back to the local Investor Owned Utility (IOU) Pacific Gas & Electric Company (PG&E). SCP does not serve customers who have opted out or customers that are Direct Access (DA).

SCP serves all customer classes which are broken down into the following load classes:

- RES- all residential
- A-1- small general commercial
- A-6- small general time of use (TOU) commercial
- A-10- medium general demand-metered commercial
- E-19-S- medium general demand-metered TOU secondary voltage
- E-19-P- medium general demand-metered TOU primary voltage
- E-19-T -medium general demand-metered TOU transmission voltage
- E-20-S- maximum demands >1000kW secondary voltage
- E-20-P- maximum demands >1000kW primary voltage
- E-20-T- maximum demands >1000kW transmission voltage
- TC- traffic control
- SL- street/highway/outdoor area lighting

FORECASTING METHODOLOGY

Annual Retail Electricity Sales
The load forecast on Form 7.2 includes actual recorded historical data for 2015 and 2016 and forecasts forward through 2028. The forecast followed the following process:

1. Historical 2015 and 2016 kWh usage data and quantity of meters was compiled for each load profile to determine a kWh/meter profile for each load class
   a. CAISO settled load and number of revenue meters were used for Sonoma County kWh/meter load
      i. 6% total system losses were assumed
   b. Historical PG&E E-CCAINFO tariff "Item 16" data was used for historical Mendocino kWh/meter load

2. Historical opt-out and participation rates combined with U.S. Census Bureau historical population increases for Sonoma and Mendocino counties were used to forecast the number of customer meters for each load class.
   a. Historical "Item 16" data was used for the starting point of eligible Mendocino customers
3. The kWh/meter profile for each load class was combined with the total forecast quantity of meters for the same load class and totaled to determine total kWh.
   a. Year to year variances of kWh/meter were assessed to determine outlier years resulting from weather, economic, or behavioral shifts.
      i. There was less than 1% variance between years of recorded kWh/meter data, therefore there was no outlier year recorded
4. Current efficiency trends were forecast forward through 2020 with incremental increases in efficiency modelled from 2020 forward
5. Behind the meter solar capacity forecast was determined using yearly capacity increase trends reported for Sonoma and Mendocino counties from California Distributed Generation Statistics http://www.californiadgstats.ca.gov/charts/
6. Electric vehicle and fuel switching goals of SCP's programs were used to forecast forward electrification

Reasonableness

The forecast was plotted monthly and was shown to follow the similar profile for historical usage.

Historical Performance

This methodology has only been used for forecasting past 2017, so historical performance is not available.

Peak Demand

Peak demand was forecasted utilizing the same methodology as described above for the annual retail electricity sales forecast, however more granular monthly and hourly data was analyzed. 3% transmission and unaccounted for energy (UFE) losses were used.

The maximum coincident total load was determined for each month based on the hourly load profiles for each load class. The historical coincident peak demand occurred each year in September, therefore the forecast used a September peak.

A year to year variance of the coincident September peak was assessed to determine outlier years. 2016 data showed almost a 10% variance in coincident peak demand from that of 2015.

Weather data from the Shulz-Sonoma County Airport (Santa Rosa, CA) KSTS weather station was assessed to determine a weather normalization for the forecast. 2016 data was determined to be more consistent with the normal high temperature for September, therefore

2016 data was used as the basis for the peak forecast. Peak forecast for each year beyond 2018 was forecast as proportional to the retail annual electricity forecast.

Customer Counts

The customer counts were forecasted utilizing the same methodology as described above for the annual retail electricity sales forecast:

> *2. Historical opt-out and participation rates combined with U.S. Census Bureau historical population increases for Sonoma and Mendocino counties were used to forecast the number of customer meters for each load class.*
>> a. *Historical "Item 16" data was used for the starting point of eligible Mendocino customers.*

The customer counts listed are the average throughout the year. Opt-outs and phasing in of customers varies the total customer count throughout the year. In June 2015, 3 new jurisdictions were added to SCP's service. The range of customer accounts in 2015 was from 155,008 at the minimum for the year to 197,233 for the maximum. In June 2017, Mendocino County will be added to SCP's service. The range of customer accounts for 2017 is forecast to be from 195,765 at the minimum for the year to 231,327 for the maximum.