

VALLEY CLEAN ENERGY ALLIANCE

Staff Report Item - 14

TO: Valley Clean Energy Alliance Board of Directors

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SUBJECT: VCEA Load Forecast and Power Procurement Process Overview

DATE: November 16, 2017

RECOMMENDATION

Receive updated VCEA Load Forecast and Power Procurement Process Overview and provide feedback/ direction as desired.

SUMMARY

The purpose of this staff report/agenda item is present VCEA's updated load forecast and to provide an overview of the planned power supply procurement process.

The VCEA Community Advisory Committee received the information included in this staff report at their November 6, 2017 meeting.

Note: Staff will be providing a presentation at the Board meeting covering the information included in this staff report.

1. Load Forecast

Background

Previously, VCEA load forecasts have been estimates based upon generalized PG&E load profile information or comparable loads based upon SMUD's load profiles. With recent data transfers, SMUD has had a chance to build up a load forecast using actual PG&E customer metering data, which is fairly granular because most PG&E customers have smart meters, allowing for either 15-minute or hourly readings.

Purpose

The primary purpose of the load forecast is to be able to provide accurate revenue forecasts, and in turn to guide the power procurement for VCEA.

Data Used

The data used to develop the forecast is load and customer count data from PG&E for January 2014 to August 2017. Additionally, SMUD was able to procure a good weather record from the UC Davis Experimental Farm weather station, a NOAA weather station, for the years January

1998 through August 2017. Finally, economic data and forecasts for Yolo County were obtained from SACOG Growth forecasts (2016 Estimates).

Methodology

Historical loads and customer counts were normalized for weather, population, and economic activity data to create a base case. Forecasts were then made of the load per customer and customer counts assuming average weather conditions (conditions we would expect to see every one out of two years). We also forecast peak loads for extreme temperature (a peak high temperature we would expect to see one in every 10 years).

Customer Accounts

Table 1 shows the potential VCEA customer base, by Customer Class. E20S and E20P are the industrial sized customers, with peak demand over 1MW. Standby customers are typically customers with on-site generation, who may be served power by the grid as a backup:

Table 1. VCEA Customer Base (assuming no opt-outs)

2016 Billing Statistics for PG&E Customer Accounts (at Meter) for Yolo County				
Full Service	Davis	Woodland	Unincorporated	Total
Residential	26,871	20,640	8,863	56,374
Small Commercial	1,794	2,068	1,355	5,217
Medium Commercial	182	211	73	466
Large Commercial	93	100	58	251
E20S	-	2	5	7
E20P	-	1	1	2
Agricultural	3	28	2,201	2,232
Street	140	223	322	685
Standby	-	1	5	6
Total	29,083	23,274	12,883	65,240

SACOG Data

The February 2017 SACOG data used is summarized in Table 2.

Table 2. Population, Housing and Employment

	Population	Housing Units	Employment
2012	134,875	52,309	42,874
2020	143,964	53,675	48,945
2036	160,348	59,200	61,990
Growth Rates 2012-2020	0.8%	0.3%	1.7%
Growth Rates 2020-2036	0.7%	0.6%	1.5%

Growth Rates by Customer Class

Table 3 shows the growth rates that were applied to each customer class to forecast the load.

Table 3. Population, Housing and Employment

Class	Annual Growth Rate	Comments
Residential	0.6%	Based on SACOG Population and Housing Unit Growth
Small Commercial	0.3%	Based on SACOG Employment Growth
Medium Commercial	0.3%	Based on SACOG Employment Growth
Large Commercial	0.4%	Based on historical Growth
E20S	0.0%	No Growth Assumed
E20P	0.0%	No Growth Assumed
Agricultural	0.0%	No Growth Assumed
Street	0.0%	Based on historical Growth
Standby	0.0%	No Growth Assumed
Total VCEA	0.5%	

Historical Temperature Data

The charts below show the historical temperature data used to weather normalize loads and forecast expected loads into the future.

Chart 1. Average Daily Temperature by Month

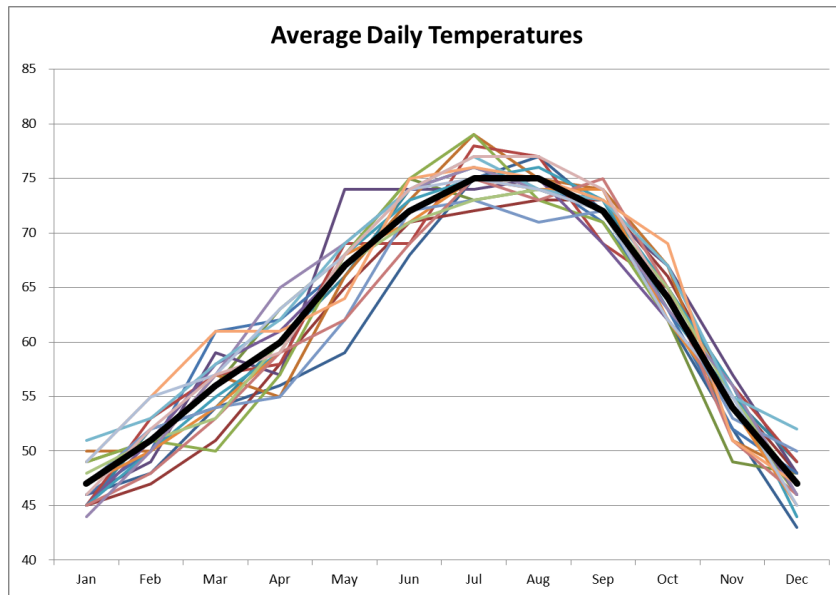
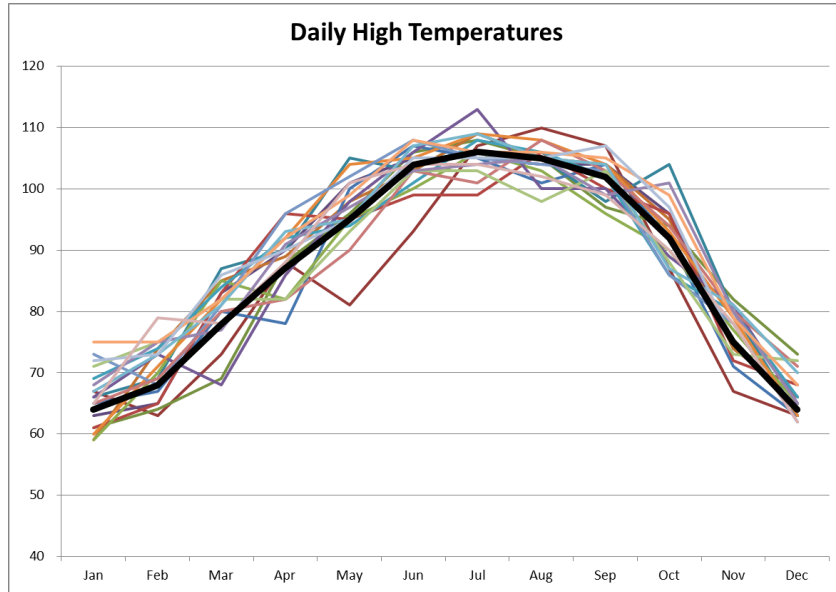


Chart 2. Monthly High Temperature History



Load Forecast

Chart 3 shows the energy load forecast, assuming no opt-outs for 2019 (the first full year of VCEA operation), at 100% of load would be 840,448 MWh. This will be discounted by the opt-out rate assumed for financial modeling and resource procurement. Note: the grey shading is currently available data.

Chart 3. Energy Forecast

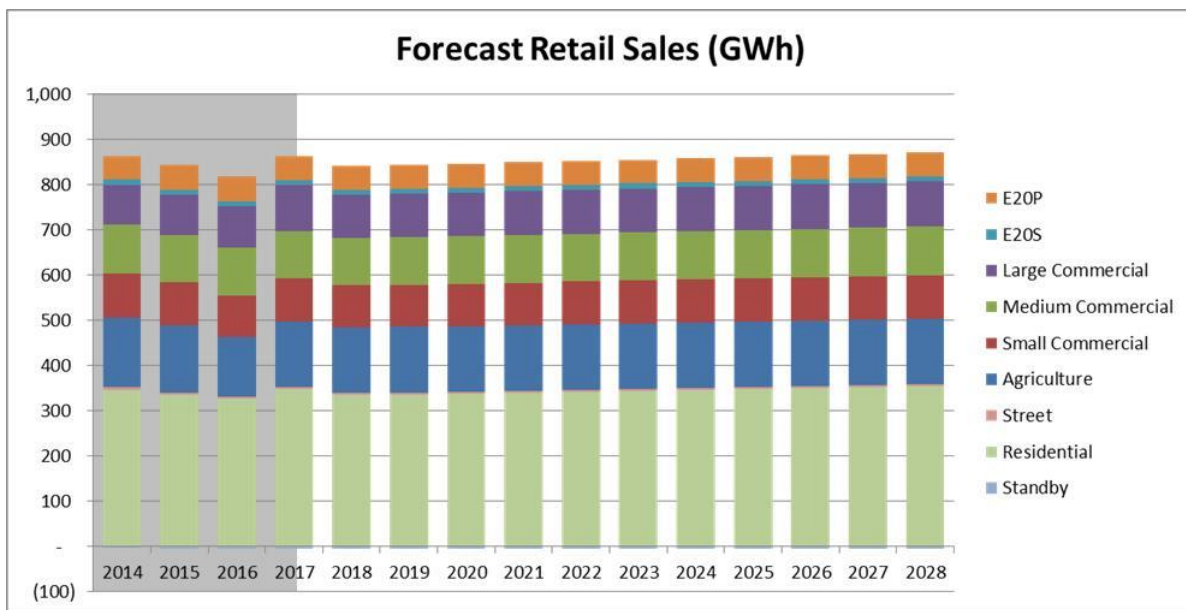


Table 4 shows the peak load forecast, assuming no opt-outs.

Table 4. Peak Load Forecast

Year	Expected Peak (kW)	Extreme Temperature Peak (1 in 10), kW
2015	229,247	257,052
2016	227,888	258,817
2017	244,016	260,286
2018	237,807	261,309
2019	238,410	262,174
2020	238,569	263,366
2021	240,000	264,824
2022	240,891	266,291
2023	241,770	267,790
2024	241,974	269,274
2025	243,398	270,770
2026	244,252	272,269
2027	245,119	273,781

2. Procurement Process

Background

The procurement process is the fundamental process to accomplish building VCEA’s energy supply portfolio.

Timeline

There are several key milestones that occur prior to conducting the procurement:

Date	Milestone
December 2017	<u>Board Action:</u> Finalize preferred portfolio mix/plan and requirements
January 2018	<u>Board Action:</u> Approve and delegate authority to trade for portfolio products
January 2018	Implementation Plan Certification by CPUC
January – April 2018	Procurement window

Products Procured

The primary energy products that will be procured for VCEA are:

- *Power to serve VCEA customers*
 - Renewable – Product Content Category 1, Product Content Category 2
 - Clean – Specified Source power from Asset Controlled Suppliers
- *Resource Adequacy Capacity to ensure adequate power is available to serve the VCEA load*
 - System
 - Local Area
 - Flexible
- *Price Hedging Products to address market risk*

- Fixed Price Market Power
- Financial Swaps

Procurement Methods

Based on VCEA preferred portfolio mix/plan and requirements, SMUD will utilize various methods to procure the products depending on the product or supplier preferences:

- *Direct Solicitation to Counterparties for Bilateral Agreements*
- *Electronic Platforms (e.g. Inter Continental Exchange)*
- *Auction Platform (EnerNoc)*
- *Brokers*
- *Respond to Solicitations From Other Counterparties for Bilateral Agreements*