

# VALLEY CLEAN ENERGY ALLIANCE

## Staff Report – Item 12

---

**TO:** Valley Clean Energy Alliance Board

**FROM:** Mitch Sears, Interim General Manager  
Gary Lawson, Sacramento Municipal Utility District (SMUD)

**SUBJECT:** Procurement Guide and Delegations for 2018 and 2019 Power Procurement

**DATE:** January 18, 2018

---

### RECOMMENDATION

Staff recommends the Board adopt a resolution that:

1. Approves the Procurement Guide, a redacted version of which is attached.
2. Approves a specific delegation to SMUD for procuring VCEA's power portfolio for 2018 and 2019.

### BACKGROUND AND ANALYSIS

Once the CPUC certifies VCEA's implementation plan, and immediately upon VCEA's execution of the Service Agreement with PG&E and filing of the requisite \$100,000 security with the CPUC, SMUD will begin procuring VCEA's portfolio to meet VCEA's goals of serving its Yolo county communities with renewable and clean energy starting June 1. We expect those procurements to begin at the end of January. This Procurement Guide lays the framework for how SMUD, as VCEA's Wholesale Energy Services Provider, will go about these power procurements.

#### Procurement Guide

The Procurement Guide addresses each of the energy products that VCEA will need in its portfolio to meet its renewable and clean energy targets, as well for supplying the price hedging products necessary to fix VCEA's energy cost on a forward basis. The products discussed are:

##### *Renewables*

The renewable energy supply will form the foundation of VCEA's clean portfolio to achieve the 42% target renewable content established by the Board. Renewables will be procured in volumes sufficient to cover VCEA's default power product (Light Green) as well as its opt-up, 100% renewable product (Ultra Green).

### *Non-RPS Carbon Free*

The non-RPS carbon free power makes up the balance of VCEA's targeted 75% clean portfolio.

### *Resource Adequacy*

Resource adequacy is the generating capacity that VCEA is obligated by law to provide to support system reliability, and is based upon the monthly peak capacity of VCEA's loads plus a 15% reserve margin.

### *CAISO Market Power*

As a Load Serving Entity within the CAISO market, VCEA's daily power needs will be supplied directly from the CAISO market. SMUD will purchase market power on a Day-Ahead basis for VCEA, based upon daily forecasts of VCEA's hourly loads.

### *Price and Locational Hedging Products*

The pricing of the market power purchased from the CAISO is not known in advance. In order to fix its energy costs in advance, VCEA must find supplier that will sell it market power at contractually fixed prices. Alternatively, VCEA must find an entity that is willing to financially fix the cost of market power. Congestion Revenue Rights (CRRs) that will be allocated to VCEA as part of the Load Serving Entity allocation will be used to hedge some of the locational price risk.

### *Carbon Allowances*

VCEA may need to import clean power from an out-of-state entity that has large hydro in its power portfolio. Such a supplier (known as an asset controlling supplier) may have small amounts of carbon emitting resources in its portfolio. In order to offset that small carbon component, VCEA will need to procure carbon Allowances.

## **Specific Delegation**

The specific delegation authorizes SMUD to procure all of the forward products for VCEA's power portfolio for 2018 and to begin procurement of the forward products for VCEA's 2019 power portfolio. Additionally the delegation limits the procurement authority such that the expected power budgets for 2018 and 2019 won't be exceeded by more than 5%. The power budget values used for the delegation are those included in the financial model used to set the renewable and clean power targets and the targeted rate discount at the December, 2017 Board meeting. The expected power costs for calendar year 2018 are \$28.45 million, and for calendar year 2019 are \$41.84 million.

Staff also recommends the a 5% margin be added to the delegation in the event that procurement costs come in higher such that the total forecast power budget would be expected to be higher than in the financial model. VCEA's financials can cover a total power budget that exceeds estimates by up to 5%. This added margin also will facilitate the procurement process, given the short time frame in which to procure the 2018 power. Additionally, VCEA staff and/or EROC (to the extent it is functioning) will be reviewing responses to solicitations with SMUD as to their impact on the power budget. In the event that procurements are coming in at a higher cost than expected and that the total power budget may exceed the stated amounts, VCEA staff would need to come back to the Board for additional delegated authority.

**Future Delegations**

In March, the Board will be finalizing its budget and finalizing rates for 2018. Staff will have additional recommendations at that time for delegations needed for conducting day-to-day trading and scheduling activities for VCEA upon launch.

**REQUESTED ACTION**

Adopt a resolution that approves the Procurement Guide, a redacted version of which is in Attachment A, and approve the specific procurement delegation in Attachment B.

**ATTACHMENT A**

**Valley Clean Energy Procurement Guide**



# **Valley Clean Energy Alliance Procurement Guide**

DRAFT 1/10/2018

Adopted January 18, 2017

Table of Contents

---

Table of Contents.....i

1 Purpose and Scope..... 1

2 Principles Guiding Portfolio Development..... 2

3 Channels for Procurement..... 3

4 Regulatory Requirements..... 4

    4.1 Resource Adequacy..... 4

    4.2 Renewables Portfolio Standards ..... 4

5 Steps to Procurement..... 6

6 Portfolio Composition ..... 7

    6.1 Renewables..... 7

    6.2 Non-RPS Carbon Free..... 8

    6.3 Resource Adequacy..... 8

    6.4 CAISO Market Power..... 9

    6.5 Hedging Products ..... 9

    6.6 Carbon Allowances .....11

7 Procurement Approach and Hedging Strategy .....12

    7.1 Load Assumed for Procurements.....12

    7.2 Volumetric Risk.....12

    7.3 Market Price Risk.....14

    7.4 Locational Price Risk .....15

    7.5 Procurement Timing for Hedging .....16

Appendix A Initial Load Forecast..... A1

Appendix B Definitions ..... B1

## 1 Purpose and Scope

---

The intent of the VCEA Procurement Guide is to provide a roadmap of how the power portfolio for VCEA will be procured in the short run. This is not a resource plan, insofar as a resource plan deals with issues such as the long term resource goals of a CCA. Ultimately long term resource goals will end up in procurement actions. Because no specific long term goals have been established, no specific goals are included in this Procurement Guide. This guide covers:

- Principles Guiding Portfolio Development
- Channels for Procurement
- Regulatory Requirements
- Steps to Procurement
- Portfolio Composition
- Procurement Approach and Hedging Strategy

## 2 Principles Guiding Portfolio Development

---

The portfolio developed for VCEA will be guided by the following principles. The portfolio will:

- Meet standards defined by the CAISO's Reliability Requirements Business Practice Manual
- Satisfy CPUC Resource Adequacy requirements
- Comply with annual RPS content standards
- Consist of the product mix from renewables and non-RPS clean energy as directed by VCEA
- Target the level of hedging as directed by VCEA
- Adhere to risk mitigating directives and delegations of VCEA's Enterprise Risk Oversight Committee (EROC)
- Adhere to applicable Federal, regional, and local requirements.



### 3 Channels for Procurement

---

SMUD will access power markets and to transact on behalf of VCEA using the following types of marketing channels:

- Direct Solicitation - SMUD will use its existing relationships to seek suitable bilateral agreements with counterparties directly
- Electronic Exchange Platforms - SMUD will use its access to platforms such as ICE(Intercontinental Exchange) to research markets and transact
- Electronic Auction Platforms - SMUD will use its access to platforms such as EnerNoc to create and enter auctions for desired products
- Brokers - SMUD will use its existing agreements with brokers to help locate trade partners for desired products

Considerations for the channel(s) used include:

- Type of product
- Market liquidity
- Credit Quality and Availability
- Timing
- Cost/fees
- Existing Counterparties and Transactions
- Resource and Counterparty diversity
- Market Conditions

## 4 Regulatory Requirements

---

### 4.1 Resource Adequacy

As a Load Serving Entity (LSE), VCEA is subject to the Resource Adequacy (RA) program imposed by the CPUC and adopted by the CAISO. The RA program is designed to ensure sufficient resources to operate the grid reliably. An LSE is required to demonstrate on an annual and monthly basis that it has procured enough capacity to support 115% of its peak loads from physical resources not already committed elsewhere. The required amounts are determined by the CPUC based on forecast load.

#### ***Total RA Requirements***

The total RA requirement of an LSE is determined based on a CEC adjusted forecast plus a 15% planning reserve margin. The CPUC makes a determination of how to allocate that requirement to all LSEs. LSEs must procure and provide their total RA requirement using Local Capacity and System Capacity. Additionally, some of the RA capacity must have flexible ramping capabilities to meet the need of the CAISO to follow rapid changes in load. These types of RA resources are discussed below.

#### ***Local RA Resources***

Local RA capacity is provided from generating resources located in areas where there are transmission constraints impacting the ability to serve load. The requirement for Local RA Resources is determined by the CAISO based on an annual study using a 1-10 weather year and an N-1-1 contingency impacting those constrained areas. The responsibility for providing RA from Local Capacity is prorated out to LSEs based upon their load.

#### ***System RA Resources***

The balance of the total RA Requirement can be supplied from qualifying generating resources that are not in areas with local capacity constraints.

#### ***Flexible RA Requirements***

Flexible RA Requirements are based on an annual CAISO study that assesses at the largest three hour ramp for each month needed to run the system reliably. Flexible capacity can be provided from either Local or System RA resources.

### 4.2 Renewables Portfolio Standards

The portfolio must meet the RPS requirements set by the CPUC. The percentage of the portfolio that must be supplied by RPS-eligible sources each year is detailed below. Compliance will be

determined by the renewable energy credits (RECs) retired within the multi-year compliance periods.

**Table 4.1. Annual RPS Minimum Requirements**

Compliance Period	Year	RPS Percentage
3	2018	29.0%
	2019	31.0%
	2020	33.0%
4	2021	34.8%
	2022	36.5%
	2023	38.3%
	2024	40.0%
5	2025	41.7%
	2026	43.3%
	2027	45.0%
6	2028	46.7%
	2029	48.3%
	2030	50.0%

The California Energy Commission (CEC) certifies the RPS-eligibility of renewable resources. The Western Renewable Energy Generation Information System (WREGIS) assigns Renewable Energy Certificates (RECs) and tracks REC ownership used as evidence for compliance with renewable portfolio requirements. The CPUC enforces the RPS for LSE’s under its jurisdiction.

There are three Portfolio Content Categories of renewable resources under RPS, determined by how the REC and associated energy are delivered to California for use by LSEs in California. Table 4.2 below shows the categories and their definition.

**Table 4.2. RPS Product Content Categories**

Portfolio Content Category	Definition
PCC 1	Bundled energy and REC delivered to the California power grid without substituting electricity from another source. Renewables generated inside CA are by default PCC 1, but out-of-state generators must meet certain scheduling guidelines. The minimum amount of procurement allowed from PCC1 for compliance period 3 (2017-2020) is 75%.
PCC 2	Bundled energy and REC where the energy can be substituted with non-renewable sources imported into the state. An out-of-state wind resource where the shortfall in energy is firmed up by another resource falls into this category.
PCC 3	Unbundled REC with no obligation for physical delivery of energy. The maximum amount of procurement allowed from PCC3 for compliance period 3 is 10%.

## 5 Steps to Procurement

---

Develop load forecast for relevant market/operating period

Estimate initial Resource Adequacy and RPS requirements necessary to satisfy regulatory requirements

Receive input from VCEA regarding preferred portfolio mix of renewables, clean energy and other resources

Perform market reconnaissance to estimate current prices and provide VCEA feedback on cost estimates for targeted portfolio mix

Based upon market survey and VCEA input, prepare for solicitation

Obtain authorization and delegation to transact

Obtain CPUC RA determination

Go to market and execute transactions. If market conditions or regulatory requirements change significantly, provide feedback to VCEA and adjust course as directed.

Report results of procurement process

Manage daily operations of portfolio management

Monitor portfolio/counterparty credit and limits/market exposure

## 6 Portfolio Composition

### 6.1 Renewables

The renewable content established by VCEA's Board for its 2018 portfolio is 42%, with the breakout between the RPS minimum requirements and the additional discretionary renewable content shown in in Table 6.1 below. The table shows the 42% renewable content target carried forward in time, although the Board has made no specific determination of portfolio content beyond the end of 2018.

**Table 6.1 VCEA Renewable and Clean Energy Portfolio Content**

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>Total Renewable Content</b>	<b>42.0%</b>	<b>42.0%</b>	<b>42.0%</b>	<b>42.0%</b>	<b>42.0%</b>	<b>42.0%</b>	<b>42.0%</b>	<b>42.0%</b>	<b>43.3%</b>	<b>45.0%</b>
PCC 1 - Calculated	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
PCC 2 - Calculated	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
PCC 3 - Calculated	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>RPS Required Minimums</b>	<b>29.0%</b>	<b>31.0%</b>	<b>33.0%</b>	<b>34.8%</b>	<b>36.5%</b>	<b>38.3%</b>	<b>40.0%</b>	<b>41.7%</b>	<b>43.3%</b>	<b>45.0%</b>
PCC 1	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
PCC 2	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
PCC 3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Incremental Discretionary Renewables</b>	<b>13.0%</b>	<b>11.0%</b>	<b>9.0%</b>	<b>7.2%</b>	<b>5.5%</b>	<b>3.7%</b>	<b>2.0%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.0%</b>
PCC 1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PCC 2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
PCC 3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Non Renewable Carbon Free</b>	<b>33.0%</b>	<b>33.0%</b>	<b>33.0%</b>	<b>33.0%</b>	<b>33.0%</b>	<b>33.0%</b>	<b>33.0%</b>	<b>33.0%</b>	<b>31.7%</b>	<b>30.0%</b>
<b>Total Carbon Free</b>	<b>75.0%</b>	<b>75.0%</b>	<b>75.0%</b>	<b>75.0%</b>	<b>75.0%</b>	<b>75.0%</b>	<b>75.0%</b>	<b>75.0%</b>	<b>75.0%</b>	<b>75.0%</b>

However, VCEA's likely long term goal may be to increase the renewables and clean energy content of the portfolio. As such, for procurement and hedging purposes, it will be assumed that VCEA's mix will be at least 42% renewable going forward. The 42% renewable energy component exceeds the 2018 minimum RPS requirement of 29% of Retail Load by 13% of Retail Load.

The renewables component will consist of 75% from PCC 1 and 25% from PCC 2 for the 29% minimum renewable content required for compliance with RPS. The additional 13% discretionary renewable content will be supplied 100% from PCC-2 resources. The amount of PCC-3 renewables targeted for procurement is zero. However, PCC 3 could be utilized to make up for any shortfalls in renewable energy content in a given year stemming from volumetric changes in forecast versus actual load or volumetric changes in delivery of renewables. This could occur if VCEA's load in a given year is greater than forecast. Use of PCC-3 would only be used as insurance that VCEA meets its desired power mix for the year when additional procurement of PCC 1 and 2 products is not feasible. Excess PCC1 and PCC-2 beyond what are needed in any given year, can be rolled over into the following year, as required.

Projected REC requirements for 2018 and 2019 are shown below in Table 6.2, based on initial load forecasts. Note that 2018 load is a partial year load, reflecting VCEA's June 1, 2018 launch.

**Table 6.2. Targeted Total Renewable Energy Volumes for 2018-2019, MWhs**

	2018	2019
	Total	Total
Retail Load	446,476	757,840
RPS % Target	42.0%	42.0%
Total RECs	187,520	318,293
PCC1	97,109	176,198
PCC2	90,411	142,095

## 6.2 Non-RPS Carbon Free

As Table 6.1 shows, the total targeted clean energy component of VCEA's portfolio is 75%. For 2018, this means the remaining 33% of clean energy not supplied from RPS qualifying resources will be sourced from non-RPS qualifying large hydro resources.

Supplies of large hydro will primarily come from the Northwest, from entities that own or have rights to offer the power directly sourced from a specific hydro project or set of hydro projects. Power directly from zero- or low-carbon resources are known as Specified Source supplies. For large hydro Specified Source power, the carbon factor of the power imported will be 0.00 tonnes CO<sub>2</sub>/MWh.

## 6.3 Resource Adequacy

Preliminary estimates for RA requirements have been prepared based on forecast load. These are shown in table 6.3 below.

**Table 6.3. Estimated Resource Adequacy Volumes, MW**

Estimated RA Requirements	2018											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total RA	-	-	-	-	-	200	236	216	182	125	87	92
Greater Bay Area	-	-	-	-	-	0	31	31	31	31	31	31
PG&E Other	-	-	-	-	-	0	48	48	48	48	48	48
System	-	-	-	-	-	200	158	137	103	46	9	14
Flexible	-	-	-	-	-	0	28	27	45	44	48	55

Estimated RA Requirements	2019											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total RA	91	83	82	113	158	229	239	214	180	126	89	93
Greater Bay Area	30	30	30	30	30	30	30	30	30	30	30	30
PG&E Other	47	47	47	47	47	47	47	47	47	47	47	47
System	14	6	4	35	80	151	161	137	103	49	12	16
Flexible	41	48	39	38	35	32	27	26	43	42	46	53

The above RA estimates will be updated when VCEA receives its CPUC RA determination, which will be after VCEA files for this determination in early February, 2018.

## 6.4 CAISO Market Power

Because VCEA customers reside in the CAISO balancing authority, their load will be served physically by CAISO Market Power. VCEA is therefore subject to paying the price at the Load Aggregation Point (LAP) where it is assumed to take power.

Day Ahead traders will analyze and create daily load forecast profiles. Forecasted hourly loads for VCEA will be bid into the CAISO Day Ahead market by 10am the prior day. All awards from the Day Ahead market will carry over to the real time market. Any deviations in VCEA's actual load from what is scheduled in the Day Ahead will pay or be paid at the Real Time market prices.

## 6.5 Hedging Products

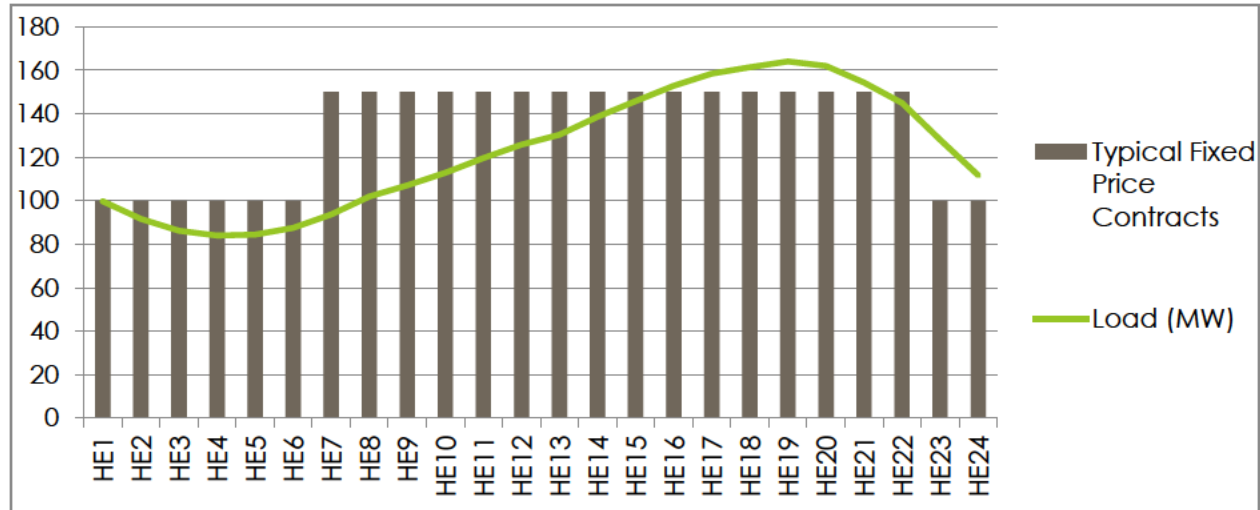
Options to mitigate price risk of the CAISO market include: 1. NP-15 Futures; 2. Fixed price delivery contracts; and, 3. Congestion revenue rights.

### NP-15 Futures (Physical or Financial)

NP-15 futures allow a buyer to fix the price for specified forward periods at set volumes of energy delivery. This hedges against the volatility of Day Ahead clearing prices in the CAISO market but does not protect against congestion and loss charges between the NP15 trading hub and VCEA's LAP. These futures products are traded in standard lots of 25MW for yearly, quarterly, monthly durations, for off and on-peak hours daily. Futures contracts can be procured such that the monthly energy delivered under the contracts gets close to forecast energy load for VCEA during that month, but because of the 25 MW blocks the match won't exactly match in quantity. Additionally, futures are typically at flat quantities across peak and/or non-peak hours, therefore the shape does not perfectly track VCEA's system load shape. This leaves VCEA short in some hours, and long in other hours, even though on a monthly basis the energy volume of the futures contract(s) will be close VCEA's forecast load. Figure 6.5 shows an example of how on a typical day, the standard futures contract could be structured to deliver

nearly the same energy quantity as the forecast load. However, as discussed the 25 MW blocks procured for on peak hours provide more energy in the example day than exactly needed for load. NP-15 futures can either be purely financial, or can involve the physical delivery of power.

**Chart 6.1 Standard Futures Product vs. Load Profile**



**Bilateral Fixed Price Delivery Contracts (Physical or Financial)**

With bilateral fixed priced delivery contracts, a buyer and seller can agree on a fixed price, duration, and point of delivery at any CAISO Aggregated Pricing Node or Physical Generator location. This approach fixes the energy price at the agreed delivery point but does not protect against congestion and losses between delivery point and VCEA's LAP. Fixed price delivery contracts can also be delivered and shaped into schedulable quantities on a daily basis in order to better match hourly fixed price energy delivery to VCEA load. This provides a more “perfect” hedge than flat on peak and off peak financial hedging instruments. Shapeable products have a price premium as compared to non-shapeable products. Bilateral fixed price delivery contracts can either be purely financial, or can involve the physical delivery of power.

**Day Ahead Fixed Price Delivery Contracts (Physical)**

The Futures and Bilateral Contracts are procured on a month-ahead, season-ahead, and/or year(s)-ahead basis, using a long term load forecast of expected loads. When Day-Ahead scheduling is performed, the expected loads for the day being scheduled are much better known. During the Day Ahead trading and scheduling process any short-falls and excesses between VCEA's load and the fixed price hedging volumes for the next day, are resolved by selling energy for any long hours at fixed prices and purchasing energy to cover any short hours at fixed prices, so that 100% of VCEA's is at known prices (100% hedged) going into Real Time.



## Congestion Revenue Rights

Sellers are not likely to enter fixed price contracts for delivery direct to load. Congestion Revenue Rights (CRR's) can be used to hedge against congestion between the point a seller supplies power (a "source" node) and location where the buyer has load (a "sink" node). The CRR owner for those respective source and sink nodes would be entitled to the congestion charges between the source and sink, as calculated by the CAISO. This would, in effect, offset the congestion charges incurred by the difference in price the buyer receives at source node and price paid at the sink node. Holders of CRR's can also be obligated to incur charges if the congestion is in the opposite direction to the power flow they are intended to hedge against.

CRR's are made available to LSEs in two ways: 1. LSE allocation; and, 2. CRR auction process conducted by the CAISO.

CRRs are limited in that they are designed to cover energy flows that are blocked into on-peak and off-peak periods; they are not shapeable.

## 6.6 Carbon Allowances

For large hydro power imported from the Northwest from Specified Sources, there should not be any associated carbon emissions, therefore it is not anticipated that carbon allowances will need to be procured. In the event that VCEA does incur a Cap and Trade compliance obligation for power imports, the Allowances will not be procured on a forward basis for the imported ACS power, but will be procured by SMUD on behalf of VCEA at quarterly California Air Resource Board auctions.

## 7 Procurement Approach and Hedging Strategy

---

### 7.1 Load Assumed for Procurements

#### Retail Load

The initial load forecast for VCEA is shown in Attachment A. If all eligible PG&E customers were to join the VCEA program, the forecast of retail energy and capacity loads would be as shown in the two columns with the heading “Retail Load w/No Opt Outs.” However, the underlying assumption in the financial modeling and initial procurements is that 10% of potential VCEA customers choose to opt out of participation in the VCEA program. The resulting forecast of retail energy and capacity loads that will be procured for VCEA are shown in the two columns with the heading “Retail Load 10% Opt Outs.”

Renewable and clean energy resources will be procured as a percentage of retail load, assuming 10% opt-outs.

#### System Load

System Load is the wholesale load of VCEA. The System Load is the Retail Load factored up for Distribution Losses. The System Load forecast of energy and capacity for VCEA is shown in the columns of Appendix A with the heading, “System Load.”

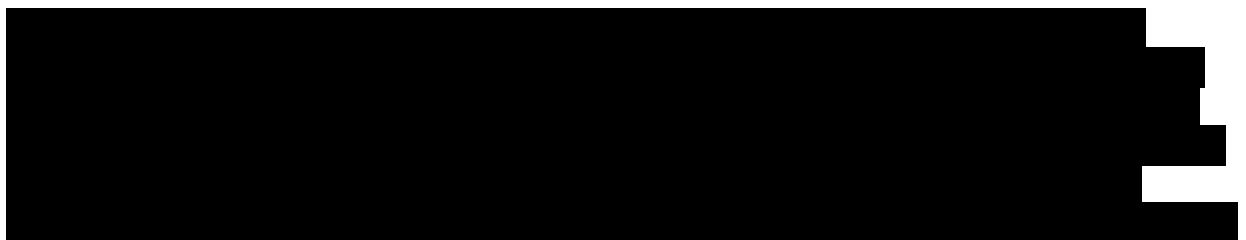
Procurement of RA and price hedging will be done on the forecast of system load also assuming 10% opt-outs.

#### Post Launch

After launch, the amount of customers opting out will be better known. In July, 2018, an assessment of the actual opt outs will be performed and the load forecast will be adjusted accordingly. Any material short positions for 2018 supply will be covered with additional purchases of products in August pursuant to recommendations from SMUD and authorization from VCEA’s Board and VCEA’s EROC.

**THE FOLLOWING SECTIONS CONTAIN COMMERCIALY SENSITIVE INFORMATION - INFORMATION REDACTED**

### 7.2 Volumetric Risk RA, Renewables, Non-RPS Clean Energy



[Redacted]

Hedging Products

[Redacted]

Carbon Allowances and PCC-3 RECs

[Redacted]

Renewables

[Redacted]

[Redacted]

Non RPS Carbon Free

[Redacted]

Resource Adequacy

[Redacted]

[Redacted]

[Redacted]

7.3 Market Price Risk

[Redacted]

Fixed Price Market Power

[Redacted]

[Redacted]

**Chart 7.1. Base Load and Variable Load Components of VCEA's Load**

#### 7.4 Locational Price Risk

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted]

### 7.5 Procurement Timing for Hedging

[Redacted]

Procurement Milestone Date	Products Procured, by Period
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]



Appendix A Initial Load Forecast

Month	Retail Load w/No Opt Outs		Retail Load 10% Opt Outs		System Load		
	Energy, MWhs	Peak, MW	Energy, MWhs	Peak, MW	Energy, MWhs	Peak, MW	Min, MW
June, 2018	47,056	209	42,351	188	40,822	197	3
July, 2018	97,239	238	87,515	214	91,777	225	67
August, 2018	91,432	219	82,288	197	86,296	206	68
September, 2018	75,290	194	67,761	174	71,061	183	59
October, 2018	64,363	140	57,927	126	60,748	132	54
November, 2018	58,852	105	52,967	94	55,547	99	52
December, 2018	61,853	110	55,668	99	58,379	104	53
January, 2019	61,992	108	55,793	97	58,510	102	53
February, 2019	53,515	102	48,163	92	50,509	96	53
March, 2019	57,570	97	51,813	88	54,336	92	48
April, 2019	59,272	127	53,344	114	55,942	120	48
May, 2019	72,854	166	65,569	150	68,762	157	57
June, 2019	86,449	233	77,804	210	81,594	220	70
July, 2019	97,802	239	88,022	215	92,309	225	69
August, 2019	91,390	216	82,251	194	86,257	204	68
September, 2019	75,678	190	68,110	171	71,427	180	60
October, 2019	64,547	139	58,092	126	60,921	132	55
November, 2019	58,756	105	52,880	95	55,455	99	52
December, 2019	62,219	109	55,997	98	58,724	103	54
January, 2020	61,917	109	55,726	98	58,440	103	53
February, 2020	55,278	103	49,750	92	52,173	97	54
March, 2020	57,731	99	51,958	89	54,489	93	47
April, 2020	59,409	126	53,469	113	56,072	119	50
May, 2020	72,570	160	65,313	144	68,494	151	58
June, 2020	87,377	232	78,639	209	82,469	219	67
July, 2020	98,096	239	88,287	215	92,586	226	71
August, 2020	91,042	217	81,938	195	85,928	204	68
September, 2020	75,645	191	68,081	172	71,396	181	61
October, 2020	64,003	139	57,603	125	60,408	131	55
November, 2020	58,834	105	52,951	94	55,529	99	52
December, 2020	62,724	109	56,451	98	59,201	103	56

Year	Retail Load w/No Opt Outs		Retail Load 10% Opt Outs		System Load		
	Energy, MWhs	Peak, MW	Energy, MWhs	Peak, MW	Energy, MWhs	Peak, MW	Min, MW
2018	496,085	238	446,476	214	464,630	225	52
2019	842,044	239	757,840	215	794,746	225	48
2020	844,628	239	760,165	215	797,185	226	47



## Appendix B Definitions

---

### ***Commodity Price/Market Price***

The price at which electricity, gas, capacity, and renewable attributes are bought and sold.

### ***Congestion Revenue Right***

Congestion Revenue Rights (CRR) are financial instruments used in the Day Ahead market to hedge the difference in price between two locations caused by congestion.

### ***Counterparty***

An entity to which an exposure to financial risk might exist.

### ***Customer Load***

A single customer's power usage that receives power from the electric system.

### ***Day-Ahead***

Refers to the day before actual power flow begins. For example, in the CAISO, the Day-Ahead market for Tuesday's flow date closes on Monday at 10am.

### ***Energy Products***

Means all commodities and commodity related products, both physical delivery and financial instruments, related to meeting the wholesale energy, regulatory, hedging, and or risk management needs of VCEA. The types of products include, but are not limited to: Energy; Capacity; Resource Adequacy; Local Capacity; System Capacity; Ancillary Services; Environmental Attributes (including but not limited to RECs, Carbon Allowances, and other required environmental attributes); Forwards; Futures; Swaps; Options; Congestion Revenue Rights; and other energy and commodity related products as needed.

### ***Enterprise Risk Oversight Committee (EROC)***

This is the committee, established in accordance with the VCEA Board Wholesale Energy Risk Management Policy Manual, initially adopted December 14, 2017, as it may be revised.

### ***Financial Product***

A contract in which the value is derived from an underlying physical commodity but which does not require physical delivery or receipt of the commodity.

***Load Aggregation Point (LAP)***

A Load Aggregation Point is a set pricing nodes used in the CAISO market for the submission of demand bids and for settlement of demand. The purpose of a LAP is to collapse into a single pricing node, the various locations of a load serving entities load that are distributed throughout the system.

***Long Position***

A long position means there is not an open or short position, and that excess supply exists. In addition, as load forecasts are updated, if an excess exists, that excess is also considered a long position. For the renewable power purchase example (see *Open Position*), if 60,000 MWhs has been procured for a 50,000 MWh need, a long position of 10,000 MWhs will exist.

***Open Position***

For any given timeframe, any commodity requirement that is unfilled is considered to be an open position. For instance, if there is a requirement to procure 50,000 MWhs of renewable power in a calendar year, until 50,000MWhs of renewable power purchases have been secured, there will be an open position equal to the remaining MWh value needed to reach 50,000 MWhs.

***Physical Product***

A contract which requires the seller to physically deliver, and the buyer to physically receive a given commodity.

***Price Risk (or Market Price Risk)***

Price Risk is the risk that prices for power are different than have been assumed for financial planning and budgeting. Price risk is hedged by procuring fixed-price forward contracts for power.

***Portfolio***

The aggregation of commodity related products (both physical and financial) procured to serve load and meet other policy goals.

***Portfolio Manager***

A core service provided by the WESP which broadly encompasses the responsibility for managing the purchase and sale of energy commodity related products in the commodity portfolio in an effort to serve load and meet other policy goals.

***Real-Time***

Refers to the actual day in which power flows. In the CAISO, the Real-time market opens at 1pm the day before flow date and closes for each hour 75 minutes prior to the start of scheduled flow.

***Renewable Energy Certificate (REC)***

A REC is evidence of the production equal to one megawatt-hour of generation from a certified renewable energy resource.

***Retail Load***

The summation of all customers' loads that receive power from the electric system.

***Short Position***

A short position is an open position. The volumetric value of a short position is determined by the shortfall in volume compared to the requirement. For the renewable power purchase example, if 30,000 MWhs of the 50,000 MWh requirement has been procured, a short position of 20,000 MWhs remains.

***Specified Source***

A Specified Source is an out-of-state generator that meets the requirements of the California Air Resources Board such that the carbon intensity of that resource's emissions (typically zero, or lower than that of unspecified imports) can be declared by the California entity importing the power.

***System Load***

The summation of all customers' loads that receive power from the electric system. System Load includes applicable transmission and/or distribution losses.

***Volumetric Risk***

The effect of fluctuations in demand for load or for production of generation from a generator.

***Western Renewable Energy Generation Information System (WREGIS)***

The Western Renewable Energy Generation Information System (WREGIS) is an independent, renewable energy tracking system for the region covered by the Western Electricity Coordinating Council (WECC)

**Attachment B**  
**Procurement Delegation**

SMUD is authorized to procure all forward products needed for VCEA’s 2018 power portfolio, and to begin procurement of the forward products for VCEA’s 2019 power portfolio. Forward products specifically include, renewable power, non-RPS clean power, resource adequacy, and fixed price market power. Procurements will be conducted in accordance with the guidelines in the Procurement Guide and within the following parameters:

<b>Power Budget Element</b>	<b>Parameter</b>
Total net power budget, Calendar Year (CY) 2018	Delegation to procure all forward products for 2018, such that the costs of the forward purchases don’t cause the total expected CY 2018 power costs to exceed \$29.87 million (\$28.45 million expected power budget, plus 5%).
Total net power budget, CY 2019	Delegation to begin procurement of forward products for 2019, such that the costs of the forward purchases don’t cause the total expected CY 2019 power costs to exceed \$43.93 (\$41.84 million expected power budget plus 5%).

In the event that power portfolio purchases are coming in above budget, and it appears that the total net power budget may exceed the specified amounts, VCEA staff will need to come back to the Board for additional authority to proceed.

VALLEY CLEAN ENERGY ALLIANCE

RESOLUTION NO. 2018- \_\_\_\_\_

A RESOLUTION OF THE VALLEY CLEAN ENERGY ALLIANCE ADOPTING  
A PROCUREMENT GUIDE AND DELEGATING PROCUREMENT AUTHORITY TO VCEA STAFF  
AND SMUD FOR ENERGY PROCUREMENT FOR CALENDAR YEARS 2018 AND 2019

WHEREAS, the Valley Clean Energy Alliance (“VCEA”) is a joint powers agency established under the Joint Exercise of Powers Act of the State of California (Government Code Section 6500 et seq.) (“Act”), and pursuant to a Joint Exercise of Powers Agreement Relating to and Creating the Valley Clean Energy Alliance between the County of Yolo (“County”), the City of Davis (“Davis”), and the City of Woodland (“City”) (the “JPA Agreement”), to collectively study, promote, develop, conduct, operate, and manage energy programs; and

WHEREAS, in order to achieve its strategic goals, VCEA has established procurement policies and goals; and

WHEREAS, the Procurement Guide provides the roadmap for implementing the procurement policy; and

WHEREAS, delegation by the Board to VCEA Staff and SMUD to procure power for calendar years 2018 and 2019, consistent with the procurement policy and guide, will allow VCEA to serve customers at launch and into the first phase of program operation.

NOW, THEREFORE, the Board of Directors of the Valley Clean Energy Alliance hereby adopts the VCEA Procurement Guide (Exhibit A), and delegates procurement authority to VCEA Staff and SMUD, in the amounts of \$28.45 million dollars for calendar year 2018 (7 months operation) and \$41.84 million dollars for calendar year 2018 (12 months operation), in a manner consistent with VCEA procurement policies and the VCEA Procurement Guide.

ADOPTED, this \_\_\_\_\_ day of \_\_\_\_\_, 2018, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

\_\_\_\_\_  
Chair

\_\_\_\_\_  
Secretary

Approved as to form:

---

Interim VCEA Counsel

EXHIBIT A - Customer and Data Policies

EXHIBIT A

VCEA Procurement Guide