

VALLEY CLEAN ENERGY ALLIANCE

Staff Report – Item 12 *Confidential & Proprietary*

TO: Valley Clean Energy Alliance Board

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

SUBJECT: 2020 Procurement Plan, Including Directives and Delegations for 2020 Power Procurement Activities

DATE: December 12, 2019

RECOMMENDATION

Staff recommends the Board adopt a resolution that:

1. Approves the 2020 Procurement Plan contained in this staff report.
2. Approves specific Directives and Delegations to SMUD for procuring all of VCE's power portfolio for calendar year 2021, and portions of the power portfolio for 2022 and 2023, which are in Table 6 below.
3. Approves continuing the targeted portfolio mix of 42% renewable and 33% clean large hydro into 2020.
4. Approves maintaining a minimum 42% renewable target for 2021, the first year in which VCE expects significant deliveries from long-term renewable contracts, and approves continuing a 33% clean large hydro content in 2021.

PURPOSE AND SCOPE

On January 23, 2019, the Board approved VCE's updated Procurement Guide which established the procurement plan for the 2020 power portfolio, along with the delegations to SMUD necessary to execute on that plan. To date, the 2020 forward power procurements are complete.

Based on VCE's power procurement schedule, it is time to procure the balance of the short term power products for the 2021 VCE power portfolio and to procure portions of the 2022 and 2023 portfolio. To that end, staff has updated the Procurement Plan, now contained herein, and developed an updated delegation matrix.

The intent of this Valley Clean Energy ("VCE") Procurement Guide is to provide a roadmap of

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how the power portfolio for VCE 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 VCE. Ultimately long-term resource goals will end up in procurement actions. The current goals of getting renewable resources under long-term power purchase agreements are included in the procurement directives/delegation Table 6. This plan covers:

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

PRINCIPLES GUIDING PORTFOLIO DEVELOPMENT

The portfolio developed for VCE 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
- Identify the power portfolio product mix of renewables and non-RPS clean energy as directed by VCE policy
- Target the level of hedging as directed by VCE
- Adhere to risk mitigation directives and delegations of VCE's Enterprise Risk Oversight Committee (EROC)
- Adhere to applicable Federal, regional, and local requirements.

CHANNELS FOR PROCUREMENT

SMUD will access power markets and transact on behalf of VCE 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
- Email solicitations – SMUD will issue solicitations using its email list of power suppliers to obtain bid responses 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

REGULATORY REQUIREMENTS

Resource Adequacy

As a Load Serving Entity (LSE), VCE 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 a multi-year 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 VCE's 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. 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 assuming extreme weather (a 1-10 weather year) and critical grid component outages (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, irrespective of where the load is located. The CPUC recently put in place the requirement that local procurement occur in each of 7 defined zones within PG&E's service area (up from 2 aggregated zones). Additionally the CPUC added multi-year

requirements for local procurement. In this coming year, LSEs must demonstrate they have procured 100% of 2021 and 2022, and 50% of 2023 local RA requirements.

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. The CPUC recently opened up the ability to secure system resources from both northern California and southern California. Additionally, on 11/7/19, the CPUC issued a decision in its IRP proceeding regarding additional Electric System Reliability Procurement that requires additional system RA procurement. Under the decision, LSEs must procure a system total of 3,300 MW of RA capacity that is “incremental” to the system. VCE’s share of the total statewide obligation is 12.6 MW. At least 50% (6.3 MW for VCE) of the capacity must be on line by August 1, 2021, 75% (9.5 MW for VCE) online by August 1, 2022, and 100% online by August 1, 2023.

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.

Renewable Portfolio Standards

The portfolio must meet the minimum 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 Certificates (RECs) retired within the multi-year compliance periods. With the enactment of SB 100, the minimum RPS requirements for years 2021 – 2030 have changed with the mandated 2030 renewable target rising from 50% to 60%. Table 1 below shows the new minimum requirements.

Table 1. Annual RPS Minimum Requirements

Compliance Period	Year	RPS Percentage
3	2018	29.0%
	2019	31.0%
	2020	33.0%
4	2021	35.8%
	2022	38.5%
	2023	41.3%
	2024	44.0%
5	2025	46.7%
	2026	49.3%
	2027	52.0%
6	2028	54.7%
	2029	57.3%
	2030	60.0%

The 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 LSEs 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 2 below shows the categories and their definition.

Table 2. RPS Portfolio 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 PCC 1 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 PCC 3 for compliance period 3 is 10%.

PORTFOLIO COMPOSITION

Renewables

The renewable content established by VCE’s Board for its 2019 portfolio was 42%. For 2020, we will maintain the 42% minimum RPS requirement. For 2021, we are expecting to begin receiving substantial deliveries from the long term renewable Power Purchase Agreements that staff has been negotiating. Currently, it is anticipated that VCE may receive in excess of its established 42% from the 2021 deliveries, based upon assumed Commercial Operation Dates of the projects under negotiation.

Table 3 below shows the current estimate of energy deliveries from the new long term renewable PPAs under negotiation and their incremental contribution to VCE’s portfolio.

Table 3. Incremental Portfolio Contribution from Long Term Renewable PPAs

	Project COD	PPA Capacity	2020	2021	2022
Short Listed Projects					
<i>Project 1 Phase 1</i>	6/1/2021	72 MWs	0	119,734	205,590
<i>Project 2 Phase 1</i>	10/1/2020	50 MWs	21,380	139,281	139,281
<i>Project 2 Phase 2</i>	7/1/2021	50 MWs	0	65,889	139,281
<i>Project 2 Option</i>	7/1/2022	50 MWs	0	0	65,889
Total Supply		222 MWs	21,380	324,903	550,040
VCEA Retail Load			706,123	740,117	739,992
RPS Minimum Requirements			33.0%	35.8%	38.5%
Incremental Contribution to Renewable Content			3.0%	43.9%	74.3%

Because of the current expectation of 2021 deliveries from these contracts, staff is not anticipating a need to make any short term renewable procurements for 2021. Additionally, going forward, VCE will procure only short term PCC1 power for any anticipated delivery shortfalls that can be anticipated on a forward basis.

Non-RPS Carbon Free

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 is known as Specified Source supply. For large hydro Specified Source power, the carbon factor of the power imported will be 0.00 tonnes CO2/MWh.

With the increasing renewable content of VCE’s portfolio, over time, staff anticipates being able to reduce the amount of carbon free large hydro in the portfolio.

Table 4 below shows the total renewable and clean power content planned/anticipated for VCE’s portfolio for 2020 – 2022. Note that Table 4 below assumes that VCE will be able to extend the PPA with Yolo County Flood Control and Water Conservation District for the output of the Indian Valley Hydro Project.

Table 4. Portfolio Renewable and Clean Power Content

	2020	2021	2022
Renewable Content	42.0%	46.2%	75.2%
PCC1	58.93%	100.00%	100.00%
PCC2	41.07%	0.00%	0.00%
Required RPS Minimums	33.0%	35.8%	38.5%
PCC1	75%	100%	100%
PCC2	25%	0%	0%
Incremental Discretionary Renewables	9.0%	10.4%	36.7%
PCC1	0%	100%	100%
PCC2	100%	0%	0%
Large Hydro	33%	33%	24.8%
Total "Clean"	75%	79%	100%

As Table 4 shows, the total amount of clean large hydro targeted for 2021 is still 33%. Staff recommends leaving the 33% target in the event that actual deliveries from the long-term renewable projects are not sufficient to even achieve the 42% targeted renewable content. In that event, staff proposes that VCE procure enough short term PCC1 power to ensure that VCE achieves the 42% minimum renewable supply. Staff will make continuing updates on the expected 2021 renewable deliveries to determine when and if supplemental short term PCC1 procurement is needed.

In 2022 and beyond, depending ultimately on how much renewable content is in the portfolio, VCE can reduce the large hydro content to that needed to achieve a 100% clean portfolio.

Resource Adequacy

Forecast RA requirements for 2020, 2021, 2022, and 2023 are shown in table 5 below. In 2020, for its 2021 Compliance, VCE will have to show procurement for System, Local, and Flex supply for 2021, 100% procurement for Local RA requirement for 2022, and 50% procurement for Local RA requirement for 2023.

Table 5. Estimated Resource Adequacy Volumes, MW

	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
RA Requirements												
<i>Greater Bay Area Local</i>	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00
<i>Greater Fresno Area Local</i>	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
<i>Humboldt Local</i>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<i>Kern Local</i>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<i>North Coast/North Bay Local</i>	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
<i>Sierra Local</i>	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
<i>Stockton Local</i>	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
<i>Net System RA</i>	19.65	7.94	8.79	26.07	72.44	133.76	156.32	133.13	108.12	50.63	12.33	18.02
<i>Required Flexible Capacity</i>	48	45	44	47	55	61	46	51	50	48	44	40

	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
RA Requirements												
<i>Greater Bay Area Local</i>	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
<i>Greater Fresno Area Local</i>	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
<i>Humboldt Local</i>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<i>Kern Local</i>	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
<i>North Coast/North Bay Local</i>	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
<i>Sierra Local</i>	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
<i>Stockton Local</i>	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
<i>Net System RA</i>	37.09	30.97	26.75	51.32	86.43	179.48	183.09	150.77	128.91	71.27	40.13	38.91
<i>Required Flexible Capacity</i>	48	45	44	47	55	61	46	51	50	48	44	40

	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
RA Requirements												
<i>Greater Bay Area Local</i>	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
<i>Greater Fresno Area Local</i>	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
<i>Humboldt Local</i>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<i>Kern Local</i>	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
<i>North Coast/North Bay Local</i>	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
<i>Sierra Local</i>	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
<i>Stockton Local</i>	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
<i>Net System RA</i>	46.28	37.60	32.41	50.24	108.75	171.60	199.18	169.42	126.75	67.53	42.71	46.84
<i>Required Flexible Capacity</i>	48	45	44	47	55	61	46	51	50	48	44	40

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
RA Requirements												
<i>Greater Bay Area Local</i>	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
<i>Greater Fresno Area Local</i>	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
<i>Humboldt Local</i>	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<i>Kern Local</i>	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
<i>North Coast/North Bay Local</i>	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
<i>Sierra Local</i>	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00
<i>Stockton Local</i>	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
<i>Net System RA</i>	46.15	38.73	33.64	48.47	113.49	171.74	199.48	170.31	133.71	66.79	45.55	49.74
<i>Required Flexible Capacity</i>	48	45	44	47	55	61	46	51	50	48	44	40

The RA estimates will be updated when VCE updates its long term load forecast (Q1 2020) and when it receives its CPUC RA determination (which is expected in September 2019).

CAISO Market Energy

Because VCE customers reside in the CAISO balancing authority, their loads will be served physically by energy from the CAISO market. VCE is therefore subject to paying the CAISO market power price at the Load Aggregation Point (LAP) where it is assumed to take energy.

Day Ahead traders will analyze and create daily load forecast profiles. Forecasted hourly loads

for VCE 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 VCE’s actual load from what is scheduled in the Day Ahead market will pay or be paid at the Real Time market prices.

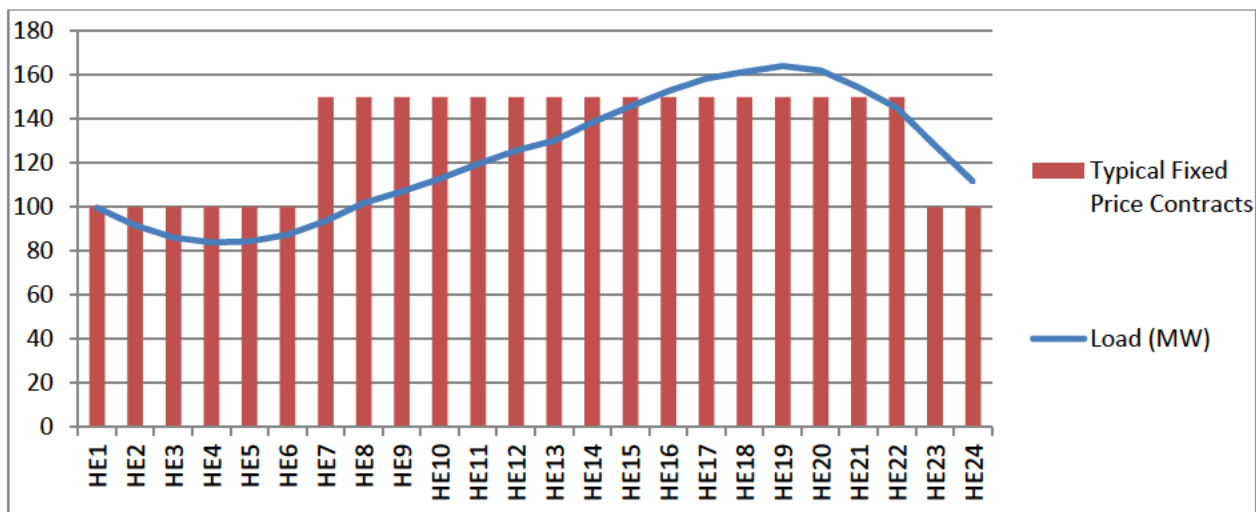
Hedging Products

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 NP-15 trading hub and VCE's LAP. These futures products are traded in standard lots of 25MW for yearly, quarterly, and monthly durations, for off and on-peak hours daily. Futures contracts can be procured such that the monthly energy delivered under the contract approximates forecast energy load for VCE during that month, but because of the size of the 25 MW blocks, the procurement 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 VCE’s system load shape. This leaves VCE short in some hours, and long in other hours, even though on a monthly basis the energy volume of the futures contract(s) approximates VCE’s forecast load. Chart 1 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 1. Standard Futures Product vs. Load Profile



Bilateral Fixed Price Delivery Contracts (Physical or Financial)

With bilateral fixed price 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 VCE's LAP. Long term renewable power purchase agreements that are at fixed prices will provide price hedge protection for their expected generation profiles.

As an option, 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 VCE 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 shortfalls and excesses between VCE's load and the fixed price hedging volumes for the next day may be trued up by selling energy for any long hours at fixed prices and purchasing energy to cover any short hours at fixed prices.

Congestion Revenue Rights

Not all sellers will enter fixed price contracts for delivery direct to load, or they will charge a high premium for doing so. Congestion Revenue Rights (CRRs) 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 received at the source node and price paid at the sink node. Holders of CRRs can also be obligated to incur charges if the congestion is in the opposite direction to the power flow they intended to hedge against.

CRRs are made available to LSEs in two ways: 1. LSE allocation; and, 2. CRR auction process conducted by the CAISO. In most cases, the LSE will only want to obtain CRRs by allocation, which has no up-front cost associated with the allocation. CRRs obtained through auction are acquired by paying a premium, the price of which is determined through the auction process.

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.

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. Transactions for energy imported into the state are structured such that the energy provider has the Cap and Trade compliance obligation. As such, VCE will not have a direct Cap and Trade compliance obligation and will not need to procure Carbon Allowances.

PROCUREMENT APPROACH AND HEDGING STRATEGY

Load Assumed for Procurements

Retail Load

The current VCE load forecast is shown in Attachment A. It includes the legacy net metered customers being enrolled across 2020 with an assumption that the opt outs are at the same rate as existing customers. Additionally, the forecast includes the assumption that the community of Winters will enroll in VCE service in 2021, with the opt out rates the same as for existing customers.

System Load

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

Forecast Adjustments

The current load forecast was produced in Q1 of 2019, with subsequent adjustments to show NEM customers enrolling across 2020, and Winters customers enrolling in 2021. VCE is scheduled to have a load forecast update performed in Q1 of 2020. Staff anticipates that the updated load forecast will be different than the current forecast. After the load forecast is updated, staff will review how that repositions all of VCE's power portfolio. Any material short positions created by a new load forecast that is greater than the current load forecast will need to be covered with additional purchases of products which will be pursuant to recommendations from SMUD and authorization from VCE's EROC.

Procurement Strategy

CAISO Market Energy

[REDACTED]

Congestion Revenue Rights

[REDACTED]

Large Hydro Clean Energy

[REDACTED]

[Redacted]

Price Hedging Energy

[Redacted]

[Redacted]

Renewable Energy

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Resource Adequacy

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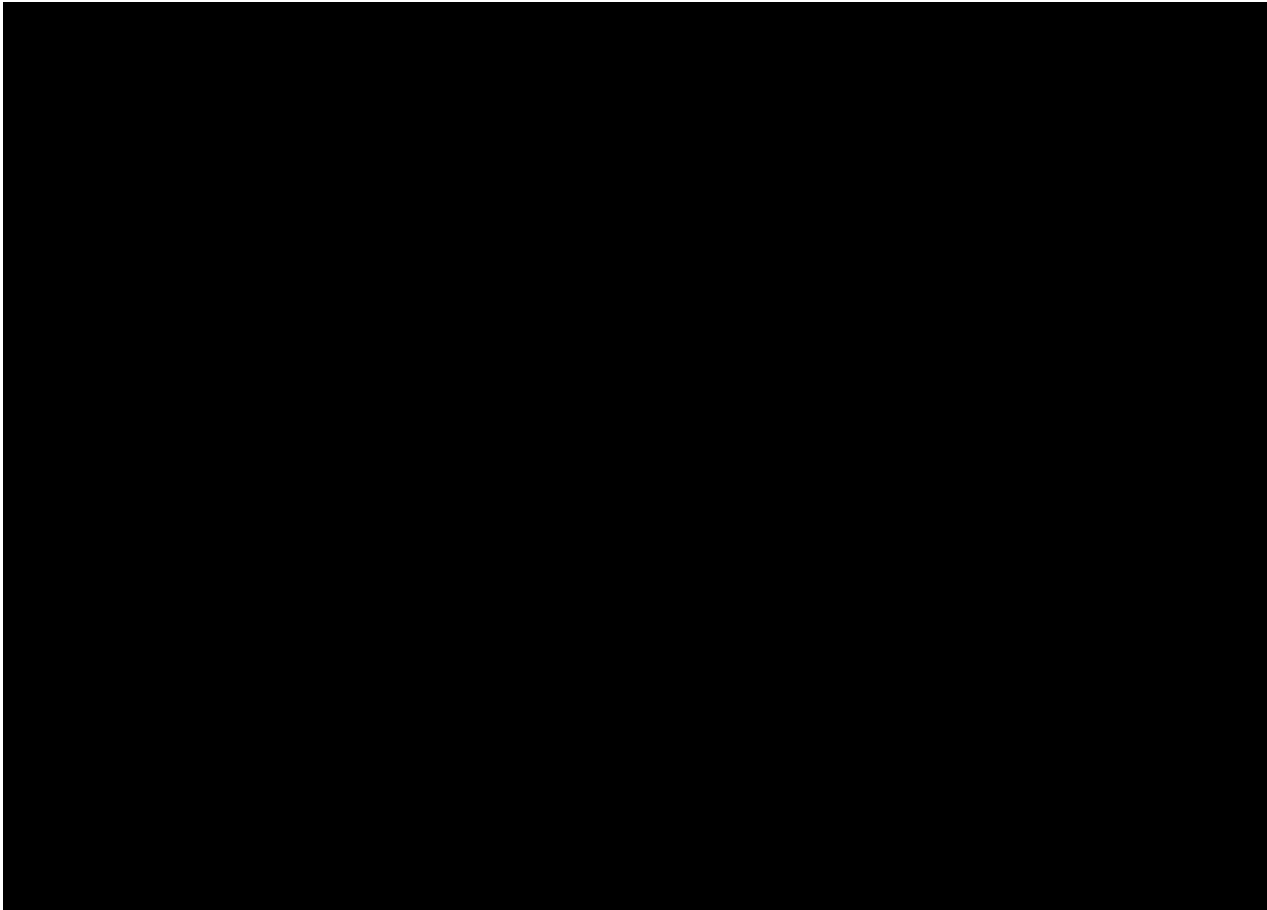
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Procurement Directives

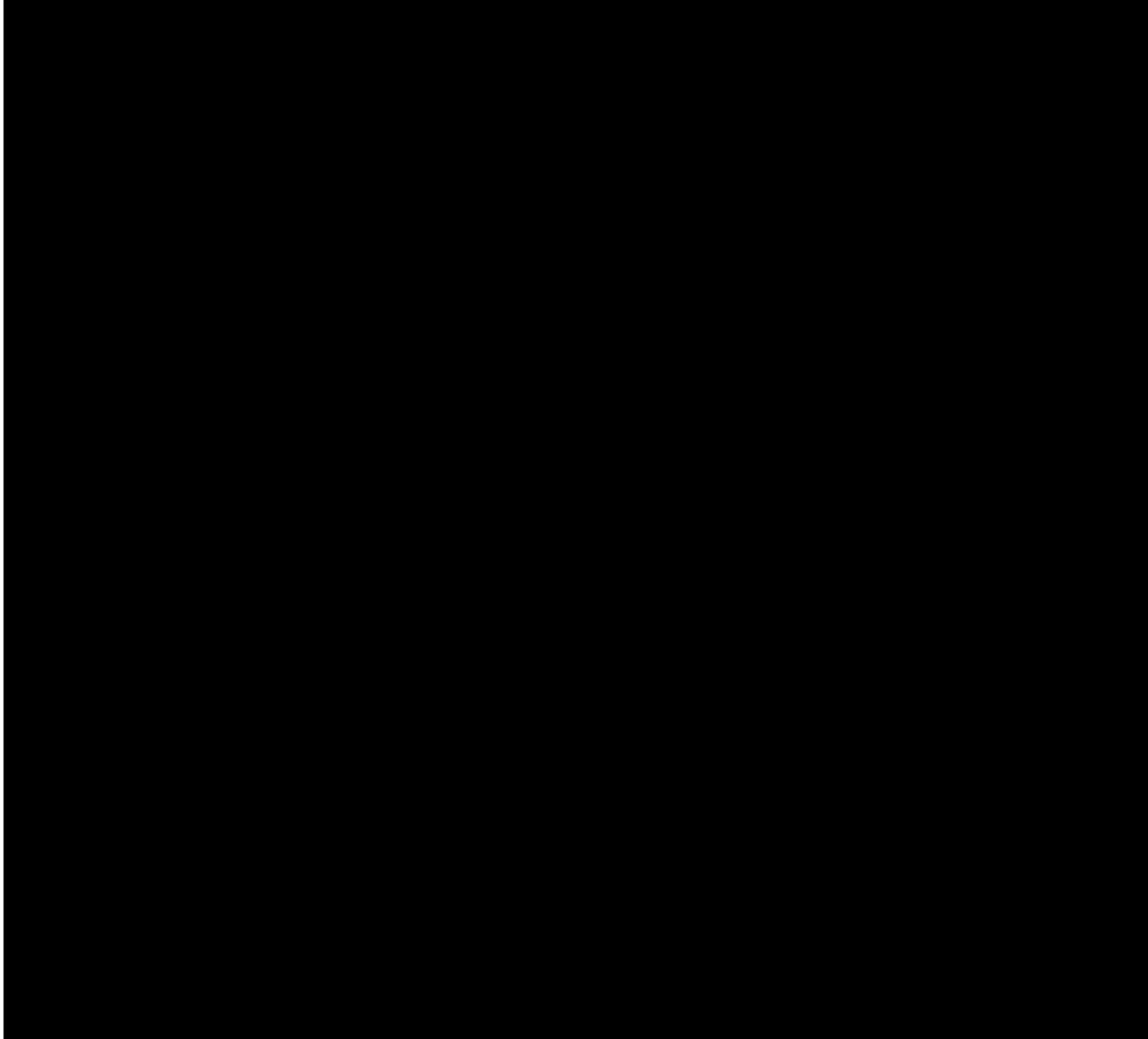
Table 6 below shows the specific Procurement Directives and Delegations that will apply for 2020.

Table 6. 2020 Procurement Directives



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Table 6 cont'd. 2020 Procurement Directives



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COMMUNITY ADVISORY COMMITTEE REIVEW

On November 12, 2019, staff reviewed the portfolio percentages with the Community Advisory Committee (CAC). The CAC voted to approve staff recommendation on portfolio percentages of renewables and large hydro for 2020, and on the recommendation by staff to not do any short term renewable procurement for 2021, unless required due to less-than anticipated 2021 energy deliveries from the new long term renewable PPAs. They also supported maintaining the 33% large hydro target for 2021. The CAC further voted to recommend that 42% is the absolute minimum renewable portfolio percentage and encouraged that renewable purchases

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be made to increase that percentage above 42%, where fiscally appropriate. The CAC motions passed unanimously.

REQUESTED ACTION

Adopt a resolution as detailed above.

Attachment A

Load Forecast

Month	Retail Load		Wholesale Load	
	Energy, MWh	Peak, MW	Energy, MWh	Peak, MW
January, 2020	50,233	88	53,623	94
February, 2020	44,543	85	47,549	90
March, 2020	44,765	84	47,786	89
April, 2020	44,878	100	47,906	107
May, 2020	59,744	134	63,777	143
June, 2020	75,125	188	80,195	201
July, 2020	85,599	209	91,376	223
August, 2020	77,667	188	82,909	201
September, 2020	65,078	163	69,470	174
October, 2020	54,473	121	58,150	129
November, 2020	49,827	95	53,190	102
December, 2020	54,191	100	57,849	107
January, 2021	55,930	105	59,705	112
February, 2021	46,424	98	49,558	105
March, 2021	46,717	95	49,870	101
April, 2021	45,368	111	48,430	118
May, 2021	61,488	142	65,638	152
June, 2021	78,905	201	84,230	215
July, 2021	89,672	223	95,724	238
August, 2021	81,848	199	87,371	213
September, 2021	68,245	169	72,851	181
October, 2021	56,524	126	60,338	134
November, 2021	52,458	102	55,998	109
December, 2021	56,539	105	60,355	113
January, 2022	56,198	105	59,991	112
February, 2022	46,475	99	49,612	105
March, 2022	46,672	94	49,821	101
April, 2022	44,914	108	47,946	115
May, 2022	61,424	153	65,569	164
June, 2022	78,769	202	84,085	216
July, 2022	89,171	224	95,190	239
August, 2022	82,123	201	87,665	214
September, 2022	68,309	167	72,920	178
October, 2022	56,599	121	60,419	129
November, 2022	52,714	102	56,271	109
December, 2022	56,624	106	60,446	113
January, 2023	56,788	105	60,621	112
February, 2023	46,607	100	49,752	106
March, 2023	46,661	95	49,810	102
April, 2023	44,469	107	47,470	114
May, 2023	61,598	157	65,756	168
June, 2023	78,714	202	84,026	216
July, 2023	89,120	224	95,135	239
August, 2023	82,230	201	87,779	215
September, 2023	68,363	173	72,977	184
October, 2023	57,084	121	60,937	129
November, 2023	53,099	105	56,683	112
December, 2023	56,783	108	60,615	115
Year	Retail Load		Wholesale Load	
	Energy, MWh	Peak, MW	Energy, MWh	Peak, MW
2020	706,123	209	753,779	223
2021	740,117	223	790,067	238
2022	739,992	224	789,934	239
2023	741,517	224	791,562	239

Confidential & Proprietary

Attachment B

Glossary

Commodity Price/Market Price

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

Congestion Revenue Right (CRR)

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

The power usage of a single customer who 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 VCE. 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 (EROCC)

This is the committee established in accordance with the VCE 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 node 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 entity's 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 50,000 MWhs 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).

VALLEY CLEAN ENERGY ALLIANCE

RESOLUTION NO. 2019- ____

**A RESOLUTION OF THE VALLEY CLEAN ENERGY ALLIANCE
APPROVING THE 2020 PROCUREMENT PLAN, DIRECTIVES AND DELEGATIONS FOR
PROCURING VALLEY CLEAN ENERGY'S POWER PORTFOLIO FOR CALENDAR YEAR 2021,
THE TARGETED PORTFOLIO MIX, AND THE MAINTENANCE OF A MINIMUM
RENEWABLE TARGET FOR 2021**

WHEREAS, the Valley Clean Energy Alliance ("VCE") 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, VCE has established procurement policies and goals and on January 18, 2018 the Board approved VCE's Procurement Guide which provided the roadmap for implementation and established the procurement plan for 2018 and 2019 power portfolio, along with delegations to Sacramento Municipal Utilities District ("SMUD") to execute on this plan;

WHEREAS, on January 23, 2019, the Board adopted via Resolution 2019-002 a revised Procurement Guide and delegated authority to VCEA Staff and SMUD to procure energy for calendar years 2020, 2021 and 2022, including the procurement of price hedging energy for VCE's expected 2020 needs with no delegation to procure hedging energy beyond 2020, consistent with the procurement policy and guide; and,

WHEREAS, on September 12, 2019, the Board adopted via Resolution 2019-013 the replacement of the August 29, 2019 EROC delegation, authorized SMUD to procure up to 100% of the forecast hedging energy needs for 2021, and authorized the Interim General Manager to approve the actual procurement strategy employed for this procurement.

NOW, THEREFORE, the Board of Directors of the Valley Clean Energy Alliance resolves as follows:

1. Approves the 2020 Procurement Plan.
2. Approves specific Directives and Delegations to SMUD for procuring all of VCE's power portfolio for calendar year 2021, and portions of the power portfolio for 2022

and 2023.

3. Approves continuing the targeted portfolio mix of 42% renewable and 33% clean large hydro into 2020.
4. Approves maintaining a minimum 42% renewable target for 2021, the first year in which VCE expects significant deliveries from long-term renewable contracts, and approves continuing a 33% clean large hydro content in 2021.

PASSED, APPROVED, AND ADOPTED, at a regular meeting of the Valley Clean Energy Alliance, held on the _____ day of December 2019, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Tom Stallard, VCE Chair

Alisa M. Lembke, VCE Board Secretary