VALLEY CLEAN ENERGY ALLIANCE

Staff Report – Item 9

TO: Valley Clean Energy Community Advisory Committee

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

SUBJECT: Q3 2018 Wholesale Energy Procurement Report

DATE: October 29, 2018

In accordance with VCE's Wholesale Energy Risk Management Policy, staff provided this quarterly report on the procurement progress for VCE's Energy Portfolio to the Board at their meeting held on October 18, 2018. The following report is being provided to the CAC for informational purposes only.

BACKGROUND

As a Community Choice Aggregator, Valley Clean Energy is an alternative generation provider to Pacific Gas & Electric, the host utility distribution company. As a generation provider, power supply costs are the single biggest component of a CCA's annual budget. In the case of VCE, power costs are projected to be approximately 90% of VCE's total 2019 costs.

Because power costs are a significant component in any energy provider's costs, like any prudent energy provider VCE has adopted a Wholesale Energy Risk Management Policy to help guide energy procurement in a way the helps reduce the exposure to some of the volatility in the prices of various energy products. Additional directives on procurement were provided in the Procurement Plan approved by the Board in January.

Load Forecast

Chart 1 below shows VCE's current forecast of loads for 2018 – 2020. VCE's 2018 projected energy loads are lower than for 2019 and 2020 because 2018 is VCE's launch year. 2019 loads are forecast assuming Net Energy Metered customers are phased in across 2019, per the Board's recent policy. 2020 is the first year projected for all VCE customers to be enrolled in the program, excluding those customers that have opted out. Opt-outs are just under 10% of the maximum possible energy load.

Between 2019 and 2020 the peak load increases more than the energy load because of the characteristic load of NEM customers. On a relative basis, NEM customers add more peak load than they do energy load.

Chart 1. VCE Forecast Annual Peak and Energy Loads

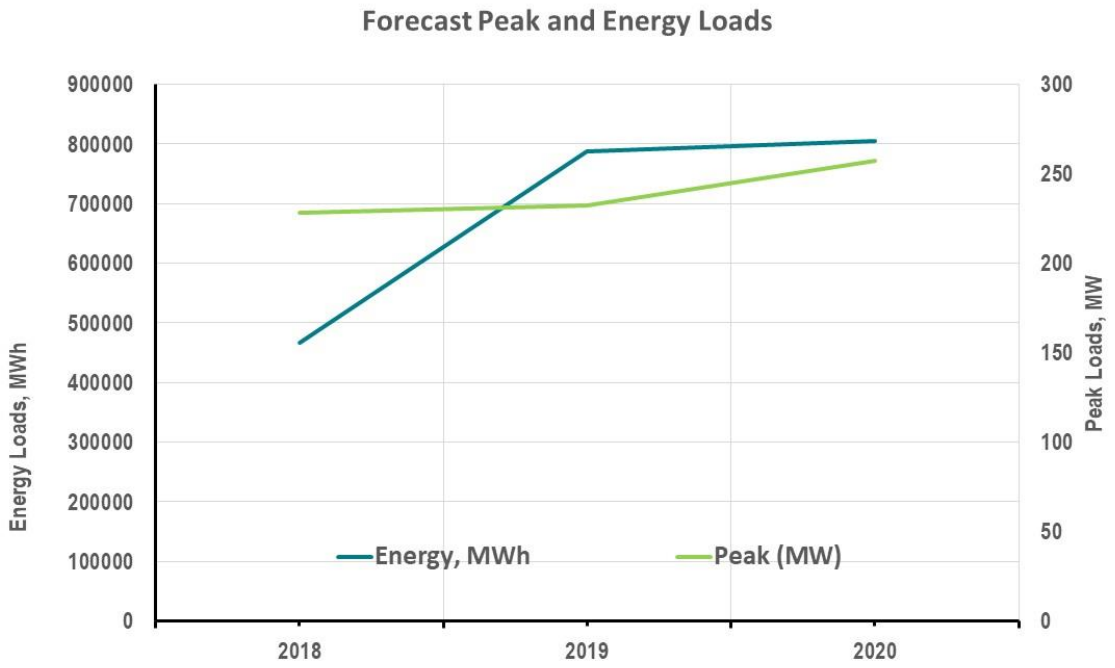
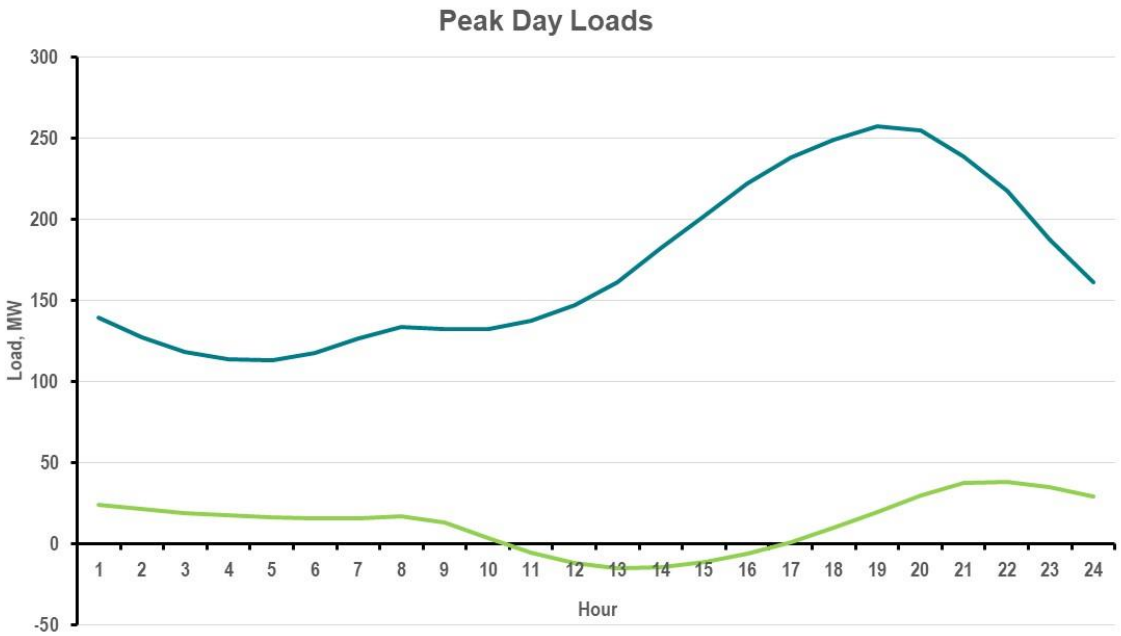


Chart 2 compares NEM customer loads with the VCE total system load on the forecast peak day. Capacity factor for this day, which is a ratio of average energy load to the peak period load is 32.3% for NEM Customers vs 66.3% for VCE's system

Chart 2. Comparison of Peak Day NEM and System Loads



Power Mix

Last December, the Board approved the renewable/clean power mix for 2018. Table 1 shows the approved power mix. We show the power mix carried forward into 2019 and 2020, the assumption used for the power budgets we'll review. VCE has elected to have a portfolio with 42% renewable power, and 33% clean, large hydro energy, to have a 75% clean power content.

Table 1. Approved Power Mix

			2018	2019	2020
Total Renewable Content			**42.0%**	**42.0%**	**42.0%**
	PCC 1	Calculated	75%	75%	75%
	PCC 2	Calculated	25%	25%	25%
	PCC 3	Calculated	0%	0%	0%
	RPS Required Minimums		**29.0%**	**31.0%**	**33.0%**
		PCC 1	75%	75%	75%
		PCC 2	25%	25%	25%
		PCC 3	0%	0%	0%
	Incremental Discretionary Renewables		**13.0%**	**11.0%**	**9.0%**
		PCC 1	0%	0%	0%
		PCC 2	100%	100%	100%
		PCC 3	0%	0%	0%
Non Renewable Carbon Free			**33.0%**	**33.0%**	**33.0%**
Total Carbon Free			**75.0%**	**75.0%**	**75.0%**

NET POSITION FOR 2018, 2019, AND 2020

For any particular power product for which VCE has a forecast need, Net Position means the percentage of that need that has been procured. Table 2 shows a summary of VCE's net position for 2018, 2019, and 2020 for its key power portfolio components.

Table 2. Summary of VCE Net Position

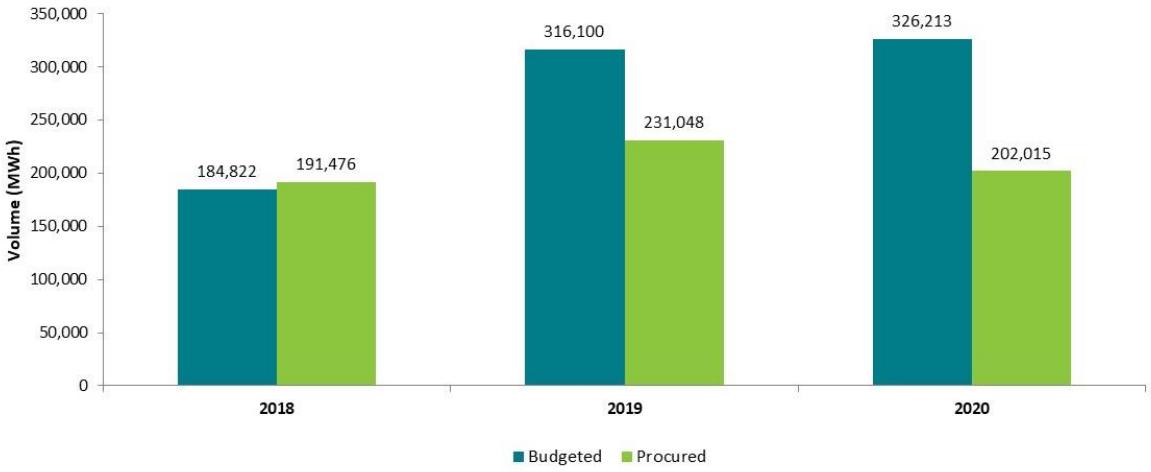
Portfolio Component	2018	2019	2020
Renewable	103.6%	73.1%	61.9%
Large Hydro	101.7%	101.9%	0.0%
Resource Adequacy	101.4%	79.3%	39.8%
Fixed Priced Energy	101.5%	98.5%	0.3%
Average	102.1%	88.2%	25.5%

The table shows that VCE is fully procured for expected 2018 power needs, 88.2% procured for expected 2019 power needs, and is 25% procured for expected 2020 needs. The plan was to be 100% procured for 2019 by October 1, and we'll discuss what has kept us from achieving that.

Renewables

Chart 3 shows VCE's net position for renewable procurement. This includes planned renewable Product Content Category 1 (PCC-1) renewables and Product Content Category 2 (PCC-2) renewables that make up the 42% targeted renewable component of the portfolio.

Chart 3. VCE Renewable Energy Position



VCE is fully procured for PCC-1 renewable power for 2019. The short position showing is for PCC-2 renewables. You'll recall that on staff's recommendation at the June 6, 2018 Board meeting, the Board approved suspending PCC-2 procurements pending resolution by the California Energy Commission (CEC) on AB 1110 Implementation. AB 1110 requires that Power Content Labelling also show associated carbon emission intensity starting with the reporting for 2019. The CEC is deciding whether or not they will require Load Serving Entities to declare the underlying carbon emissions associated with the PCC-2 power import, rather than continuing allow the PCC-2 renewable attributes to offset those carbon emissions. Should the CEC proceed on CEC staff's recommendation, then the VCE's reported carbon footprint would increase, despite the procurement of the PCC-2 renewable energy. To further offset that carbon footprint would cost VCE up to an additional $750,000. No decision has been made yet by the CEC.

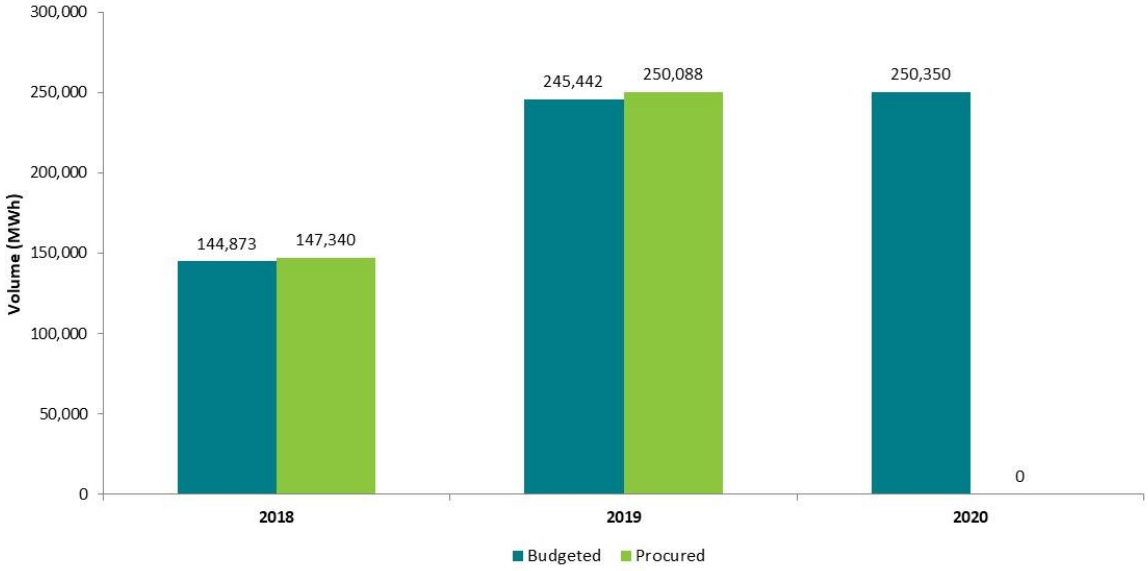
The full amount of PCC-1 power for 2020 has been procured because of opportunities to bid into investor owned utility (IOU) multi-year renewable sale solicitations. Under the General Manager's delegation from the Board in the Wholesale Energy Risk Management Policy SMUD placed bids for delivery of PCC-1 renewable energy in 2019 and 2020 and was awarded in total the full amount of PCC-1 power.

Large Hydro

Chart 4 shows VEC's large hydro (clean energy) net position. Large hydro, which does not qualify as renewable under California's Renewable Portfolio Standards, is the primary supply for non-renewable, carbon free energy in VCE's portfolio. VCE is fully procured for large hydro in 2018 and 2019. No large hydro procurements have been made yet for 2020.

The Net position is slightly above 100% because purchases were made with prior load forecasts that were slightly higher than current load forecasts. However, the additional amount procured above 100% will provide a cushion against the risk that actual VCE loads could come in higher than forecast.

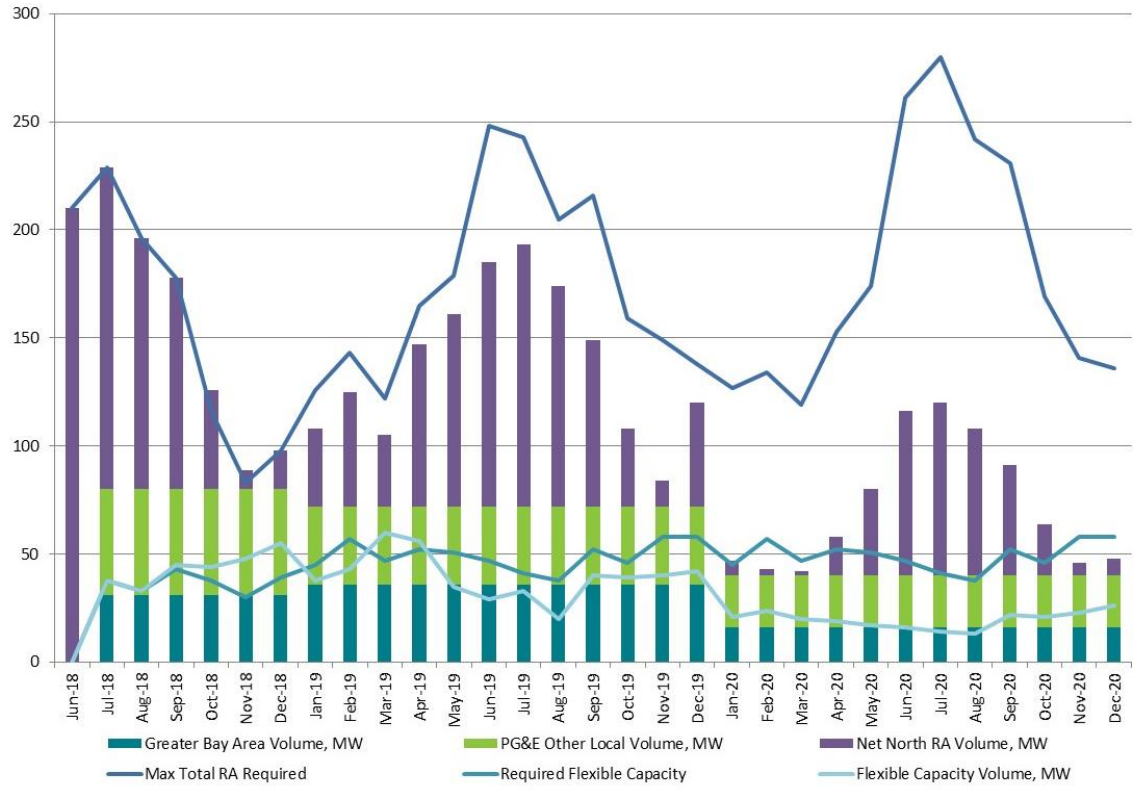
Chart 4. VCE Large Hydro Energy Position



Resource Adequacy

Resource Adequacy (RA) is the generating capacity that each LSE must have under contract (or own) to provide its share of support for the reliability of the power system to serve loads. Chart 5 below shows VCE's RA position relative to expected requirements.

Chart 5. VCE Resource Adequacy Position

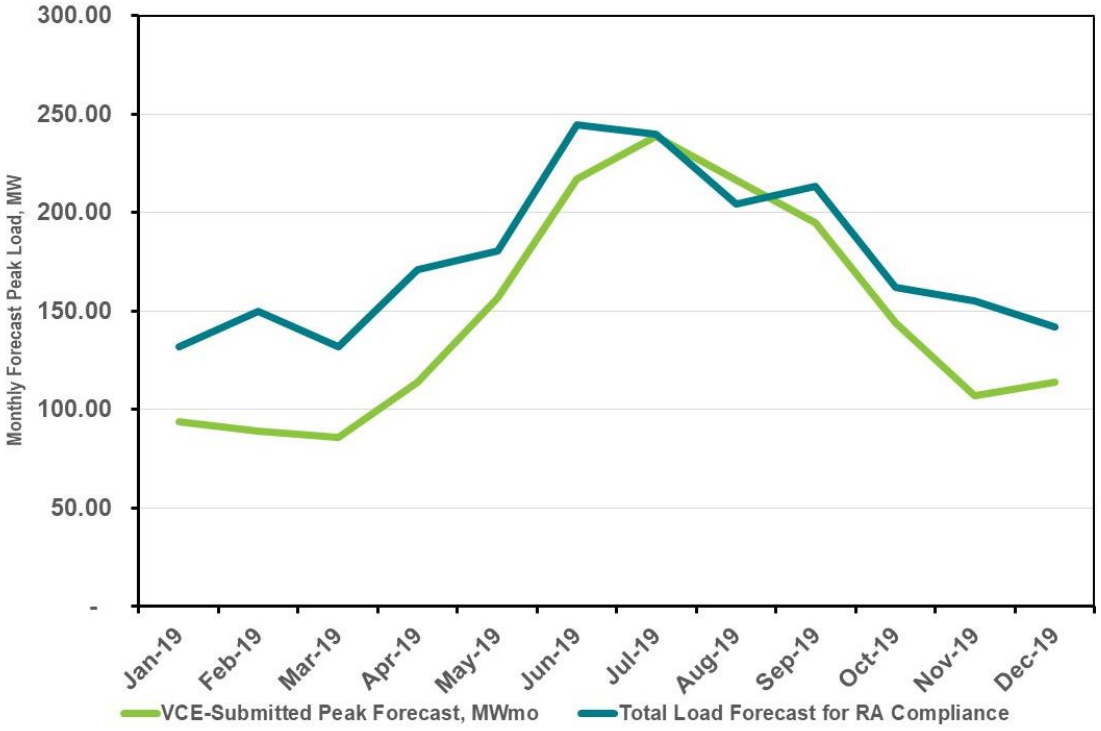


Resource Adequacy procurement was made challenging by two factors: 1. Adjustments made by the CEC to VCE's load forecasts used for determining required RA quantities; and, 2. The apparent tightness of the RA market.

The CEC is tasked with determining the total RA capacity that must be provided. The CEC compiles the load forecasts of all LSEs and compares the total to its own forecast. According to CEC staff, the total forecasts provided by all LSEs were significantly lower than its own forecast of capacity need. To reconcile the differences, the CEC allocated the difference pro-rata back to all LSEs. The final RA determination was provided to VCE on September 20.

Chart 5 shows the monthly peak load forecast submitted by VCE to the CEC, and the CEC-adjusted forecast that must be used for RA compliance. The adjusted forecast has VCE supplying 25% more capacity than the VCE forecast, which was not anticipated. Fortunately, the average cost of RA procured was below the prices used to forecast 2019 RA costs, however the additional quantities required have pushed total RA costs above what was anticipated (discussed in the budget section below).

Chart 5. Peak Load Forecast Adjustment for RA Compliance



The tightness in the RA market is showing up in the procurement efforts of the last amounts of capacity needed to demonstrate 2019 RA compliance. We have seen an increase in prices for RA capacity, and RA quantities have been harder to find. We have had to procure RA in small quantities from many more suppliers than for previous RA procurement tranches.

Fixed Priced Energy

Fixed price power contracts are used to hedge VCE against the volatility of market prices. While VCE procures renewable and clean power for its portfolio, the underlying energy from those supplies is provided and sold into the CAISO market, while VCE keeps the clean energy attributes of those resources. At the same time, VCE purchases all of its load on a daily basis from the CAISO market.

CAISO market prices are subject to volatility and variability. Fixed priced power contracts are purchased in order to minimize the volatility of prices that VCE is exposed to for the market power purchased from the CAISO.

At the time of the writing of this report, VCE fixed price energy purchases are 98.5% hedged for 2019.

FORECAST POWER COSTS

Tables 3 through 5 below show the projected power costs for VCE and compares with the power cost projected for VCE In December when the initial 2018 power budget was established.

2018 power cost are projected to come in as budgeted. While market power costs increased from those projected in December 2017, RA and carbon free large hydro procurements came in below budget, for the most part offsetting the increase in market power costs.

Table 3. Projected 2018 Power Costs

2018 Power Supply Cost	Target Budget	Current Budget	Net Savings (Costs)
Market Energy	$ 18,452,415	$ 19,080,790	$ (628,375)
CAISO Variable Fees	$ 74,915	$ 74,525	$ 390
REC Costs	$ 2,120,484	$ 2,134,666	$ (14,182)
Resource Adequacy Cost	$ 4,902,369	$ 4,657,090	$ 245,279
CAISO GMC Cost	$ 188,622	$ 187,676	$ 946
Market Services Charge	$ 39,986	$ 39,778	$ 208
System Operations Charge	$ 141,637	$ 140,899	$ 738
SCID Fee	$ 7,000	$ 7,000	$ -
Carbon Free Premium	$ 715,004	$ 345,842	$ 369,162
2018 Total Power Cost	**$ 26,453,811**	**$ 26,480,590**	**$ (26,779)**

2019 power costs are projects to be almost $800,000 above the costs projects last December driven by higher market power costs and the cost of the additional RA procurement required. These are offset some by renewable and carbon free large hydro coming in below projections.

Table 4. Projected 2019 Power Costs

2019 Power Supply Cost	Original Forecast	Current Forecast	Net Savings (Costs)
Market Energy	$ 29,919,046	$ 30,492,587	$ (573,541)
CAISO Variable Fees	$ 133,517	$ 132,425	$ 1,092
REC Costs	$ 3,918,978	$ 3,619,312	$ 299,666
Resource Adequacy Cost	$ 6,262,962	$ 6,960,485	$ (697,524)
CAISO GMC Cost	$ 335,696	$ 333,049	$ 2,648
Market Services Charge	$ 71,265	$ 70,682	$ 583
System Operations Charge	$ 252,431	$ 250,367	$ 2,065
SCID Fee	$ 12,000	$ 12,000	$ -
Carbon Free Premium	$ 1,274,315	$ 1,105,514	$ 168,800
2019 Total Power Cost	**$ 41,844,514**	**$ 42,643,373**	**$ (798,859)**

At this time, it appears that 2020 power costs could be significantly higher than originally projected due to in the increase in forward market power prices, and due to the unanticipated increased RA requirements. However, keep in mind that much of VCE's 2020 portfolio still has to be procured, so projections of 2020 power costs are still subject to some variability.

Table 5. Projected 2020 Power Costs

2020 Power Supply Cost	Original Forecast	Current Forecast	Net Savings (Costs)
Market Energy	$ 31,073,696	$ 32,334,716	$ (1,261,019)
CAISO Variable Fees	$ 140,623	$ 141,826	$ (1,202)
REC Costs	$ 4,050,729	$ 3,918,653	$ 132,076
Resource Adequacy Cost	$ 6,250,724	$ 7,534,976	$ (1,284,252)
CAISO GMC Cost	$ 352,924	$ 355,839	$ (2,915)
Market Services Charge	$ 75,058	$ 75,700	$ (642)
System Operations Charge	$ 265,866	$ 268,139	$ (2,273)
SCID Fee	$ 12,000	$ 12,000	$ -
Carbon Free Premium	$ 1,342,136	$ 1,353,134	$ (10,998)
2020 Total Power Cost	**$ 43,210,833**	**$ 45,639,144**	**$ (2,428,311)**

PROCUREMENT PROGRESS

The first Procurement Plan, approved by the Board in January, provided specific directives for procuring power for 2018 and 2019.

2018 Directives

2018 power was to be procured by March in order that VCE be able to approve generation rates prior to when notices had to go out to all customers starting April 1. As discussed previously, 2018 power was procured at the initially projected costs, allowing the Board to set a 2.5% generation rate discount to PG&E rates.

2019 Directives

The Board provided for power for 2019 to be procured during 2018 in 3 tranches, with the final tranche having procurements completed by October 1. While good progress was made, not all procurements were completed by October 1. We discuss the reasons below.

Renewables

As mentioned, the Board authorized suspending PCC-2 renewable power procurements until a decision is made by the CEC regarding the AB 1110 implementation. As such, staff anticipates renewable procurement for 2019 will be completed once the CEC makes its decision. In the next couple of months, staff will return with a recommendation on completion of PCC-2 procurements.

Large Hydro

Large hydro purchases were competed mid year. Because of the concerns on pricing pressure on large hydro supply, large was procured in the first two procurement tranches.

Resource Adequacy

As mentioned, the additional RA requirement was provided to VCE in the "final" 2019 RA determination provided on September 20. With the release of the final determination, PG&E issued a solicitation to sell its surplus RA. PG&E's close of bids was September 26, and announced awards on October 10. Because of the timing of the final determination and the timing of PG&E solicitation, RA procurement was not completed by October 1. We ultimately were not awarded any RA from PG&E's

solicitation but have been picking up the remaining RA from other counterparties. VCE will have to demonstrate to the CPUC that it has procured 100% of its local capacity requirements, and 90% of its total requirements by October 31.

Fixed Price Energy

Completing the final tranche of fixed price energy purchases was complicated by the number of individual products needed to complete the hedging program. We try and shape fixed price energy blocks, to match as closely as possible the varying shape of VCE's load, and we saved the smaller remaining pieces to procure in the 3rd tranche of procurement activity. This required us to ask for 42 individual products that we conducted auctions for. A number of the auctions did not result in offers within the pricing caps proposed, so those auctions will be rerun.

Additional Procurements Under General Manager's Delegation

Four procurements were made outside of the 2018/2019 Board procurement directives, within the delegations provided to the General Manager in the Wholesale Energy Risk Management Policy. 1. The two year power purchase agreement with Yolo County Flood Control and Water Conservation District for the purchase of the output of the Indian Valley Hydro Project; 2. Participation in an IOU sale solicitation for multi-year RA supply under which RA for 2019 and 2020 was procured; 3. Participation in an IOU sale solicitation for multi-year renewable energy supply under which renewable energy for 2019 and 2020 was procured; and, 4. Participation in a second IOU sale solicitation for multi-year renewable energy supply under which renewable energy for 2019 and 2020 was procured. Participation in the multi-year IOU solicitations resulted in procurements for the respective products at prices that were below budgeted prices.

CONCLUSION

With the exception of PCC-2 renewable power, the remaining 2019 procurements are proceeding, and should be completed by the end of October.