



Northern California Power Agency
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BUSINESS PROGRESS REPORT

2019

September

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Generation Costs & Reliability

Combustion Turbine Project

Unit Operation for August 2019

Unit	Availability		Production			Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	366.4	MWh	CAISO / CAISO
	100.0%	100.0%	Unit 2	305.8	MWh	
Curtailements, Outages, and Comments:						
Unit 1: Normal operation.						
Unit 2: Normal operation.						
Unit	Availability		Production			Reason for Run
CT1 Lodi	100.0%		22.8 MWh			CAISO
Curtailements, Outages, and Comments:						
Normal operation.						
Unit	Availability		Production			Reason for Run
CT2 STIG	100.0%		2,442.2 MWh			CAISO
Curtailements, Outages, and Comments:						
8/20/19 - Lodi STIG returned to full availability OMS 7363497						
Unit	Availability		Production			Reason for Run
LEC	99.7%		99,585 MWh			CAISO
Curtailements, Outages, and Comments:						
8/8/19 - LEC Spinning Reserve capability test 1600-1700 OMS 7532383						
8/19/19 - LEC STG tripped offline due to bad card 2016-2139. CTG remained online. OMS 7619613						

Maintenance Summary – Specific per asset above.

Geothermal Facilities

Availability/Production for August 2019

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	100 %	19,460 MWh	U1 had not outages for the month
Unit 2	98.59 %	*19,235 MWh	U2 was off line 8/1/19 from 0600 - 1630 for 2.4 XFMR inspection
Unit 3	N/A %	N/A	Unit 3 remains out of service.
Unit 4	100 %	24,704 MWh	U4 had no outages for the month
Southeast Geysers Effluent Pipeline	3 %	74.5 mgallons	Average flow rate: 1,557 gpm
Southeast Solar Plant	N/A	3,419 KWh	Year-to-date KWh: 2,595,576
Bear Canyon Pump Station Zero Solar	N/A	100,510 KWh	Year-to-date KWh: 3,557,695

* Accounts for an additional 677 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

Hydroelectric Project

Availability/Production for August 2019

Units	Availability	Net Electricity Generated	Out-of-Service
Collierville Unit 1	13.84 %	2,942 MWh	CV #1 unit was out of service on 8/5/19 at 0700 through present time due to a scheduled unit rewind and maintenance.
Collierville Unit 2	99.22 %	37,984 MWh	CV #2 unit was out of service on 8/1/19 at 0900 through 1445 due to scheduled bi-monthly maintenance.
Spicer Unit 1	97.54 %	1,812 MWh	NSM #1 unit was out of service on 8/10/19 at 0537 through 2200 for a PG&E transmission line outage. NSM #1 unit was out of service on 8/29/19 at 0957 through 1149 for a PG&E distribution outage.
Spicer Unit 2	97.58 %	1,810 MWh	NSM #2 unit was out of service on 8/10/19 at 0537 through 2139 for a PG&E transmission line outage. NSM #2 unit was out of service on 8/29/19 at 0958 through 1156 for a PG&E distribution outage.
Spicer Unit 3	89.37 %	295 MWh	NSM #3 unit was out of service on 8/10/19 at 0544 through 0741 on 8/13/19 due to a PGE transmission line outage. NSM #3 unit was out of service on 8/29/19 from 0959 to 1503 for a PG&E distribution outage.

Operations & Maintenance Activities:

- CMMS work orders
- Andritz mobilized in for the CV unit 1 Rewind
- McKays Sediment Design Kickoff
- CV Unit 1 Rewind Begins
- Core loop test conducted on CV1 Stator Core
- FERC/DSOD Inspections
- Completed EAP revisions for CAOES

Environmental, Health & Safety (EH&S) Projects Incident Reports

- There were no Cal OSHA recordable, lost time, or vehicle accidents in the month of August.
- Find below a Safety Report that highlights the following areas: recordable incidents and lost time accidents (LTAs) reported this period and this calendar year; the number of days since last recordable or LTA; the number of work hours since last recordable or LTA; and vehicle accidents reported this month and this calendar year. In September of 2012, Generation Services completed an internal audit of its records with the results reflected in this report and was updated through the payroll period ended August 31, 2019.
- The “CT Group” column reflects the combined safety numbers of all CT employees. Beginning with the November 2009 report, the CT Group Column also includes Lodi Energy Center staff.

August 2019 Generation Services Safety Report

	Hydro	GEO	CT Group *	NCPA HQ **
Cal OSHA Recordable (this month)	0	0	0	0
Cal OSHA Recordable (calendar year)	2	0	0	0
Days since Recordable	73	403	1,608	6,676
Work Hours Since Last Recordable	6,506	85,515	238,451	2,435,317
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	4,342	1,471	9,512	5,605
Work Hours without LTA	395,403	302,490	678,995	2,057,335
Vehicle Incident (month)	0	0	0	0
Vehicle Incident (calendar year)	0	3	0	0

* CT Group: Combines CT-1, CT-2 and LEC Operations

** NCPA HQ: Roseville employees at the Main Office

Data originates from OSHA logs, HR records and payroll information.
Days and Hours are calculated through pay period ended August 31, 2019.

Power Management/NCPA Market Results

Dispatch and Schedule Coordination

- NCPA Dispatch and Schedule Coordination Center safely, reliably, and economically schedules, monitors, and manages NCPA and NCPA member power resources and loads 24 hours per day, 7 days per week on a continuous basis. This process includes balancing MSSA loads and resources on a 5-minute basis, optimizing NCPA resources and minimizing ISO costs.
- NCPA MSSA Load Data:

Current Year 2019 Data

	August 2019		Calendar Year 2019	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	478.77 8/15 @ 1700	224,327	478.77 8/15 @ 1700	1,563,712
SVP	579.27 on 8/14 @ 1700	337,063	587.78 6/11 @ 1600	2,472,543
MSSA	1057.99 on 8/15 @ 1700	561,390	1057.99 on 8/15 @ 1700	4,036,255

Last Year 2018 Data*

	August 2018		Calendar Year 2018	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	417.67 8/9 @ 1800	211,073	419.2 7/25 @ 1700	1,544,081
SVP	529.29 8/9 @ 1700	325,476	529.29 8/9 @ 1700	2,463,814
MSSA	945.44 8/9 @ 1700	536,549	945.44 8/9 @ 1700	4,007,895

* Last year's data added for comparison purposes only

System Peak Data

	All Time Peak Demand	2019 Peak Demand
NCPA Pool	517.83 MW on 7/24/06 @ 1500	478.77 8/15 @ 1700
SVP	587.78 MW on 6/11/19 @ 1600	587.78 6/11 @ 1600
MSSA	1070.79 MW on 9/1/17 @ 1700	1057.99 8/15 @ 1700

- NCPA MSSA has a Deviation Band with the CAISO, which is used as a performance measure by the CAISO. The ability to stay within this Deviation Band is a measure of NCPA Dispatch's ability to balance the MSSA Loads and Resources on a 5-minute basis. The following NCPA Deviation Band Performance table includes all deviations, including deviations from unit forced outages, metering and load outages, COTP, Western, and WECC curtailments.

NCPA Deviation Band Performance		
	August 2019	Calendar Year 2019
MSSA % Within the Band	98.54%	96.11%

- Spicer Meadows:
 - August 10 @ 0537 – 2139, units off line for PG&E transmission outage; Unit 3 remained on providing station service. Station service power restored normal on August 13 at 0741
 - August 29 @ 0957 – 1149, units off line for PG&E distribution outage; Unit 3 remained on providing station service; station service power restored normal at 1503

- Geothermal Units:
 - August 1 - 31, Unit 4 de-rated to 34 MW for P site well maintenance
 - August 1 @ 0600 – 1631, Unit 2 off line for 2.4 kV transformer work and T3000 DCS repair

- Lodi Energy Center:
 - August 19 @ 2016 – 2139, STG off line due to controller card failure

- Alameda CTs:
 - August 30 @ 1825 – 1912, Unit 2 failed start

- Lodi CT:
 - No curtailments

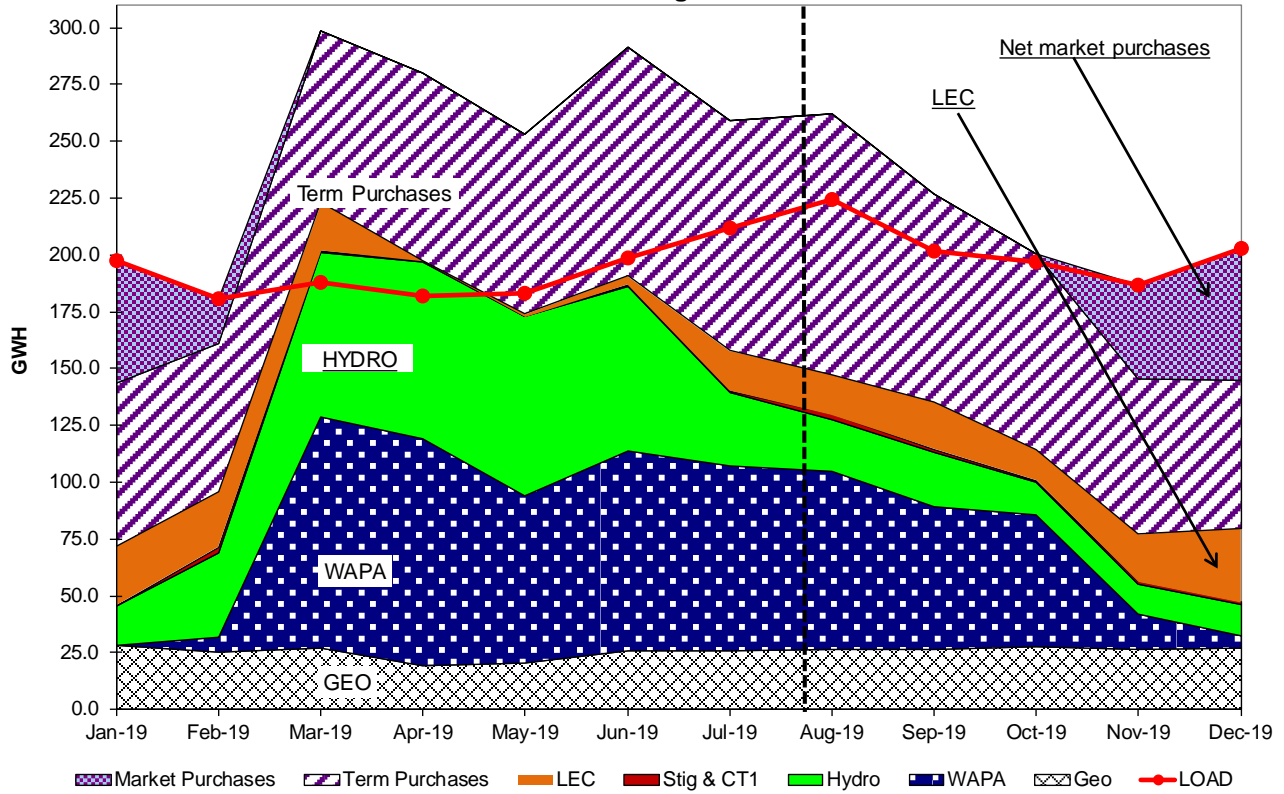
- Collierville Units:
 - August 1 @ 0900 – 1445, Unit 2 o/s for bi-monthly maintenance
 - August 5 @ 0700, Unit 1 o/s for rewind and annual maintenance; ETR November 21

- STIG:
 - August 1 - 20, unit de-rated to 44mw due to inlet air chiller o/s

Pooling, Portfolio Planning & Forecasting

- NCPA Pool load in August 2019 was 224,328 MWh, or 103% of forecast. Summer temperatures rose at the end of the month, lifting demand above historical levels and continued, boosting Pool load through September 15th to 102,794 MWh, nearly 6 GWh (6%) higher than during the same period in September 2018.
- Lodi Energy Center (LEC) operated for 28 of 31 days during August 2019, with the majority being partial day runs, resulting in 17,908 MWh for the Pool, or 63% of the pre-month forecast. Production was again lower than the previous month due to continued strong hydro generation, mild weather and low power prices. Through September 15, 2019 LEC had generated 9,286 MWh for the Pool.
- During August 2019, no rain was recorded at the Big Trees gage. Average August Big Trees precipitation is 0.09”.
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) is being maintained at \$35/MWh.
- NSMR storage as of August 31, 2019 was at 145,696 acre feet. The historical average NSMR storage at the end of August is 119,084 acre feet. As of September 16, 2019 NSMR storage is 133,183 acre feet. The current NCPA Pool share of NSMR storage is 68,192 acre feet.
- Combined Calaveras Project generation for the Pool in August 2019 totaled 22.7 GWh, down from 32.2 GWh in July 2019. The Pool’s 22.7 GWh in July 2019 was slightly below the pre-month forecast of 25.7 GWh.
- Western Base Resource (BR) deliveries for the Pool for August 2019 were 78,474 MWh, including Displacement energy totaling 29,440 MWh. The amount delivered was 87% of Western’s pre-month forecast. Through September 15, 2019 the Pool had received 28,000 MWh, including 8,070 MWh from the Displacement program, or 45% of Western’s pre-month forecast for September.
- The PG&E Citygate gas index averaged \$3.22/MMBtu for delivery on September 15, 2019, well above the average PG&E gas price during August of \$2.538/MMBtu and 65 cents higher than July’s average as temperatures warmed up in California and other factors affected supply. Strong storage refill continued in August before dropping off in early September. The September 2019 PG&E Bidweek price is \$2.73/MMBtu, 4.5 cents lower than August and proving to be a good value so far.
- Day-ahead NP15 electricity prices averaged \$34.88/MWh (HLH) and \$27.57 (LLH) during August 2019, with the hourly TH_NP15 maximum at \$111.91 on August 15 during a brief heat wave. Through early September, daily maximums again topped the \$100 level (on September 13) as above-normal temperatures persisted.

NCPA POOL RESOURCES
Calendar 2019: Jan.- August Actual / Balance Forecast



NCPA Pool Loads & Resources Value Summary								
	Peak and Energy Summary Aug-19				Estimated Production Costs		Cost of Serving Demand	
	Coincident Peak (MW)	Total MWh	Forecast Values		NCPA Pool		Totals	Avg (\$/MWh)
			Avg. MW		Cost/Revenue (Estimate)	Variable Cost (\$/MWh)		
Demand	478.8	224,328	217,195	301.5	N/A	N/A		
WAPA	-	78,474	90,247	105.5	\$ 2,278,398	\$ 29.03	\$ 7,804,799	\$ 34.79
Geothermal	-	26,399	27,491	35.5	501,581	19.00		
Hydro	-	22,860	24,497	30.7	137,161	6.00		
Stig & CTs	-	1,871	2,328	2.5	95,168	50.85	at Variable Cost of Pool Generation	
LEC	-	17,908	28,768	24.1	676,751	37.79		
Contracts	-	114,547	100,542	154.0	6,216,772	54.27	\$ 8,479,572	\$ 37.80
Market - Net (Net Sales = Negative)	478.8	(37,732)	(56,678)	(50.7)	(1,254,347)	33.24		
Net Total	478.8	224,328	217,195	301.5	\$ 8,651,485	\$ 37.80		

Monthly Market Summary						
	Pool Energy (MWh)	HLH Avg MCP (\$/MWh)	Avg Variable Cost of Pool Generation (\$/MWh)	Forward Prices (EOX NP15 HLH Ask Prices)		
				NP15 8/1/2019 (\$/MWh)	9/13/2019 (\$/MWh)	
Jan-19	197,652	\$ 42.93	\$ 45.13	Oct-19	\$ 36.24	\$ 39.22
Feb-19	180,866	\$ 79.12	\$ 41.57	Nov-19	36.01	37.80
Mar-19	187,890	\$ 39.02	\$ 24.83	Dec-19	45.55	44.80
Apr-19	178,692	\$ 24.88	\$ 28.55	Q1 2020	\$ 38.45	\$ 39.13
May-19	183,123	\$ 20.05	\$ 32.01	Q2 2020	28.06	27.16
Jun-19	198,698	\$ 25.83	\$ 38.09	Q3 2020	45.84	45.93
Jul-19	212,102	\$ 33.30	\$ 56.98	CY2020	\$ 37.94	\$ 37.34
Aug-19	224,328	\$ 34.79	\$ 37.80	CY2021	39.61	38.02
Sep-19				CY2022	40.55	38.72
Oct-19				CY2023	39.85	38.26
Nov-19				CY2024	39.19	37.74
Dec-19				CY2025	38.87	37.27

NOTES TO SUMMARY TABLE:

Peak and Energy Summary:

* Monthly generation summary of Coincidental Peak (hour in which pool demand peaked), total MWh for the month, and pre-month forecasted values for report period.

* Generation totals are for POOL SHARE of the projects.

* Hydro totals include Collierville and Spicer generation.

Estimated Production Costs:

* Fixed project costs not included except for WAPA, where total month's project costs are used to calculate the average unit cost.

* STIG and CT costs include forward natural gas and basis hedge transactions.

* STIG & CT costs reflect \$2.60 and \$1.62/MWh variable O&M costs per 6-12-06 GSCA.

Cost of Serving Demand:

Compares price of meeting total monthly demand with (1) Hourly pool market clearing price;

(2) Variable cost of pool gen. Pool Gen is sum of estimated costs divided by sum of generation

Industry Restructuring, Contracts and Interconnection Affairs

Resource Adequacy Compliance Filings

- NCPA made the following Resource Adequacy compliance filings with the CAISO for the compliance period November 2019:
 - Monthly System Resource Adequacy Demonstration (filed September 17, 2019)
 - Monthly Supply Plan (filed September 17, 2019)

Industry Restructuring

NCPA is actively participating in a number of CAISO stakeholder initiatives on behalf of the members. The following is a brief description of key active initiatives:

Resource Adequacy Enhancements

- Revised Straw Proposal Scheduled for publication on October 2, 2019.
- Stakeholder working group scheduled to take place on October 9, 2019.
- Due to the rapid transformation of the resource mix in California, the CAISO is currently re-examining the CAISO Resource Adequacy requirements and rules. This initiative will explore changes to the CAISO's Resource Adequacy requirements and rules to ensure the resources providing reserve services are effectively supporting reliable operations of the grid.
- CAISO is proposing massive overhauls to its RA program in conjunction with CPUC changes. Specific areas the CAISO is looking at are termination of the Resource Adequacy Availability Mechanism for System capacity and replacing it with "less complicated" counting rules similar to eastern RTOs, import eligibility, exemptions, maximum import capability calculations and allocations, redefining Planned and Forced outages, new "fast" and "long" ramping products.
- In NCPA submitted the following points in the latest round of initiative comments:
 - Concern that UCAP will not properly account for unconventional resources
 - Support in using CAISO's own systems to track outages rather than rely on NERC systems
 - Supports procurement of additional capacity when system is deficient as opposed to individual LSEs
 - Requested clarification that LF-MSS self-provision RA will remain exempt from Must Offer Obligation in CAISO markets
 - When MOO is applicable, it should be set at UCAP as instead of NQC
 - Concern that substitution comparability test may be too restrictive
 - Offered suggestions to improve allocation of RA import capability
 - Seeks clarification for flexible RA allocation exempt language from "changes in load" to "change in load between the day-ahead market and meter"
 - Expressed strong opposition to UCAP deficiency tool due to potential for market power.

Day-Ahead Market Enhancements

- This initiative will explore new day-ahead products that will address ramping needs between intervals and uncertainty that can occur between the day-ahead and real-time markets.
- The latest working group occurred on 8/13/2019. CASIO reviewed the need for new products along with data supporting uncertainty concerns:
 - Uncertainty between day-ahead and real-time market has increased from 2017 to 2019 and CAISO operators are addressing this development with out of market actions which disrupts market efficiency
 - Historically, generators had higher certainty to know if they would be scheduled in real-time
 - Due to uncertainty and changing resource fleet, commitment decisions are no longer necessarily known
 - Gas, hydro, storage, and imports need to cover costs to be available for dispatch in real-time – this will be accomplished with imbalance reserves
- New Imbalance Reserve Product (IRP) will be designed to address granularity and uncertainty between day-ahead and real-time markets:
 - Hourly product; 15-minute dispatchable; Biddable; Covers granularity difference and uncertainty between DAM and FMM; All awards are co-optimized and settled simultaneously; DAM has no energy price formation issue because the market solves all hours in a single optimization; Stepped relaxation parameters (proposed)
- CAISO reviewed two options for applying IRP:
 - Option 1 – Financial
 - Co-optimizes bid-in demand, ancillary services and imbalance reserves
 - Imbalance reserves cover historical uncertainty between IFM cleared net load and FMM net load
 - Exceptional dispatch if IFM clears inconsistent with operational needs
 - Option 2 – Financial + Forecast
 - Co-optimizes bid-in demand, ISO reliability capacity, ancillary services and imbalance reserves
 - Imbalance reserves cover historical uncertainty between ISO's day-ahead net load forecast and FMM net load
 - Reliability capacity covers differences between ISO net load and cleared net load
 - Exceptional dispatch if IFM/RUC clears inconsistent with operational needs
- CAISO reviewed policy alignment and relationships among Day Ahead Market Enhancements, Extending Day Ahead Market to EIM, and Resource Adequacy Enhancements.
- NCPA Comments included tentative support of Option 2 along with requests for special Load Following MSS cost allocation netting.

Review Transmission Access Charge Structure

- This initiative will consider possible changes to the CAISO's current volumetric Transmission Access Charge (TAC) structure for recovering participating transmission owners' costs of owning, operating and maintaining transmission facilities under CAISO operational control. The CAISO will consider stakeholder input on the initiative scope, which will include possible changes to reflect the benefits of distributed resources in reducing future transmission needs.
- CAISO's draft final proposal includes a hybrid billing determinate consisting of volumetric and peak demand functions in order to address costs shifts as well as the full impact of high coincident peak demand, low load factor UCD areas that have relatively lower volumetric use compared to high load factor areas. It received general support from the market and will be presented to the CAISO board this year.
- NCPA performed an impact analysis and determined that NCPA members would mostly benefit or be indifferent to the new billing determinant so long as certain LFMSS benefits remain in place.

Hybrid Resources

- CAISO will publish Straw Proposal and hold a working group meeting on October 3, 2019.
- As generation developers become increasingly interested in pairing energy storage with existing or proposed generation, this initiative will explore how such "hybrid" generation resources can be registered and configured to operate within the ISO market. This initiative will develop solutions allowing developers to maximize the benefits of their resource's configuration. Hybrid resource configurations also raise new operational and forecasting challenges that ISO plans to address during this initiative.
- CAISO refers to hybrid projects or hybrid resources as a combination of multiple technologies or fuel sources combined into a single resource with a single point of interconnection. Projects are not required to include storage to be considered hybrid resources.
- Approximately 41% of the total capacity currently seeking interconnection is hybrid resource configurations.
- Initial Objectives:
 - Promote the reliable and efficient integration of hybrid resources
 - Address additional technical questions surfaced by increasing numbers and interest in hybrid resources:
 - Configurations, metering, operations, market participation, and settlements
 - Address new operational and forecasting challenges raised by hybrid resources
 - New requirements may be needed to provide reliable participation by hybrid resources

- CAISO prefers customers to register a resource ID for each technology/fuel source for increased visibility in order to address uncertainty issues. CAISO reminds participants that separate resource IDs are required to provide forecasts for hybrid resources that include eligible/participating intermittent resources. The forecasts help to minimize uninstructed imbalance energy charges.

Western

Western Base Resource Tracking (NCPA Pool)

Western Base Resource Tracking - NCPA Pool							
	Actual			Costs & Rates			
	BR Forecast ¹ (MWh)	BR Delivered (MWh)	Difference (MWh)	Base Resource & Restoration Fund (\$)	Monthly Cost of BR ² (\$/MWh)	CAISO LMP Differential ³ (\$/MWh)	12-Mo Rolling Avg. Cost of BR ⁴ (\$/MWh)
Jul-19	95,615	81,155	(14,460)	\$2,134,816	\$ 26.31	\$ (0.02)	\$ 30.98
Aug-19	75,245	78,474	3,229	\$2,134,816	\$ 27.20	\$ (0.02)	\$ 30.65
Sep-19	46,290	-	(46,290)	\$2,049,840	\$ 44.28	\$ -	\$ 31.49
Oct-19	23,193	-	(23,193)	\$989,840	\$ 42.68	\$ -	\$ 32.78
Nov-19	7,602	-	(7,602)	\$989,840	\$ 130.20	\$ -	\$ 34.08
Dec-19	6,564	-	(6,564)	\$989,840	\$ 150.81	\$ -	\$ 35.35
Jan-20	9,331	-	(9,331)	\$989,840	\$ 106.09	\$ -	\$ 35.92
Feb-20	17,163	-	(17,163)	\$989,840	\$ 57.67	\$ -	\$ 36.40
Mar-20	27,643	-	(27,643)	\$989,840	\$ 35.81	\$ -	\$ 35.69
Apr-20	52,877	-	(52,877)	\$2,230,108	\$ 42.18	\$ -	\$ 35.52
May-20	84,464	-	(84,464)	\$2,230,108	\$ 26.40	\$ -	\$ 36.34
Jun-20	90,039	-	(90,039)	\$2,230,108	\$ 24.77	\$ -	\$ 36.80
1/	As forecasted in NCPA 19/20 Budget						
2/	= (Western Cost + Restoration Fund)/BR Delivered, for Pool Participants only.						
3/	= (MEEA LMP - PG&E LAP LMP) using public market information (i.e. not settlement quality).						
4/	Based on BR Delivered (Actual) when available and BR Forecast in all other cases. Includes CAISO LMP impact.						

- NCPA Pool received 78,474 MWh Base Resource (BR) energy in August 2019. This includes 29,440 MWh of Displacement energy for an estimated savings of \$164,466 or about \$5.60/MWh.
- Pool Members' total savings under Market Efficiency Enhancement Agreement (MEEA) pricing cost Pool Members approximately \$1,000 in August 2019. The net negative saving was due to lower congestion prices for import at COTP and PACI.

Western Base Resource Scheduling Flexibility

- WAPA and BOR implemented Base Resource Min-Take Experiment 3 customer pre-disclose energy beginning operating date July 11, 2019. The intent is to potentially lower the Base Resource Min-Take even more for all Base Resource customers during the low value hours. Based on NCPA's preliminary analysis, NCPA Pool shows an added value of about \$20,000 total for seven trade dates in July 2019 and August 2019.

Draft 2025 Base Resource Contract

- Comments on the prototype Base Resource Contract is due on September 20, 2019. WAPA will hold a second face-to-face meeting with customers to review the comments on the prototype Base Resource Contract on October 8, 2019.

Interconnection Affairs

PG&E Update

Public Safety Power Shut Off (PSPS) Program

- PG&E originally stated providing NCPA with a draft communication protocol document by mid-August but has recently stated the communication protocols will be part of a CPCU filing. NCPA's L&R team is monitoring the CPUC filing. More information on this topic will be provided to members as soon as it's received.
- PG&E has a new website which houses its live 7 day Forecast – https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/psps-weather-map.page?WT.mc_id=Vanity_weather; this website is very useful and gives NCPA and Members an idea of what PG&E is looking at internally across their region. Monitoring this website will also provide us with advanced notification of a potential or actual PSPS event.
- We learned thru City of Healdsburg of a website (PG&E's PSPS Portal) which first responders and safety personnel have access to. The site houses the PSPS maps along with PG&E's customer contact information. When we looked at contact information for NCPA Members we noticed the customer count for each member is not up to date. We are not sure if this is the information PG&E uses to prioritize shutdowns and restoration. The concern here is PG&E might still be viewing our members as one customer. We have requested a meeting with PG&E's PSPS team to clarify. NCPA will keep members posted as soon as more information is received.

FERC Order 890 Case

- NCPA continues to work with PG&E to construct a stakeholder process for their self-approved capital projects. Recently PG&E submitted a 5 year plan capital plan. CPUC and NCPA jointly selected seven specific projects for PG&E to present during our next meeting. Within the seven projects, we should be able to gauge how PG&E does a business case and cost benefit analysis prior to approving capital projects.
- On August 12th, PG&E did provide detailed and internal project approval documents for the seven selected projects. With this information we can have a meaningful stakeholder process to probe technical and project management process questions.
- All parties met with PG&E on September 16th. PG&E and the joint intervenors had a productive technical meeting. The next step will be for the joint intervenors to propose a revised asset management stakeholder process by September 27th.

TO-20 Rate Case

- This case is currently in settlement discussions. PG&E is asking for a ROE 12.5%, stating wildfire mitigation cost for this increase. Typically the return of equity is somewhere in the low 9 percent range.
- PG&E has inserted the FERC 890 case/their self-approved projects stakeholder process into the TO-20 settlement discussions. The joint interveners are currently evaluating how to proceed. Next settlement conference is scheduled for September 27th.

Cotenancy Agreement

- PG&E with support from NCPA and SVP filed an amendment that acknowledged CDWR's request for termination.
- The amendment rejected CDWR's request, pending resolution of the Cost of Removal dispute. All other matters have been delayed until this issue is resolved.
- NCPA anticipates this matter will be set for settlement. During such settlement discussions, the issue of decommissioning and other outstanding issues will be further negotiated between the parties.

Debt and Financial Management

- The US Federal Reserve looks set to follow the European Central Bank and cut rates at the September 18th meeting by perhaps a quarter of a percentage point. Fed Chairman, Jerome Powell, has made clear that he doesn't think a US recession is likely, but he has acknowledged that economic headwinds are intensifying. Market prices currently imply a 90% chance that Federal Reserve will reduce short term rates by a quarter point to a range of 1.75% - 2.00%.
- Reading the minutes from the previous meeting (July 31st), Federal Reserve officials who voted to lower interest rates agreed that the move *shouldn't* be viewed as an indication that there is a "pre-set course" for future cuts and most participants saw the cut "as part of a recalibration" in response to changing conditions.
- The interesting question is not what the Fed will do to rates when its two-day policy meeting concludes Wednesday, but what it will indicate it *wants* to do over the next few years. Current pricing implies a 60% chance that the Fed's rate band will be lowered again before the end of 2019, and an almost 50% chance of further reductions by next spring.
- The Agency's auditor, Baker Tilly, looks to wrap up NCPA's audit over the next few weeks. Staff and Baker Tilly plan to present and recommend Commission acceptance of the financials at the next Finance Committee scheduled for October 8th. It is anticipated the Agency will receive another clean, unmodified opinion.

- The Agency recently received actuarial valuations regarding the pension and retiree medical plans. Both plans continue to show improvements in the funded ratios as the Agency continues budgeting at the 15y amortization schedule.

Plan	Funding Ratio 6/30/2017	Funding Ratio 6/30/2018
PERS Pension	58.5%	60.2%
Retiree Medical	77.9%	86.1%

Schedule Coordination Goals

Software Development

- Staff, in collaboration with Power Management, Generation Services, and a consultant, have begun efforts to develop a solution to enable Multi-Stage Generation capability for the Lodi Energy Center. Business Analysis and software development is underway in preparation for a market simulation as early as this month and anticipated to go live in early 2020.
- Information Services staff are performing a technology upgrade to its legacy NCPA ADS (NADS) software application that is responsible for processing and responding to various market generator resource instructions sent by the CAISO for each 5-minute interval. In addition, the business logic will be refined to further improve performance under a variety of operational conditions. Completion is anticipated middle of next year.
- Work is in progress to automate and integrate members' monthly Resource Adequacy demonstrations and supply plans into NCPA's bid-to-bill system. Completion is targeted for the middle of next year.
- Planning is underway to develop a general Data Exchange app and/or service to provide an API for the member/customer to submit data into the NCPA data store. Initially rolled out as a means for MEID to submit energy schedules and water flows, the app/service will be redesigned to handle submission of a variety of interval data. Initial target use case is for Palo Alto's Solar Resources' Expected Energy data. Roll out is expected by the end of October.

Network

- Progress continues to be made upgrading staff to Windows 10 with over 68% of the Agency on the new Operating System. The goal is to have all workstations moved over before the end of 2020.
- The Ops and Support group has been working alongside Power Management and Settlements in preparation for the CAISO MSG market simulation later this year. Part of this effort will include enhancements to SCADA control logic for LEC configurations along with updating dispatch control center screens.

- The Ops and Support group is preparing new Next Generation Firewalls to be installed during the October failover. These firewalls will replace old off support equipment and help to both enhance our security and CIP compliance posture.
- The final Oracle 12 upgrade plans have continued throughout the summer and preparations for additional testing is underway. The remaining two databases are the largest and most complicated to configure, but it is imperative they are updated soon to maintain support from Oracle.
- Plans are underway to perform a hard failover to the Disaster Recovery Center October 18th – 20th. This will not only test our failover procedures but give the Operations and Support time to perform maintenance and installation of new firewalls and switch hardware.
- Staff continues to gather requirements for becoming a NERC CIP Medium impact entity. This includes a timeline, resources and costs that will be associated with the activity and ongoing maintenance that will be required to support such a program. A schedule and timeline is anticipated by September/October. Procedures are being finalized for the additional Low Impact requirements that are set to go live January 1, 2020.

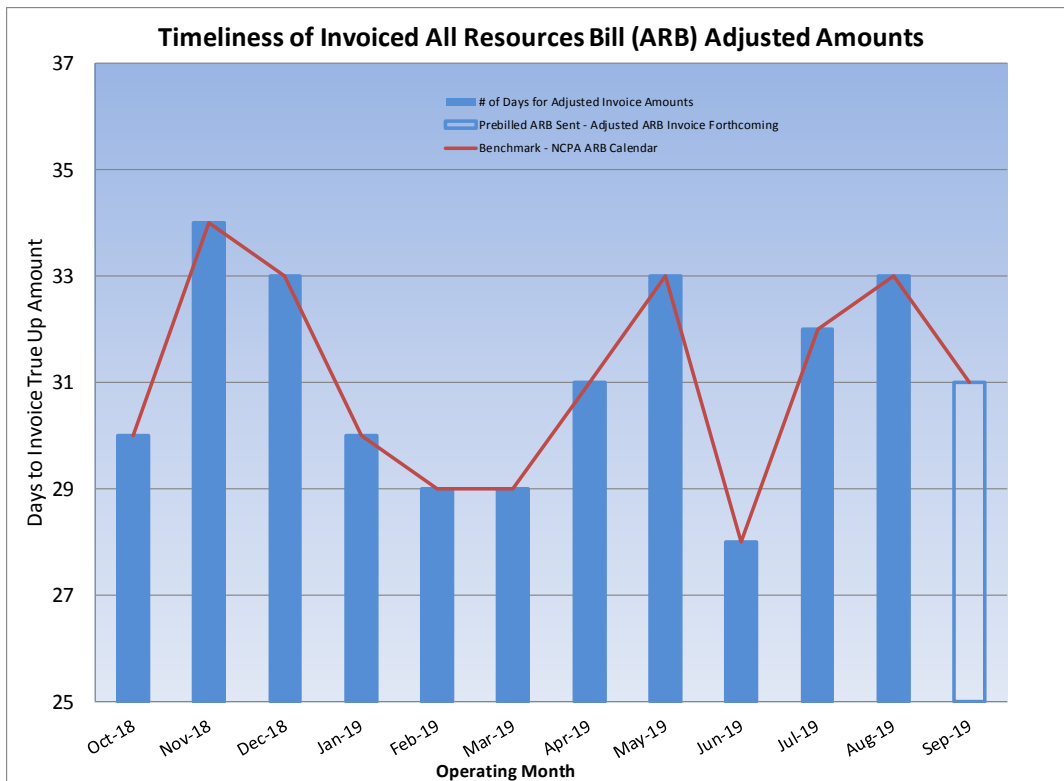
NCPA Bills & Settlements

Progress Against the Strategic Plan

Adjusted Power bills, which include CAISO transactions, invoiced to members the following month subsequent to the monthly pre-billed ARB month. Timely ARB settlements adjustments help improve members' cash flow and reconciliation of their budget performance.

The September 2019 NCPA All Resources Bill (ARB) monthly invoice sent to members on August 26, 2019 contains:

- September 2019 monthly pre-billed budget/forecast amounts;
- July 2019 (1st Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- June 2019 (2nd Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
- April 2019 (3rd Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
- October 2018 (4th Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
- December 2017 (5th Adjustment) T+18 month recalculated CAISO settlement true-up allocations;
- September 2016 (6th Adjustment) T+33 month recalculated CAISO settlement true-up;
- June 2016 (7th Adjustment) T+35 month CAISO settlement true-up;



Legislative & Regulatory

Political Arena State/Federal/Western Programs

- NCPA submitted comments on two important determinations the U.S. Bureau of Reclamation intends to finalize by the end of December 2019—*Central Valley Project Improvement Act (CVPIA)* “Croffsets” credits, and the *CVP Cost Allocation Study*. Our goal is to seek certainty and equity in final cost determinations in each of the separate but concurrent actions which will result in \$10 million annual credits through WAPA’s power revenue requirement (rate).
- NCPA submitted comments to WAPA on the *draft 2025 Central Valley Project Base Resource Contracts* that become effective January 1, 2025 through December 31, 2054. While contracts as currently drafted allow for termination every five years, we sought additional clarification on triggering events and other provisions. We expect WAPA to distribute the final contracts by January 1, 2020, and then entities have six months to execute.
- On August 30, 2019, WAPA announced its plans to participate in the California Independent Service Operator’s *Energy Imbalance Market*. NCPA participated in the public process, and we will continue to evaluate the cost methodology determinations through a separate rate process next year.
- Central Valley Project power customers CVPIA Restoration Fund charge effective October 1, 2019, will be \$24.15 million, down from \$30 million Federal Fiscal Year ending September 30, 2019, but still 44% of maximum allowable collection.

- September 13th was the last day of the 2019 legislative year, the first in the 2019-20 two-year legislative session. NCPA spent the final month of the session advocating in support of several bills linked to wildfire mitigation, including notable legislation focused on utility power line deenergization practices (SB 560), wildfire threat forecasting (SB 209), and defensible space practices (AB 1516), among other issues. NCPA strongly opposed efforts earlier in the session to mandate the use of a centralized procurement entity (AB 56) and mandate pumped hydroelectric storage procurement (SB 772), due to conflicting nature of the mandates with local procurement oversight. Governor Newsom has until October 13th to either sign or veto legislation. Bills signed will into effect January 2019, unless otherwise indicated in the legislation.

Human Resources

Hires:

Rocco Pallante, joined NCPA on August 19, 2019 as Hydro Operations, Supervisor II at our Hydroelectric Facilities in Murphys, CA. Rocco is a registered Mechanical Engineer with 25 years of experience, including 18 years of Hydro specific experience at Hetch Hetchy Water & Power (HHWP) where he was the Chief Engineer and Engineering Manager. Most recently Rocco worked for TCB Industrial as a Project Manager.

Darryl Ramirez, joined NCPA on September 3, 2019 as an Operator Technician at our Geothermal Facilities in Middletown, CA. Darryl has over 13 years of operations and maintenance experience having most recently worked as a Lead Control Room Operator for Coso Operating Company.

Intern Hires:

None.

Promotions/Position Changes:

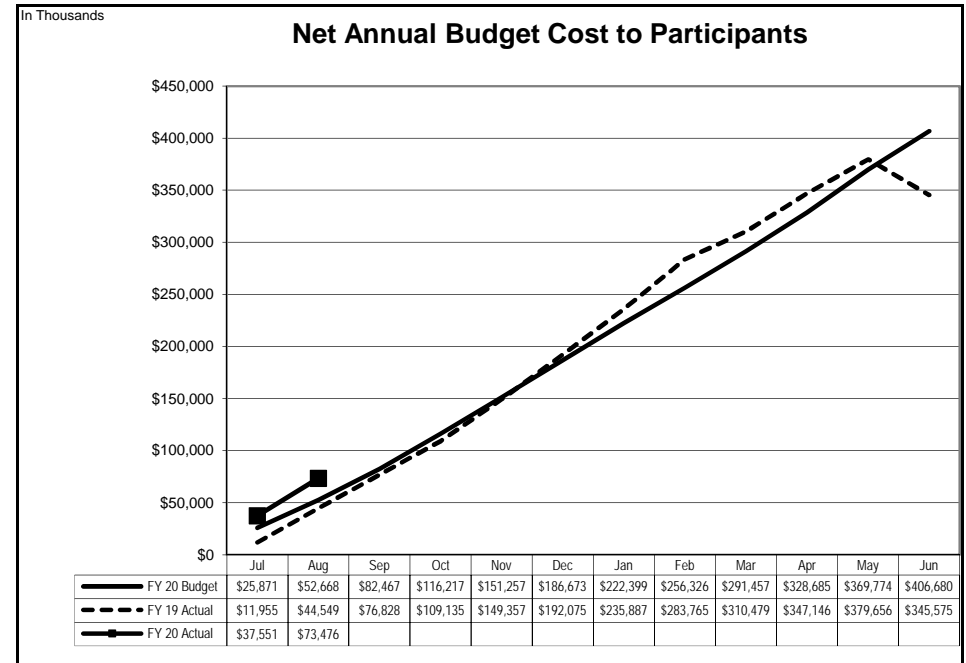
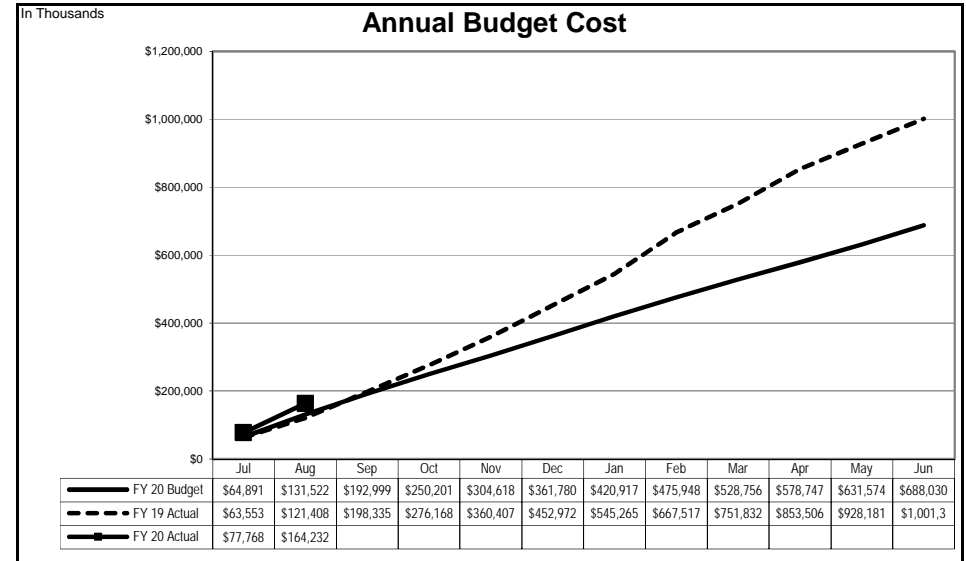
None.

Separations:

Miranda Shumaker, Power Settlements Analyst III, resigned from her position at our Headquarters office to pursue other career opportunities, effective September 6, 2019.

**Annual Budget
2019-2020 Fiscal Year To Date
As of August 31, 2019**

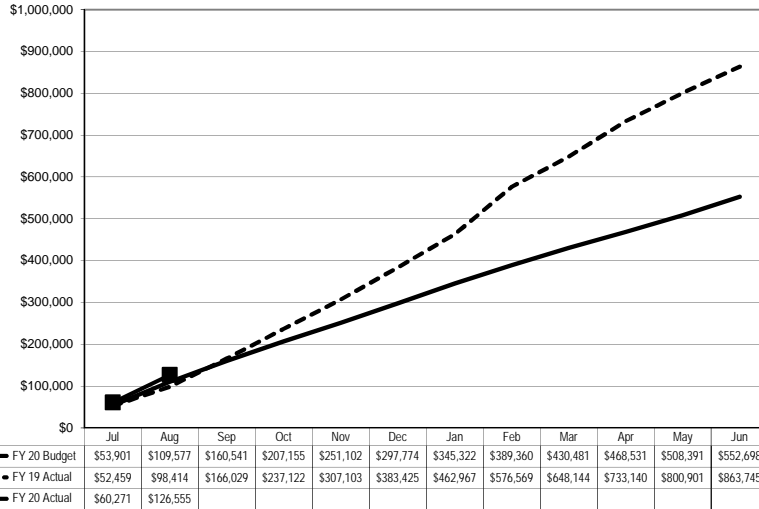
In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
GENERATION RESOURCES				
NCPA Plants				
Hydroelectric	54,074	8,581	\$ 45,493	84%
Geothermal Plant	35,311	5,832	29,479	83%
Combustion Turbine No. 1	6,170	261	5,909	96%
Combustion Turbine No. 2 (STIG)	9,438	1,452	7,987	85%
Lodi Energy Center	92,960	11,435	81,526	88%
	197,953	27,561	170,393	86%
Member Resources - Energy	56,229	12,860	43,369	77%
Member Resources - Natural Gas	3,541	746	2,795	79%
Western Resource	23,325	5,678	17,647	76%
Market Power Purchases	15,123	4,328	10,796	71%
Load Aggregation Costs - ISO *	256,030	74,359	181,671	71%
Net GHG Obligations	497	1,023	(526)	-106%
	552,698	126,555	426,143	77%
TRANSMISSION				
Independent System Operator	117,089	34,827	82,262	70%
MANAGEMENT SERVICES				
Legislative & Regulatory				
Legislative Representation	2,132	309	1,823	85%
Regulatory Representation	748	101	647	86%
Western Representation	745	105	640	86%
Customer Programs	424	35	389	92%
	4,049	550	3,499	86%
Judicial Action	625	18	607	97%
Power Management				
System Control & Load Dispatch	6,082	1,140	4,942	81%
Forecasting & Prescheduling	2,934	448	2,486	85%
Industry Restructuring	414	60	355	86%
Contract Admin, Interconnection Svcs & Ext. Affairs	954	180	774	81%
Green Power Project	-	-	-	
Gas Purchase Program	77	12	65	84%
Market Purchase Project	111	17	94	85%
	10,573	1,858	8,716	82%
Energy Risk Management	212	32	180	85%
Settlements	980	137	843	86%
Integrated System Support	243	11	232	96%
Participant Pass Through Costs	1,560	140	1,420	91%
Support Services	-	104	(104)	
	18,243	2,850	15,393	84%
TOTAL ANNUAL BUDGET COST	688,030	164,232	523,798	76%
LESS: THIRD PARTY REVENUE				
Plant ISO Energy Sales	127,624	15,146	112,478	88%
Member Resource ISO Energy Sales	29,156	2,659	26,497	91%
Member Owned Generation ISO Energy Sales	67,108	9,993	57,114	85%
NCPA Contracts ISO Energy Sales	15,623	3,451	12,173	78%
Western Resource ISO Energy Sales	18,304	5,828	12,477	68%
Load Aggregation Energy Sales	-	32,309	(32,309)	
Ancillary Services Sales	4,197	2,536	1,661	40%
Transmission Sales	110	18	92	83%
Western Credits, Interest & Other Income	19,227	18,816	411	2%
	281,350	90,756	190,594	68%
NET ANNUAL BUDGET COST TO PARTICIPANTS	406,680	73,476	\$ 333,204	82%



Annual Budget Budget vs. Actual By Major Area As of August 31, 2019

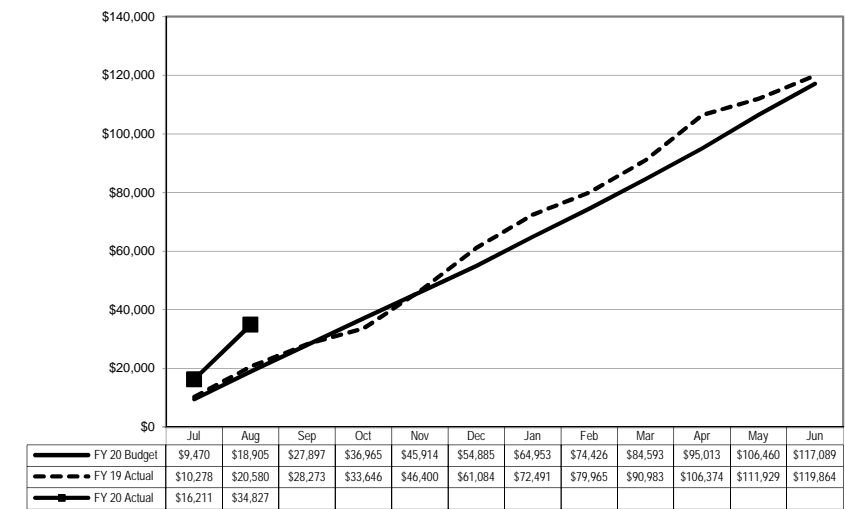
In Thousands

Generation Resources



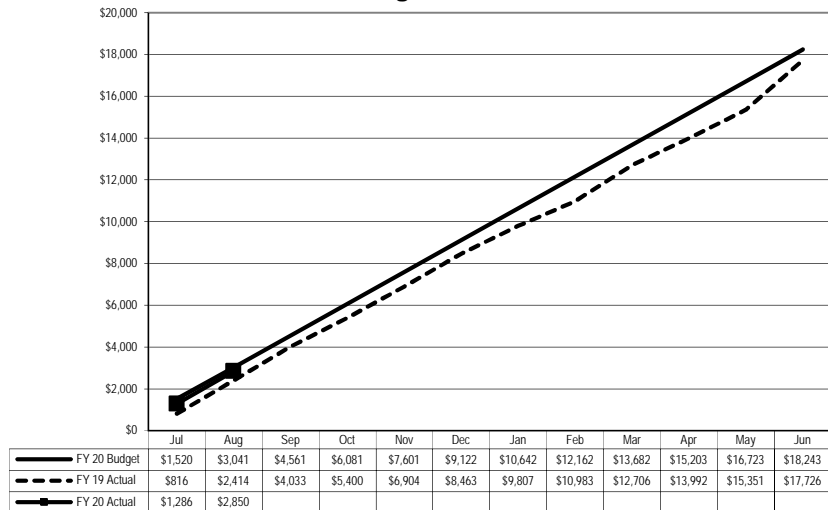
In Thousands

Transmission-ISO



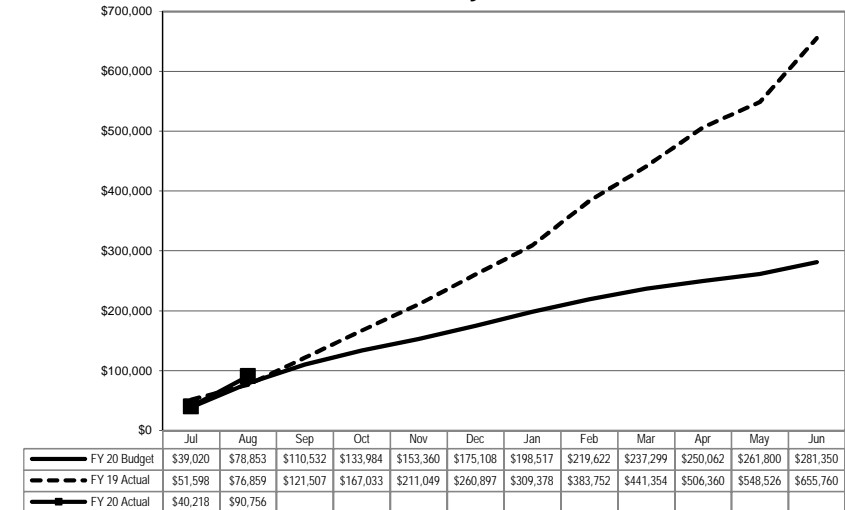
In Thousands

Management Services



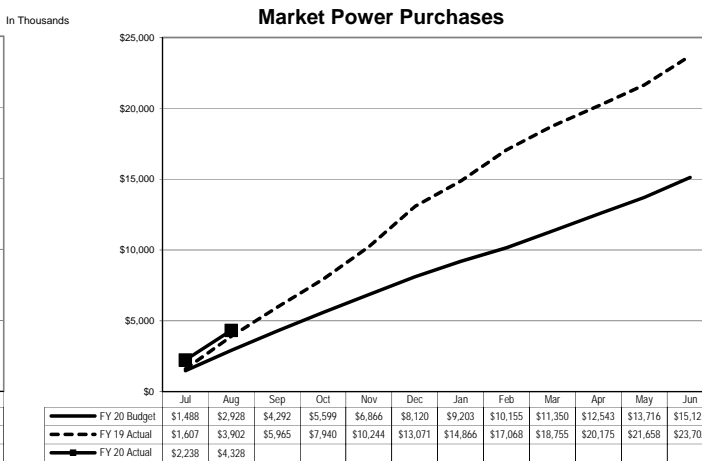
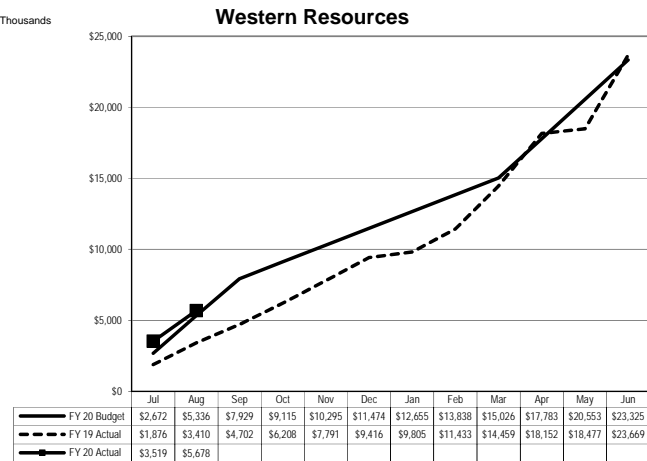
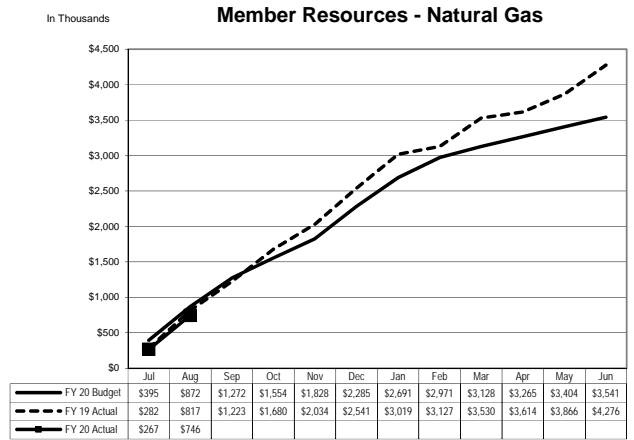
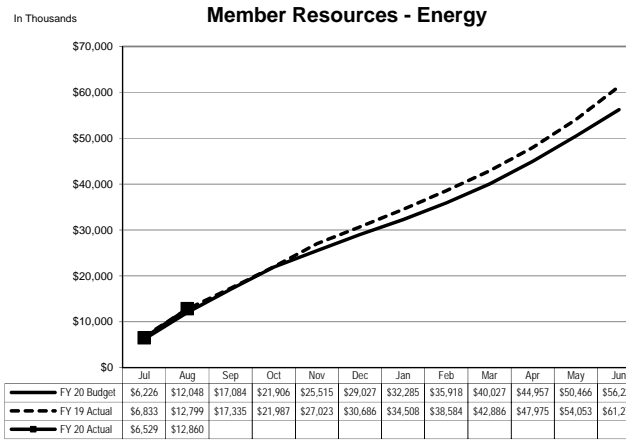
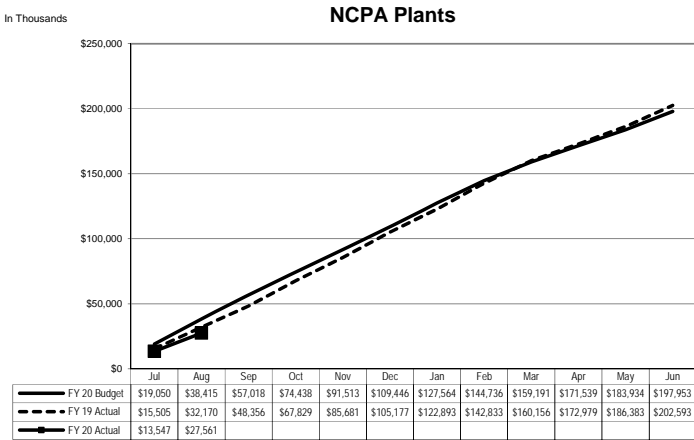
In Thousands

Third Party Revenue



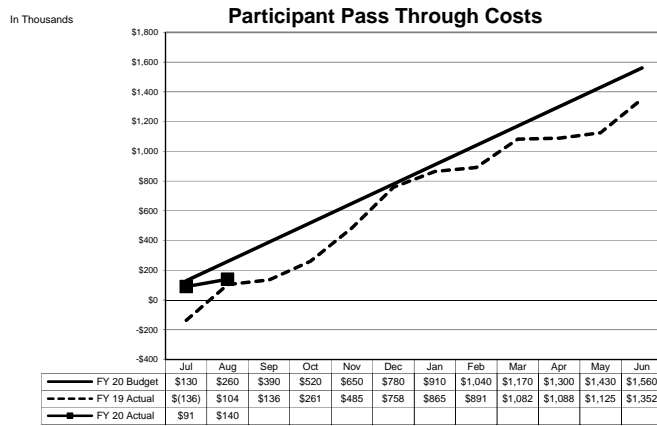
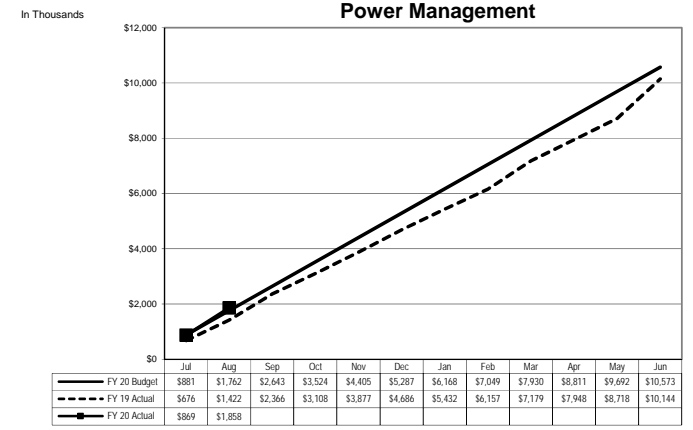
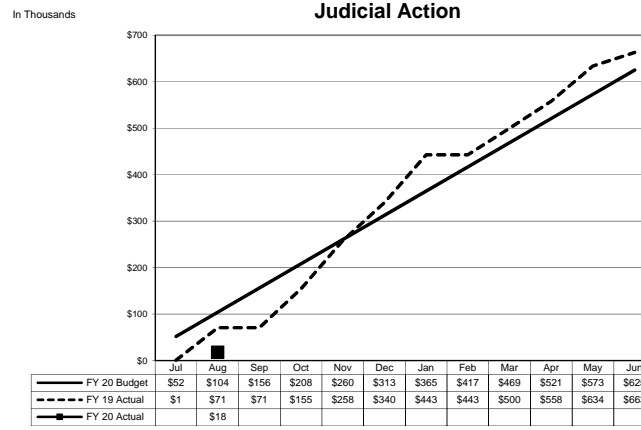
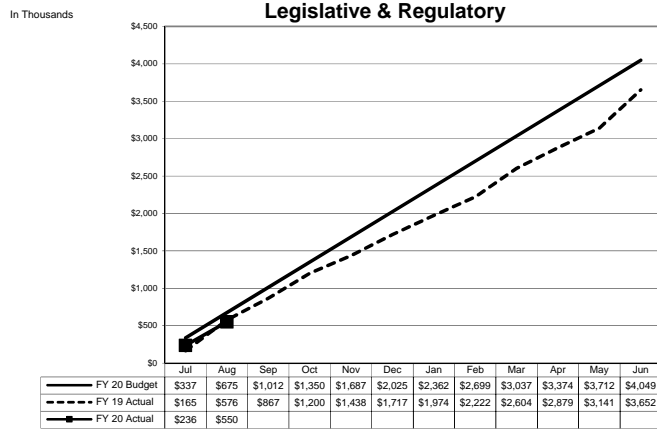
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

**Annual Budget Cost
Generation Resources Analysis By Source
As of August 31, 2019**



Footnote: Other Resources (Graeagle, BART PV, Gridley PV) are included in Market Power Purchases

**Annual Budget Cost
Management Services Analysis By Source
As of August 31, 2019**

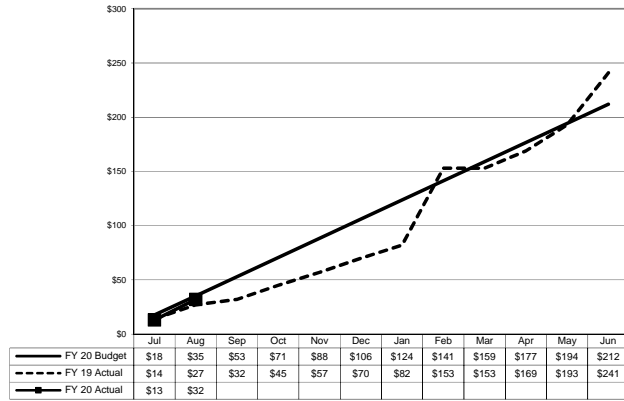


**Annual Budget Cost
Management Services Analysis By Source
As of August 31, 2019**

In Thousands

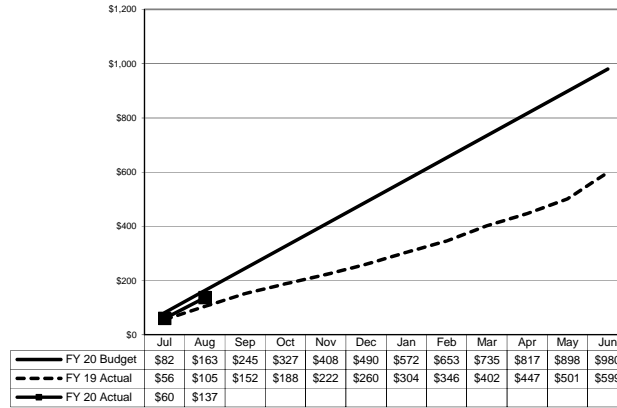
Energy Risk Management

In Thousands

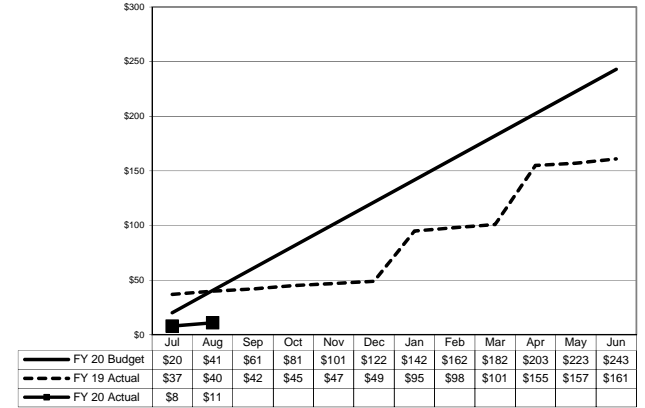


Settlements

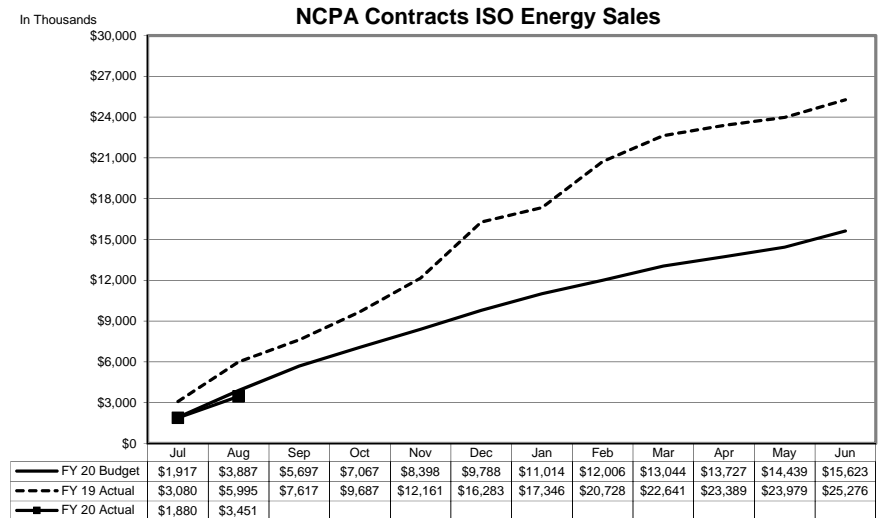
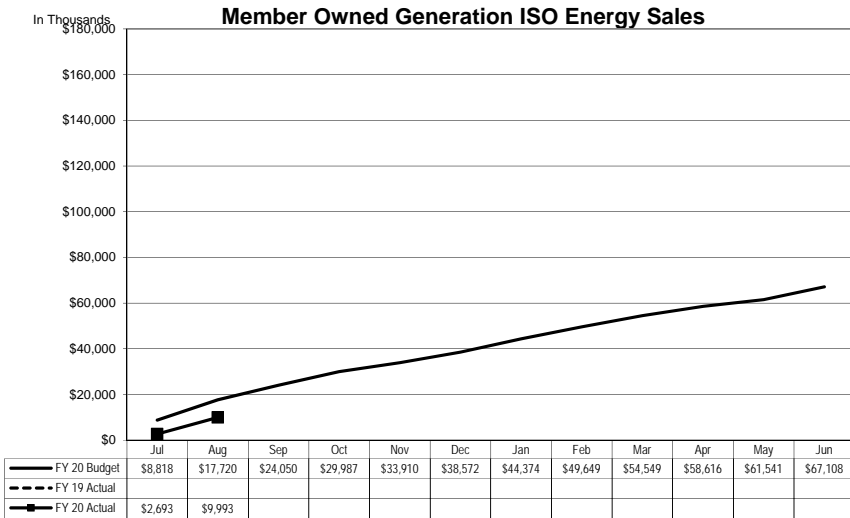
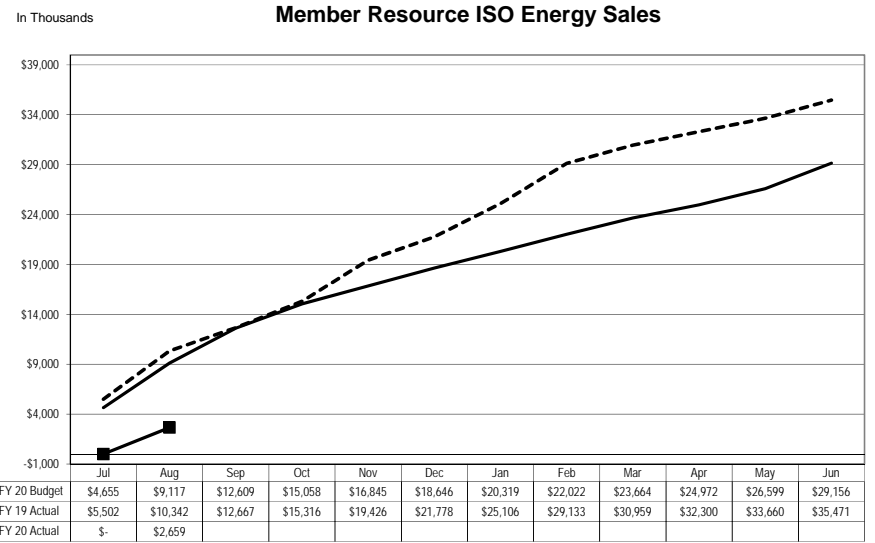
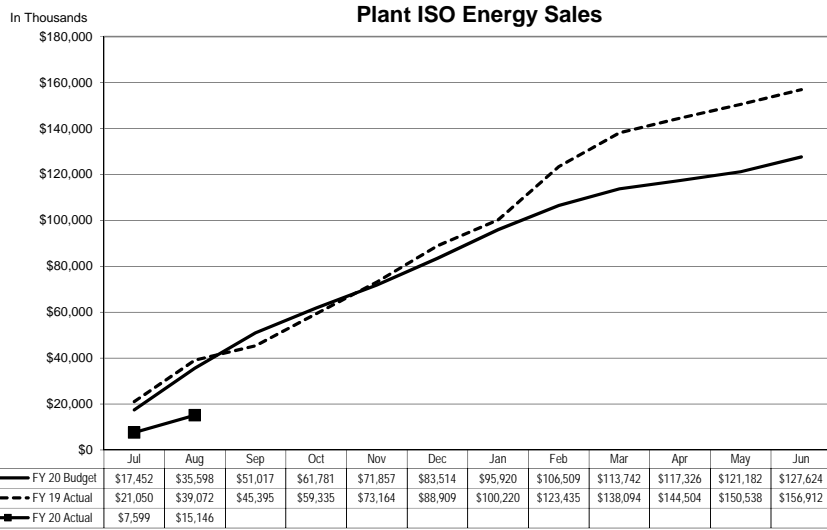
In Thousands



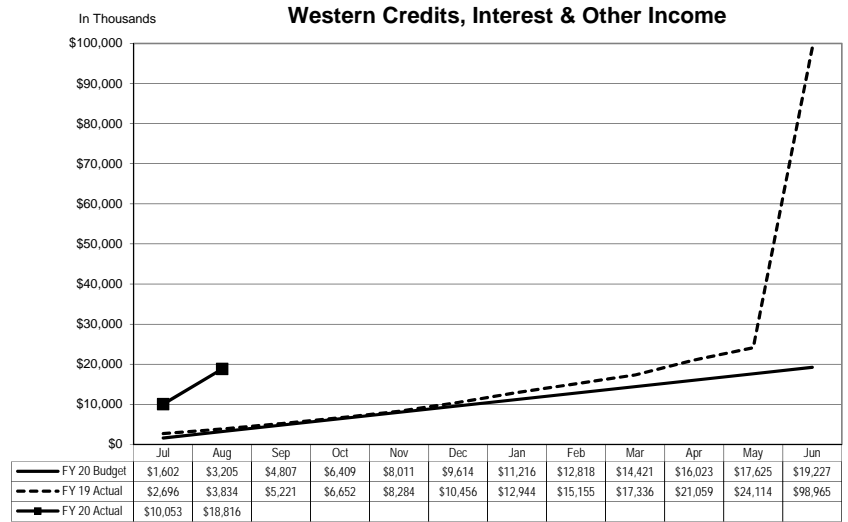
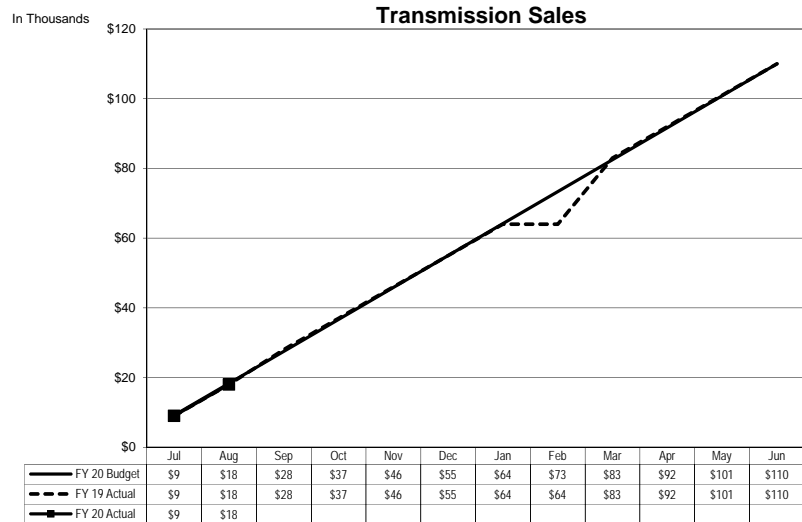
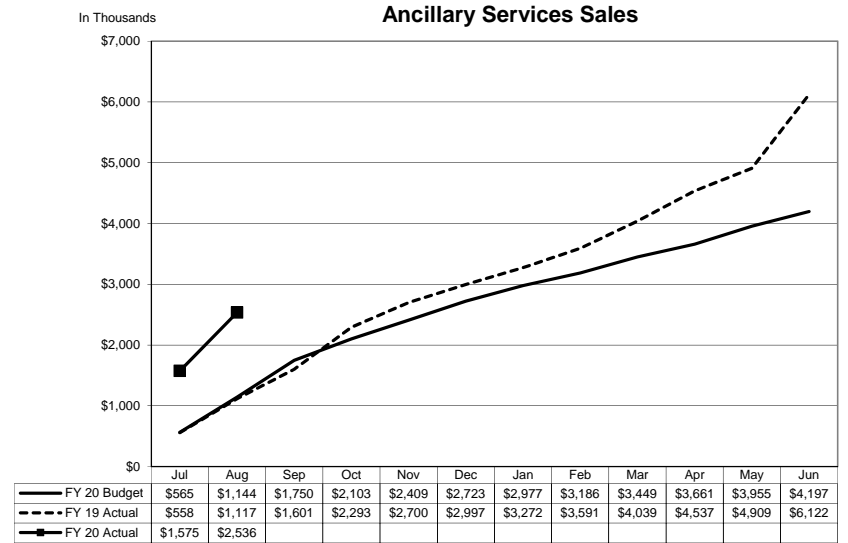
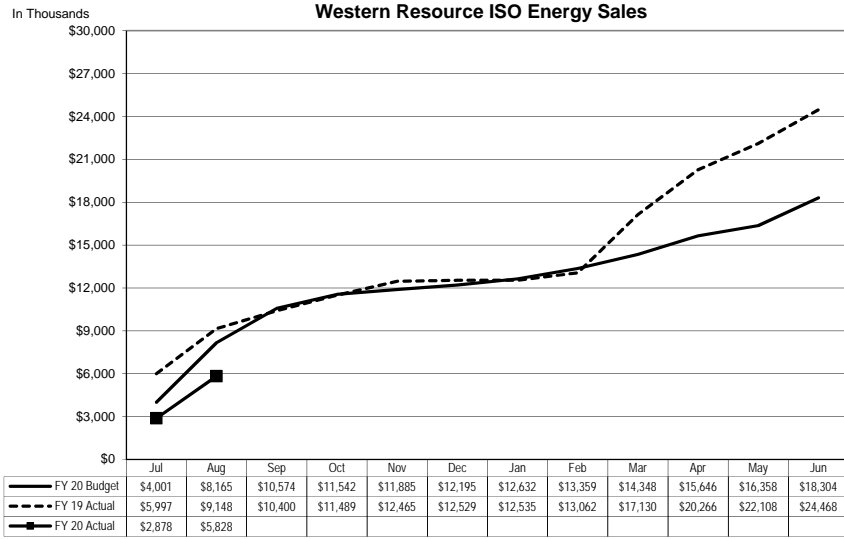
Integrated Systems Support



**Annual Budget Cost
Third Party Revenue Analysis By Source
As of August 31, 2019**



**Annual Budget Cost
Third Party Revenue Analysis By Source
As of August 31, 2019**



**Annual Budget
NCPA Generation Detail Analysis By Plant
As of August 31, 2019**

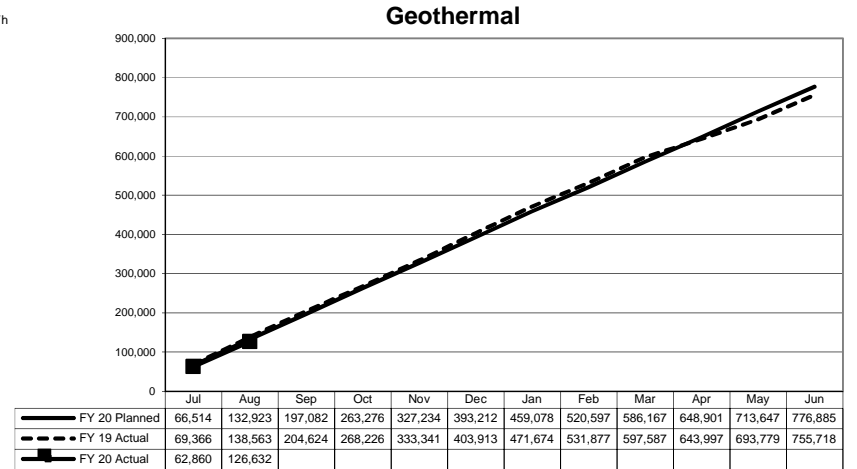
Generation Cost Analysis

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 18,456	\$ 3,091	\$ 24.41	\$ 15,365	83%
Capital Assets/Spare Parts Inventories	3,645	510	4.03	3,135	86%
Other Costs	7,640	1,290	10.19	6,349	83%
CA ISO Charges	625	116	0.91	509	81%
Debt Service	4,946	824	6.51	4,121	83%
Annual Budget	35,311	5,832	46.05	29,479	83%
Less: Third Party Revenue					
Interest Income	382	47	0.37	335	88%
ISO Energy Sales	29,481	4,124	32.57	25,357	86%
Ancillary Services Sales	-	-	-	-	-
Effluent Revenues	750	6	0.05	744	99%
Misc	110	19	0.15	92	83%
	30,723	4,196	33.14	26,527	86%
Net Annual Budget Cost to Participants	\$ 4,588	\$ 1,636	\$ 12.92	\$ 2,952	64%
Net Generation--MWh @ Meter	776,885	126,632			
\$/MWh (A)	\$ (0.46)	\$ 6.41			

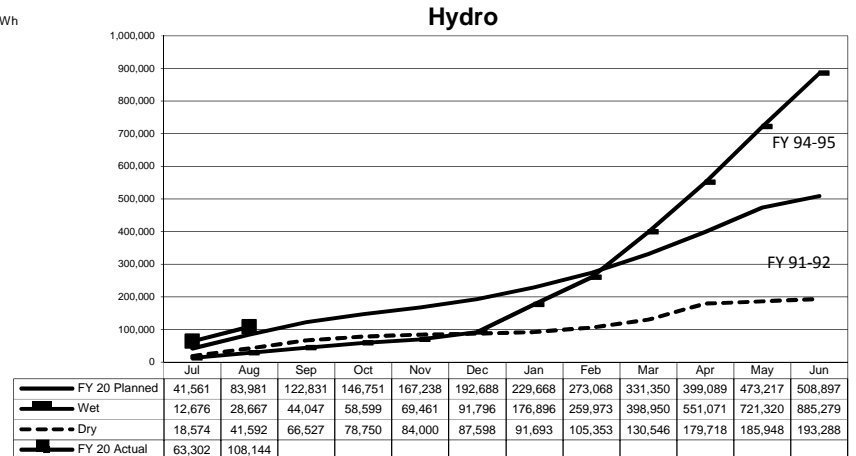
MWhs Generated

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 450	\$ 1,048	\$ 9.69	\$ (598)	-133%
Capital Assets/Spare Parts Inventories	4,775	900	8.32	3,875	81%
Other Costs	12,078	556	5.14	11,522	95%
CA ISO Charges	3,465	526	4.87	2,938	85%
Debt Service	33,307	5,551	51.33	27,756	83%
Annual Budget	54,074	8,581	79.35	45,493	84%
Less: Third Party Revenue					
Interest Income	670	61	0.56	609	91%
ISO Energy Sales	23,455	2,829	26.16	20,626	88%
Ancillary Services Sales	2,539	2,241	20.72	299	12%
Misc	-	-	-	-	-
	26,664	5,131	47.44	21,534	81%
Net Annual Budget Cost to Participants	\$ 27,410	\$ 3,451	\$ 31.91	\$ 23,959	
Net Generation--MWh @ Meter	508,897	108,144			
\$/MWh (A)	\$ (11.59)	\$ (19.42)			

In MWh



Footnotes:

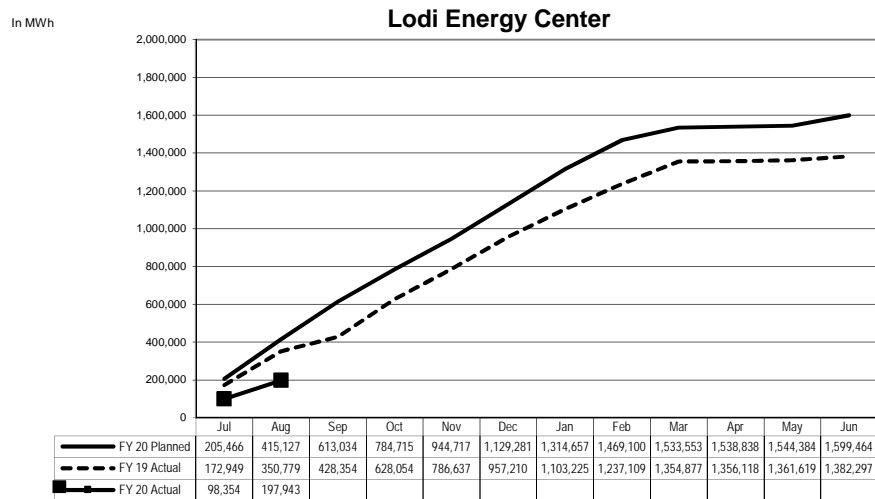
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

**Annual Budget
NCPA Generation Detail Analysis By Plant
As of August 31, 2019**

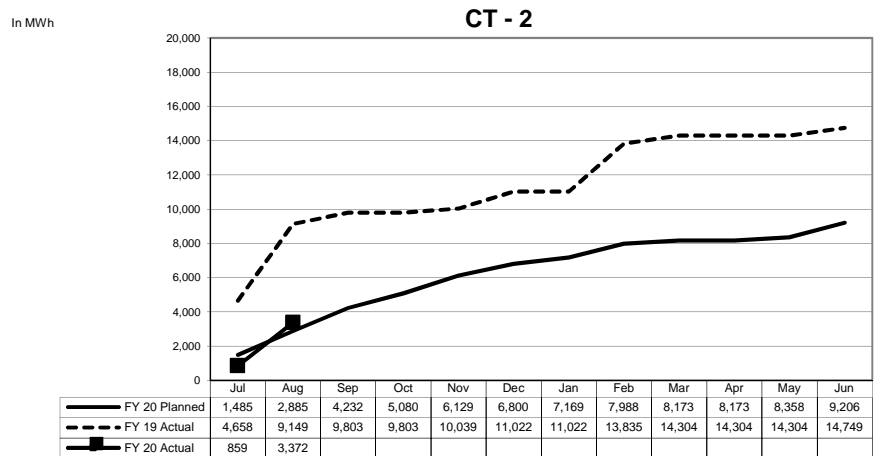
Generation Cost Analysis

	Lodi Energy Center				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 14,101	\$ 1,801	\$ 9.10	\$ 12,299	87%
Fuel	39,513	4,291	21.68	35,222	89%
AB 32 GHG Offset	-	-	-	-	0%
CA ISO Charges and Energy Purchases	4,710	299	1.51	4,411	94%
Capital Assets/Spare Parts Inventories	5,333	249	1.26	5,083	95%
Other Costs	3,249	451	2.28	2,798	86%
Debt Service	26,054	4,342	21.94	21,712	83%
Annual Budget	92,960	11,435	57.77	81,526	88%
Less: Third Party Revenue					
Interest Income	386	100	0.51	286	74%
ISO Energy Sales	72,603	7,793	39.37	64,810	89%
Ancillary Services Sales	1,433	173	0.87	1,259	88%
Transfer Gas Credit	-	-	-	-	0%
Misc	-	-	-	-	0%
	74,421	8,066	40.75	66,355	89%
Net Annual Budget Cost to Participants	\$ 18,539	\$ 3,369	\$ 17.02	\$ 15,171	82%
Net Generation--MWh @ Meter	1,599,464	197,943			
\$/MWh (A)	\$ (4.70)	\$ (4.92)			

MWhs Generated



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,595	\$ 234	\$ 69.51	\$ 1,361	85%
Fuel and Pipeline Transport Charges	1,089	106	31.52	983	90%
Capital Assets/Spare Parts Inventories	418	58	17.30	360	86%
Other Costs	486	82	24.41	404	83%
CA ISO Charges	53	5	1.34	49	92%
Debt Service	5,796	966	286.50	4,830	83%
Annual Budget	9,438	1,452	430.56	7,987	85%
Less: Third Party Revenue					
Interest Income	109	20	5.93	89	82%
ISO Energy Sales	819	195	57.68	625	76%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	1,687	327	96.92	1,360	81%
Misc	-	-	-	-	0%
	2,615	541	160.53	2,074	79%
Net Annual Budget Cost to Participants	\$ 6,823	\$ 911	\$ 270.04	\$ 5,913	87%
Net Generation--MWh @ Meter	9,206	3,372			
\$/MWh (A)	\$ 111.53	\$ (16.46)			



Footnotes:

(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

**Annual Budget
NCPA Generation Detail Analysis By Plant
As of August 31, 2019**

Generation Cost Analysis

	Combustion Turbine No. 1				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 2,268	\$ 281	\$ 289.28	\$ 1,987	88%
Fuel and Pipeline Transport Charges	975	66	67.75	909	93%
Capital Assets/Spare Parts Inventories	2,110	(291)	(299.29)	2,401	114%
Other Costs	747	132	136.36	614	82%
CA ISO Charges	69	72	74.61	(3)	-5%
Debt Service	-	-	-	-	-
Annual Budget	6,170	261	268.71	5,909	96%
Less: Third Party Revenue					
Interest Income	-	3		(3)	
ISO Energy Sales	1,266	205	211.31	1,061	84%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	-	-	-	0%
	1,266	208	211.31	1,058	84%
Net Annual Budget Cost to Participants	\$ 4,904	\$ 53	\$ 54.52	\$ 4,851	99%
Net Generation--MWh @ Meter	13,042	971			
\$/MWh (A)	\$ 375.97	\$ 54.52			

Footnotes:

(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

MWhs Generated

In MWh

CT - 1

