



Northern California Power Agency
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BUSINESS PROGRESS REPORT

2019

July

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Generation Costs & Reliability

Combustion Turbine Project

Unit Operation for June 2019

Unit	Availability		Production		Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	494.1 MWh	CAISO / CAISO
	100.0%	100.0%	Unit 2	285.8	
Curtailments, Outages, and Comments: 6/25/19, Alameda U1, ATT work on T-1, 1031-1133 OMS 7407020 (informational only, no de-rate) 6/25/19, Alameda U2, ATT work on T-1, 1031-1133 OMS 7407024 (informational only, no de-rate)					
Unit	Availability		Production		Reason for Run
CT1 Lodi	98.9%		110.4 MWh		CAISO
Curtailments, Outages, and Comments: 6/26/19, Lodi CT1 o/s for oil leak 0733 – 1354 OMS 7410134					
Unit	Availability		Production		Reason for Run
CT2 STIG	100.0%		431.3 MWh		CAISO
Curtailments, Outages, and Comments: 6/18/19, Lodi STIG unit de-rated to 44.0mw - chiller o/s thru 07/01/19 OMS 7363497					
Unit	Availability		Production		Reason for Run
LEC	100.0%		20,679 MWh		CAISO
Curtailments, Outages, and Comments: No Comment for LEC.					

Maintenance Summary – Specific per asset above.

Geothermal Facilities

Availability/Production for June 2019

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	100 %	19,604 MWh	U1 had no outages for the month
Unit 2	100 %	*17,516 MWh	U2 had no outages for the month
Unit 3	N/A %	N/A	Unit 3 remains out of service.
Unit 4	100 %	24,825 MWh	U4 had no outages for the month but was curtailed 8 MWs due to drill rig work on P site
Southeast Geysers Effluent Pipeline	100%	218.3 mgallons	Average flow rate: 4,841 gpm
Southeast Solar Plant	N/A	22,902 KWh	Year-to-date KWh: 2,559,233
Bear Canyon Pump Station Zero Solar	N/A	49,753 KWh	Year-to-date KWh: 3,383,321

* Accounts for an additional 2,052 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

Hydroelectric Project

Availability/Production for June 2019

Units	Availability	Net Electricity Generated	Out-of-Service
Collierville Unit 1	99.56 %	69,873 MWh	CV #1 unit was out of service on 6/13/19 at 1304 through 1422 due to a bearing oil level alarm. CV #1 unit was out of service on 6/26/19 at 1017 through 1208 due to a bearing oil level alarm.
Collierville Unit 2	100 %	71,139 MWh	CV #2 unit no reportable outages.
Spicer Unit 1	100 %	946 MWh	NSM #1 unit no reportable outages.
Spicer Unit 2	100 %	925 MWh	NSM #2 no reportable outages.
Spicer Unit 3	100 %	328 MWh	NSM #3 no reportable outages.

Operations & Maintenance Activities:

- CMMS work orders
- Vegetation management around transmission lines and campgrounds
- Tailwater Depression Pony Blower Installation and Testing
- Welding maintenance on spare Pelton runner
- Bi-monthly maintenance on Collierville Units
- Completed 95% of the painting on the CV intake tower
- NSM 48" Howell Bunger Valve (HBV) liner replacement
- Replaced cooling water pump #2 at CVPH

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

- One Cal OSHA Recordable and one vehicle accident occurred in June 2019; there were no Lost Time Accidents recorded. The vehicle accident occurred at Geo when an employee struck a deer while traveling to work. There were no injuries and less than \$3,000 in damages. The Cal OSHA Recordable occurred at Hydro at the Collierville powerhouse. An employee working on the gantry crane was stung multiple times by wasps. The day after the incident, the employee was taken to urgent care due to swelling, where he received a prescription for treatment.
- 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 June 22, 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.

June 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	3	333	1,538	6,606
Work Hours Since Last Recordable	170	71,000	228,447	2,405,372
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	4,272	1,401	9,442	5,535
Work Hours without LTA	389,067	287,975	668,991	2,027,390
Vehicle Incident (month)	0	1	0	0
Vehicle Incident (calendar year)	0	2	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 June 22, 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

	June 2019		Calendar Year 2019	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	470.07 6/11 @1700	198,726	470.07 6/11 @1700	1,126,924
SVP	587.78 6/11 @1600	313,448	587.78 6/11 @1600	1,810,513
MSSA	1052.58 6/11 @ 1700	512,174	1052.58 6/11 @ 1700	2,937,437

Last Year 2018 Data*

	June 2018		Calendar Year 2018	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	396.04 6/22 @ 1800	193,939	419.2 7/25 @1700	1,114,347
SVP	512.9 6/12 @ 1500	307,699	529.29 8/9 @1700	1,811,706
MSSA	906.27 6/22 @ 1800	501,638	945.44 8/9 @ 1700	2,926,053

*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	470.07 6/11 @ 1700
SVP	587.78 MW on 6/11/19 @ 1600	587.78 6/11 @ 1600
MSSA	1070.79 MW on 9/1/17 @ 1700	1052.58 6/11 @ 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.

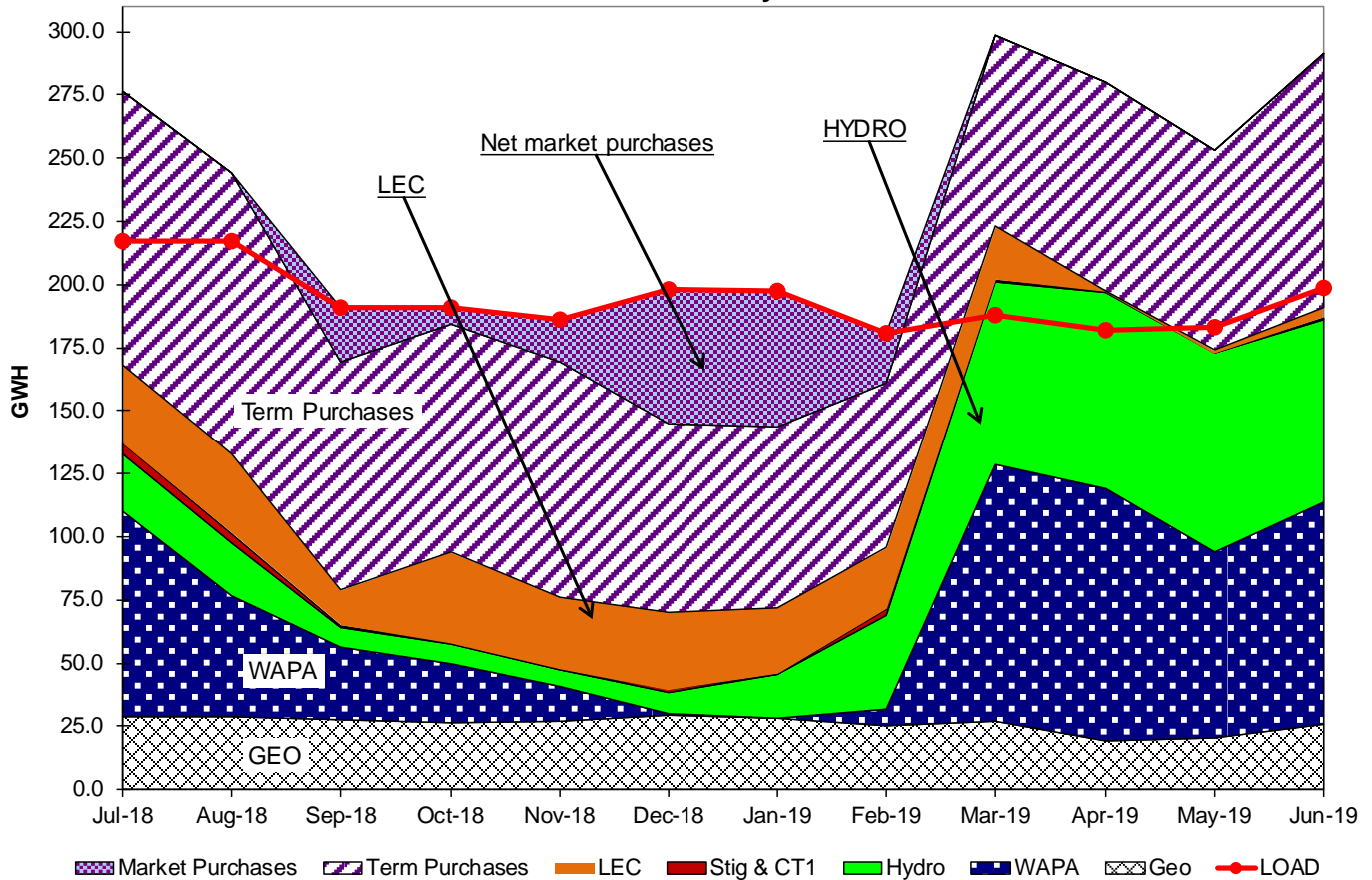
NCPA Deviation Band Performance		
	June 2019	Calendar Year 2019
MSSA % Within the Band	94.24%	95.35%

- Spicer spilling June 13 – 30
- McKay's spilling intermittently from June 1 - 21
- Spicer Meadows:
 - June 10 – 28, station draft limited to 30cfs due to 48" HBV outlet liner replacement project
- Geothermal Units:
 - June 3 - 30, Unit 4 derated to 34mw for P site well maintenance
- Lodi Energy Center:
 - June 10 @ 1400 - 1500, unit delayed going on ISO control due to trouble on start up
- Alameda CTs:
 - June 10 @ 1628 - 2000, Unit 2 out of service due instrumentation trouble
 - June 11 – 13, Unit 1 out of service due to compressor bleed valve trouble
 - June 17 @ 0430 – 0450, Unit 2 failed start due to bleed valve trouble
- Lodi CT:
 - June 26 @ 0733 – 1354, unit out of service due to load gear oil leak repair
- Collierville Units:
 - June 6 @ 1000 – 1145, units derated for intake trashrack cleaning
 - June 13 @ 1304 – 1422, Unit 1 o/s due to low bearing oil level
 - June 23 @ 1455 – 1720, units derated due to intake differential instrumentation trouble
 - June 26 @ 1000 – 1220, units derated for intake trashrack cleaning and intake differential instrumentation repair
 - June 26 @ 1017 – 1208, Unit 1 o/s for bearing oil level check
- STIG:
 - June 10 @ 0819, unit derated to 44mw due to inlet air chiller o/s, ETR 8/8
 - June 10 @ 1855 – June 11 @ 1100, unit o/s due to failed LP steam flow meter

Pooling, Portfolio Planning & Forecasting

- NCPA Pool load in June 2019 was 198,698 MWh, or 98.4% of the forecast. Mild temperatures continued to result in moderate demand, except during a brief spell between June 10 and 13. July 2019 Pool load through the 10th was 63,830 MWh, about 5% less than during the same period in 2018.
- Lodi Energy Center (LEC) operated for five days during June 2019, generating 1695 MWh for the Pool. Reduced production was partially due to above-normal hydro generation, mild weather and low power prices. Through July 10, 2019 LEC has generated 2,000 MWh for the Pool.
- During June 2019, 0.16" of rain was recorded at the Big Trees gage. Average June Big Trees precipitation is 0.72".
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) is reduced from \$60/MWh to \$40/MWh.
- NSMR storage as of June 30, 2019 was at 189,000 acre feet. The historical average NSMR storage at the end of June is 148,469 acre feet. As of July 15, 2019 NSMR storage is 184,055 acre feet. The current NCPA Pool share of NSMR storage is 93,831 acre feet.
- Combined Calaveras Project generation for the Pool in June 2019 totaled 72.2 GWh, slightly up from 78.8 GWh in May 2019. The Pool's 72.2 GWh in June 2019 was above the pre-month forecast of 64.1 GWh.
- Western Base Resource (BR) deliveries for the Pool in June 2019 were 88,268 MWh, including Displacement energy totaling 21,049 MWh. The amount delivered was 95% of the pre-month forecast, and through July 10, 2019 the pool has received 28,515 MWh, including 8,785 MWh from the Displacement program.
- The PG&E Citygate gas index averaged \$2.62/MMBtu for delivery on June 10, 2019, moving above the average PG&E gas price during June of \$2.515/MMBtu as temperatures turn warmer in California and across the country. Strong storage refill continued in June and early July. The July 2019 PG&E Bidweek price is \$2.74 per MMBtu, down 51.5 cents from June's \$3.255.
- Day-ahead NP15 electricity prices averaged \$25.02/MWh (HLH) and \$20.33 (LLH) during June 2019, with the hourly TH_NP15 maximum at \$134.51 on June 12 during the brief heat wave. Through early July 2019, daily maximums topped out much lower, at \$53.93/MWh for July 10th.

NCPA POOL RESOURCES FY 2019 Final: July - June Actual



NCPA Pool Loads & Resources Value Summary								
	Peak and Energy Summary Jun-19				Estimated Production Costs		Cost of Serving Demand	
	Coincident Peak (MW)	Total MWh	Forecast Values		NCPA Pool		Totals	Avg (\$/MWh)
			Avg. MW	Jun-11-19 Hour 17	Cost/Revenue (Estimate)	Variable Cost (\$/MWh)		
Demand	470.1	198,698	201,949	276.0	N/A	N/A	at Market Clearing Price	
WAPA	-	88,268	93,307	122.6	\$ 2,134,816	\$ 24.19	\$ 5,132,041	\$ 25.83
Geothermal	-	25,640	26,690	35.6	487,163	19.00		
Hydro	-	72,200	64,100	100.3	433,200	6.00		
Stig & CTs	-	775	-	1.1	39,524	50.99	at Variable Cost of Pool Generation	
LEC	-	3,719	8,541	5.2	140,543	37.79		
Contracts	-	100,878	99,637	140.1	5,590,748	55.42	\$ 6,016,555	\$ 30.28
Market - Net <small>(Net Sales - Negative)</small>	470.1	(92,782)	(90,326)	(128.9)	(2,263,385)	24.39		
Net Total	470.1	198,698	201,949	276.0	\$ 6,562,609	\$ 30.28		

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 6/1/2019 7/10/2019 (\$/MWh)		
Jul-18	197,935	\$ 63.64	\$ 52.34	Aug-19	\$ 67.28	\$ 49.09
Aug-18	211,074	\$ 55.31	\$ 44.06	Sep-19	49.07	40.89
Sep-18	191,121	\$ 35.51	\$ 51.48	Oct-19	44.62	37.97
Oct-18	190,756	\$ 45.30	\$ 46.39	Q3 2019	\$ 58.52	\$ 41.65
Nov-18	186,329	\$ 55.00	\$ 50.16	Q4 2019	46.44	39.88
Dec-18	197,935	\$ 57.27	\$ 48.12	Q1 2020	44.74	37.88
Jan-19	197,652	\$ 42.93	\$ 45.13	CY2020	\$ 42.57	\$ 37.09
Feb-19	180,866	\$ 79.12	\$ 41.57	CY2021	45.39	39.43
Mar-19	187,890	\$ 39.02	\$ 24.83	CY2022	46.66	40.06
Apr-19	178,692	\$ 24.88	\$ 28.55	CY2023	47.26	40.86
May-19	183,123	\$ 20.05	\$ 32.01	CY2024	47.96	39.77
Jun-19	198,698	\$ 25.83	\$ 30.28	CY2025	48.88	39.60

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 September 2019:
 - Monthly System Resource Adequacy Demonstration (filed July 18, 2019)
 - Monthly Supply Plan (filed July 18, 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

- 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 and replacing 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.
- NCPA is skeptical that all these changes are required and will be less complicated than the current RA program. NCPA is also concerned that these proposals will not address CAISO's stated issues of lack of RA showing above 115% and import unavailability due to Must Offer Obligations discouraging the former and lack of bid caps enabling the latter. NCPA will focus on working with CAISO to convince them that a Load Following MSS has sufficient incentive to meet demand with sufficient supply in real time due to the LFMSS Dispatch Operating Point Deviation penalty and therefore be exempt from such requirements. CAISO proposes to release changes for 2022 RA Year.
- NCPA staff attended a two day working group scheduled for July 8th and 9th.

Day-Ahead Market Enhancements

- The Day-Ahead Market Enhancements initiative has been scaled down to Phase 2 being that Phase 1 (15-minute granularity) is currently deemed infeasible and has been deferred. This is a serious blow to the Extending Day Ahead Market to Energy Imbalance Market initiative but those feasibility tests are still ongoing.
- DAME Phase 2 will address uncertainty issues associated forecast errors from Day Ahead to Real time by introducing a Day Ahead Flexible Ramping Product. Units will be forced to bid FRP in at \$0 so costs and revenues associated with the product should be minimal. The CAISO also proposes to re-optimize Ancillary Services in the RTM in order to address undeliverable capacity. These features are scheduled to be released in 2021.

- NCPA is generally in support of the proposals but is concerned that the timelines are too aggressive for such major overhauls and expressed such concerns in stakeholder comments.
- NCPA staff will attend a technical workshop on June 20th.

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.

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)	Restoration Fund (\$)	Monthly Cost of BR ² (\$/MWh)	CAISO LMP Differential ³ (\$/MWh)	12-Mo Rolling Avg. Cost of BR ⁴ (\$/MWh)
Jul-18	82,704	81,285	(1,419)	\$1,516,215	\$ 18.65	\$ 0.52	\$ 29.90
Aug-18	69,979	47,727	(22,252)	\$1,516,215	\$ 31.77	\$ (0.76)	\$ 30.07
Sep-18	59,937	28,828	(31,109)	\$2,124,730	\$ 73.70	\$ 0.03	\$ 32.14
Oct-18	57,294	23,113	(34,181)	\$1,170,723	\$ 50.65	\$ 0.16	\$ 33.95
Nov-18	29,042	13,824	(15,218)	\$1,170,723	\$ 84.69	\$ 0.18	\$ 35.33
Dec-18	16,349	960	(15,389)	\$1,170,723	\$ 1,219.50	\$ 0.34	\$ 37.64
Jan-19	20,572	-	(20,572)	\$562,206	\$ 27.33	\$ -	\$ 36.37
Feb-19	37,432	7,063	(30,369)	\$995,254	\$ 140.91	\$ 0.05	\$ 37.73
Mar-19	56,569	101,222	44,653	\$1,170,720	\$ 11.57	\$ 0.04	\$ 31.97
Apr-19	61,300	110,510	49,210	\$2,134,816	\$ 19.32	\$ 1.25	\$ 28.75
May-19	86,402	73,341	(13,061)	\$2,134,816	\$ 29.11	\$ 0.10	\$ 29.84
Jun-19	83,927	88,268	4,341	\$2,134,816	\$ 24.19	\$ (0.02)	\$ 30.14

1/ As forecasted in NCPA 18/19 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 88,268 MWh Base Resource (BR) energy in June 2019. This includes 21,049 MWh of Displacement energy for an estimated savings of \$116,000, or about \$5.50/MWh.
- Pool Members' total savings under Market Efficiency Enhancement Agreement (MEEA) pricing cost Pool Members approximately \$1,000 in June 2019. The net negative saving was due to lower congestion prices for import at COTP and PACI.
- Pursuant to the Western Base Resource contract, NCPA is required (on behalf of the assigning members) to file a structured Integrated Resource Plan (IRP) with Western every five (5) calendar years, and is subsequently required to file an update to the IRP each year. NCPA filed the five year IRP last year and an annual update is due this year, on July 1, 2019. NCPA recently filed the annual update with Western prior to the deadline. The annual update was accepted by approved by Western.

Western Base Resource Scheduling

- 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. WAPA and BOR will analyze the results for the first week of implementation and report to customers.

Interconnection Affairs

PG&E Update

Public Safety Power Shut Off (PSPS) Program

- PG&E attended the June UD meeting and provided a second update to their PSPS program. The main takeaway from this meeting was NCPA Dispatch will be contacted first by PG&E's Grid Control Center and be notified of potential/actual PSPS events.
- PG&E agreed to draft a PSPS communication document for NCPA members. Members provided PG&E with contact information and data (how many customers, hospitals, first responders, population, etc.).
- PG&E will follow-up with members regarding mutual aid during restoration. When the communications procedure and mutual aid is finalized, members requested a drill to ensure coordination and preparedness.

FERC Order 890 Case

- Although the ruling of this case was not in NCPA's favor, FERC suggested and PG&E has agreed to put in place a stakeholder process for projects which PG&E self approves and does not go thru ISO's Transmission Planning Process. PG&E calls their process the Transmission Asset Management Planning Process (TAMPP). This process is its design stage right now, NCPA and the joint interveners

continue to have meetings and talks with PG&E to make the process available as soon as possible.

- During the TAMPP to a certain extent NCPA might be able to influence member specific projects. If a member has a project, modification, or upgrade in mind that can potentially benefit their system, please let the Power Management Team know.
- Southern California Edison (SCE) hosted its first Transmission Maintenance and Compliance Review (TMCR) meeting on May 29th. NCPA filed comments on June 26th stating the information/data provided is insufficient and does not allow for a transparent process.

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.
- SCE is asking for 11.5% ROE in its 2018 rate case and SDG&E is asking for 11.2% in their TO-5 rate case. SCE in their new filing for their 2019 rate is asking for 17.12% ROE, the justification again is wildfire cost and mitigation. The main issue here is if any one utility is allowed a higher ROE it sets the precedence for other utilities. NCPA is actively monitoring and considering a more active role in SCE's rate case.

Cotenancy Agreement

- As a result of CDWR's intent to terminate its ownership share in the Cotenancy Agreement, PG&E provided a draft amendment to the Agreement for all parties to review.
- NCPA and Geo Project members are currently evaluating taking a pro-rata or full share of CDWR's entitlement.

ISO Update

Affected System Notice

- ISO has identified NCPA to be an effected system for thirteen projects (13) in the Cluster 11 interconnection queue. NCPA will evaluate any impacts and will respond to ISO by August 12, 2019.

Debt and Financial Management

- At the June 2019 Federal Reserve meeting (FOMC), the Fed left rates unchanged while signaling readiness **to cut them** if the economic outlook doesn't improve soon. Listed below are five key takeaways from the press conference:
 - **Chairman Jerome Powell sounds ready to cut rates.** The Fed chairman doesn't ever publicly reveal his interest-rate projection but a comment during his press conference led some Fed watchers to conclude that he was among the eight of 17 officials expecting to cut rates this year.
 - **A rate reduction could happen soon.** Mr. Powell said officials weren't ready to cut this week because they wanted to see if the recent escalation in trade tensions would persist. Analysts are estimating a 50 bps reduction at the July meeting.
 - **Monetary policy may not be the best tool to cushion against a trade slowdown, but that won't stop the Fed from using it.** Mr. Powell indirectly pushed back against commentators who have argued that the central bank shouldn't cushion any downturn from trade policy these commentators regard as ill-advised.
 - **Low inflation is a pressing concern.** In his May news conference, Mr. Powell pushed back against market expectations of a future rate cut by repeatedly citing soft first-quarter inflation readings as "transient," owing to idiosyncratic price drops that would later reverse.
 - **Who's afraid of full employment?** For years, Fed officials have argued that a declining unemployment rate required pre-emptive rate increases to prevent unwanted inflation pressures from building. Now, the unemployment rate is at 3.6%, a 49-year low, but inflation is running below the Fed's 2% target. As a result, officials have signaled less concern about the textbook relationships between tighter labor markets and rising inflation.
- PFM, on behalf of the Agency, released a Request for Proposal to refunding the outstanding debt of the Capital Facility project. The proposal was sent to over 20 underwriters and banks with responses due by the end of July. Staff will bring the results and recommendation to the Finance Committee in August.

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 August 2019 and anticipated go live in early 2020.

- TABS enhancement to enable PCWA's MFP1 SCID to schedule Inter-SC Trade successfully rolled out for July 1, 2019 trade date.
- The Risk Management app is ready for rollout to the CCA customers.
- Deal Manager app is being enhanced to enable members and customers access to a read-only view of the DCS3 Checkout. Rollout is anticipated for August 2019.
- Work continues to develop the replacement for the NCPA Automated Dispatch System. 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.

Network

- Progress continues to be made upgrading staff to Windows 10 with over 65% of the Agency on the new Operating System. The goal is to have all workstations moved over before the end of 2020.
- IS continues to work with Collabware to implement a records retention workflow strategy that will be incorporated into the Agency's SharePoint implementation. The software has been installed into a development environment and workflows are being tested using the Agency's adopted the retention schedule.
- The Ops and Support group has been working alongside Power Management and Settlements in preparation for the CAISO MSG market simulation later this summer. 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 staff has purchased new Fortinet firewalls to replace the off support Cisco ASA's that are used to protect Control Center ICS networks. Staff are signed up for training and plan to install this fall.

NCPA is collaborating with Veracity Industrial Networks on a potential multi-year project to assist in the testing and research for improved cybersecurity resiliency applied to Industrial Control Systems. This endeavor is dependent on approval by the DOE as part of a submitted project.

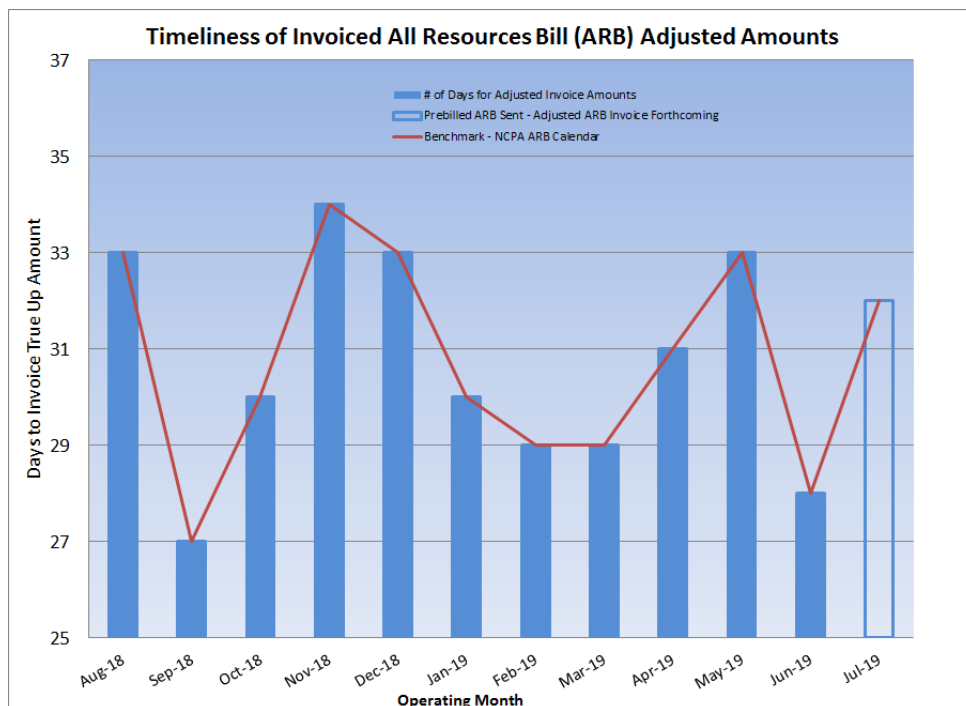
NCPA Bills & Settlements

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 July 2019 NCPA All Resources Bill (ARB) monthly invoice sent to members on June 25, 2019 contains:

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



Legislative & Regulatory

Political Arena State/Federal/Western Programs

- NCPA has been actively advocating on key legislation related to wildfires leading up to the State Legislature's Summer Recess, which will last until August 12th. NCPA worked with other publicly owned utility representatives to secure amendments to AB 1054, an omnibus wildfire bill that addresses issues affecting electric utilities. The amendments address concerns about regulatory jurisdiction linked to the review of utility wildfire mitigation plans. Upon return from Recess, legislators will have one final month of the session before they adjourn for the year.
- NCPA is in the process of planning its annual State Legislative Staff Tour, which is scheduled for July 29 – 31. The tour will feature stops in Redding, Shasta Lake, Portola, and Truckee where a group of roughly 30 legislative staffers (mostly from NCPA's member delegation and energy-related committees) will tour the Shasta Dam, members' communities, and local projects. We will be hosting a policy forum with participation from several NCPA member utilities and are looking forward to productive discussions with legislative staff on policy issues such as wildfires, resource procurement, and adapting to changing utility industry.
- WAPA released its final 2025 Central Valley Project base resource allocations on June 17, 2019. NCPA members collective share is 41.56 percent, less than one percent decrease from 2015 allocations. WAPA expects to release draft base resource contracts by late July, and NCPA's Federal Power Working Group will convene in August to review the terms and conditions, with a particular focus on termination provisions. Final contracts will need to be executed by July 2020.
- WAPA announced their plans to evaluate joining the CAISO's Western Energy Imbalance Market. NCPA is participating in those discussions to provide feedback before WAPA makes a final determination mid-August.
- Earlier this month, NCPA and a delegation of members participated in the American Public Power Association National Conference held in Austin, Texas. The annual conference offered insights from industry leaders and experts as well as excellent public power networking opportunities.

Human Resources

Hires:

Joel Ledesma joined NCPA on July 8, 2019 as Assistant General Manager, Generation Services. Joel brings over 30 years of experience in the electric utility operations and water supply operations industry, having most recently worked as the Deputy Director of the State Water Project. In addition Joel has a Bachelor of Science degree in Electrical Engineering from California State University, Sacramento.

Jesse Pulse joined NCPA on July 10, 2019 as an Operator Technician at our Geothermal Facilities in Middletown, CA. Jesse brings over 16 years of operations and

maintenance experience having most recently worked as an Operator Technician with Calpine Corporation.

Jack Lincoln joined NCPA on July 15, 2019 as the Federal Affairs and Member Programs Manager. Jack brings over five years of experience within the federal legislative field having most recently work as the Legislative Assistant to the Office of U.S. Congressman Doug LaMalfa. In addition, he has a keen awareness of the policy issues of importance to public power, and strong connections within our congressional delegation. Jack completed his undergraduate degree at Chico State University and holds a Master's Degree in Global Communications from George Washington University in Washington DC.

Intern Hires:

None.

Promotions/Position Changes:

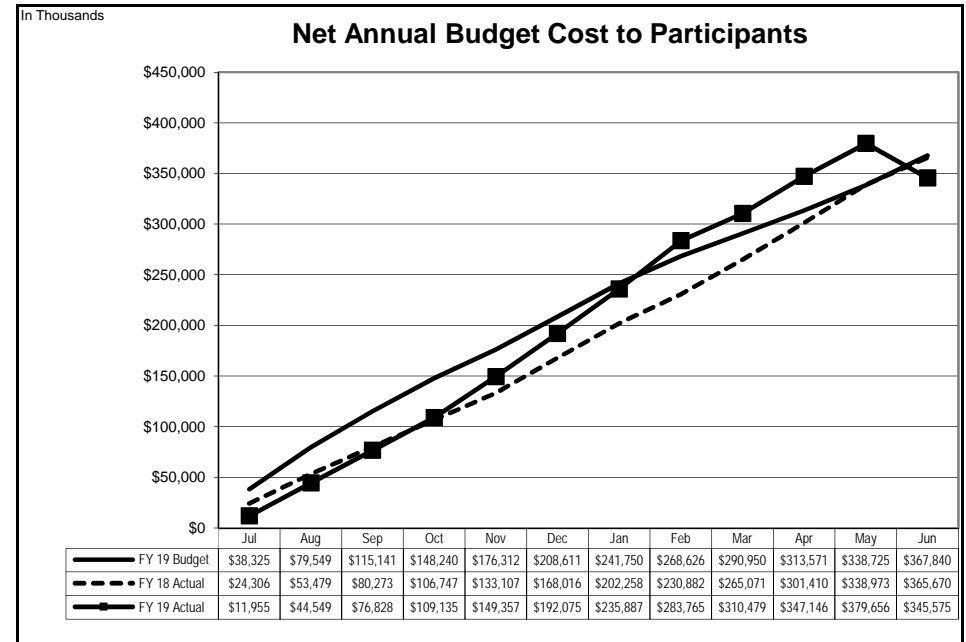
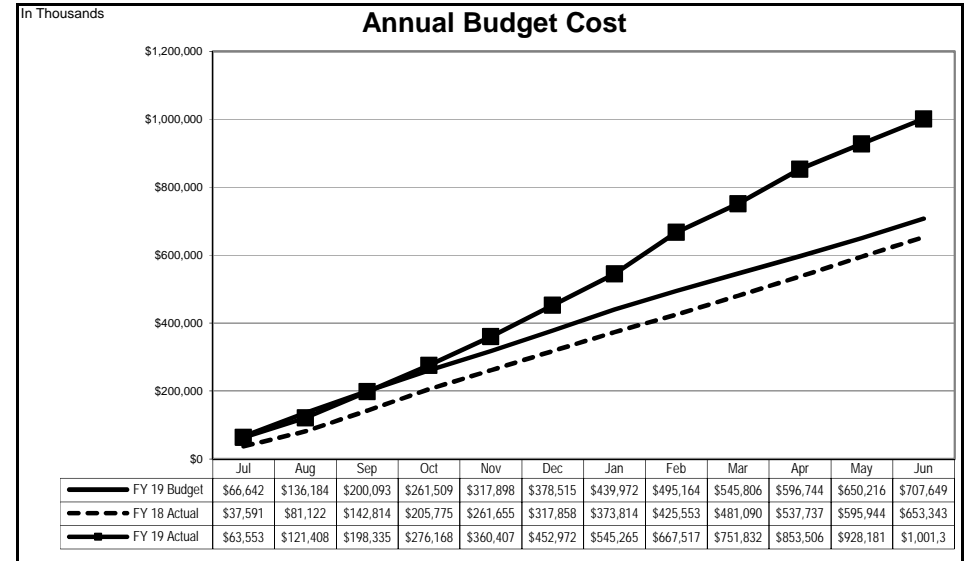
None.

Separations:

None.

Annual Budget 2018-2019 Fiscal Year To Date As of June 30, 2019

In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
GENERATION RESOURCES				
NCPA Plants				
Hydroelectric	51,857	51,254	\$ 603	1%
Geothermal Plant	34,425	35,849	(1,423)	-4%
Combustion Turbine No. 1	8,106	9,449	(1,344)	-17%
Combustion Turbine No. 2 (STIG)	8,743	9,513	(770)	-9%
Lodi Energy Center	83,717	96,529	(12,812)	-15%
	186,847	202,593	(15,746)	-8%
Member Resources - Energy	64,449	61,277	3,172	5%
Member Resources - Natural Gas	3,098	4,276	(1,178)	-38%
Western Resource	31,350	23,669	7,681	25%
Market Power Purchases	15,539	23,702	(8,163)	-53%
Load Aggregation Costs - ISO *	273,858	545,580	(271,722)	-99%
Net GHG Obligations	1,123	2,647	(1,524)	-136%
	576,264	863,745	(287,481)	-50%
TRANSMISSION				
Independent System Operator	112,822	119,864	(7,043)	-6%
MANAGEMENT SERVICES				
Legislative & Regulatory				
Legislative Representation	2,023	2,044	(21)	-1%
Regulatory Representation	887	688	198	22%
Western Representation	848	693	155	18%
Member Services	438	226	212	48%
	4,196	3,652	545	13%
Judicial Action	625	663	(38)	-6%
Power Management				
System Control & Load Dispatch	6,107	6,072	35	1%
Forecasting & Prescheduling	2,775	2,638	137	5%
Industry Restructuring	439	370	69	16%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,135	910	225	20%
Green Power Project	3	0	3	89%
Gas Purchase Program	78	67	11	14%
Market Purchase Project	112	87	25	22%
	10,649	10,144	505	5%
Energy Risk Management	260	241	19	7%
Settlements	941	599	342	36%
Integrated System Support	273	161	112	41%
Participant Pass Through Costs	1,619	1,352	267	17%
Support Services	-	915	(915)	
	18,563	17,726	837	5%
TOTAL ANNUAL BUDGET COST	707,649	1,001,335	(293,686)	-42%
LESS: THIRD PARTY REVENUE				
Plant ISO Energy Sales	100,456	156,912	(56,456)	-56%
Member Resource ISO Energy Sales	28,187	35,471	(7,285)	-26%
NCPA Contracts ISO Energy Sales	14,720	25,276	(10,556)	-72%
Western Resource ISO Energy Sales	23,183	24,468	(1,285)	-6%
Load Aggregation Energy Sales	131,329	308,436	(177,107)	-135%
Ancillary Services Sales	4,409	6,122	(1,713)	-39%
Transmission Sales	110	110	-	0%
Western Credits, Interest & Other Income	37,414	98,965	(61,551)	-165%
	339,808	655,760	(315,952)	-93%
NET ANNUAL BUDGET COST TO PARTICIPANTS	367,840	345,575	\$ 22,266	6%

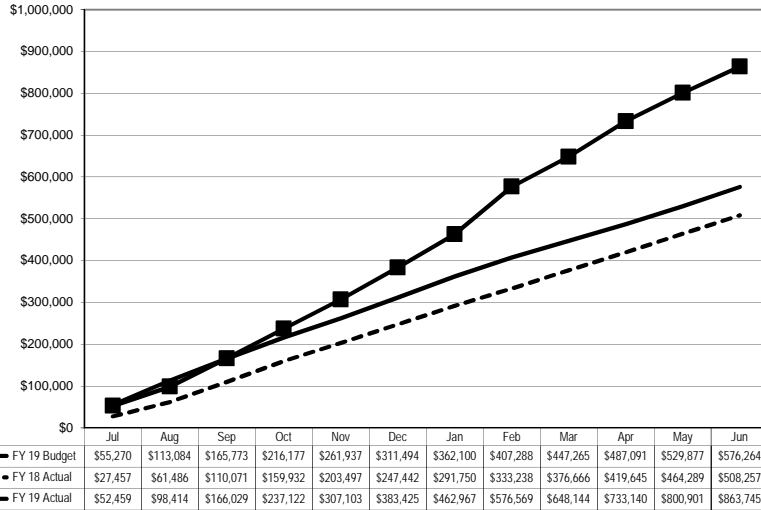


* Load Aggregation Costs - ISO adjusted to include year to date customer ISO Load Aggregation Costs (non-budgeted). Costs of \$76 million were incurred during the months of July 2018 through January 2019. Customer revenue (Other Income) adjusted in June 2019 to offset FY 2019 customer related net ISO costs and NCPA contract costs (non-budgeted).

Annual Budget Budget vs. Actual By Major Area As of June 30, 2019

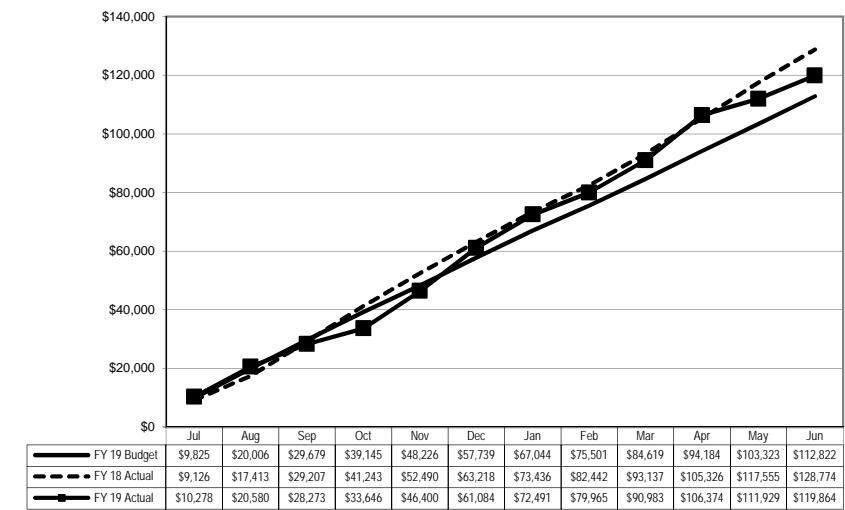
In Thousands

Generation Resources



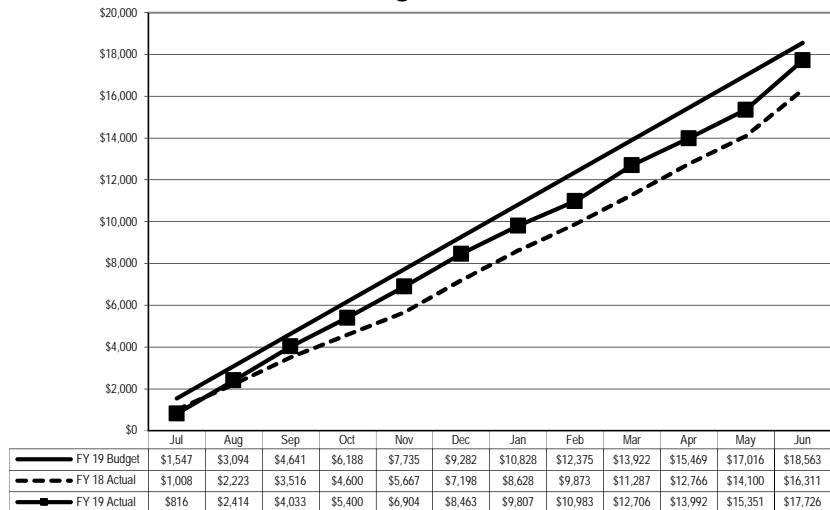
In Thousands

Transmission-ISO



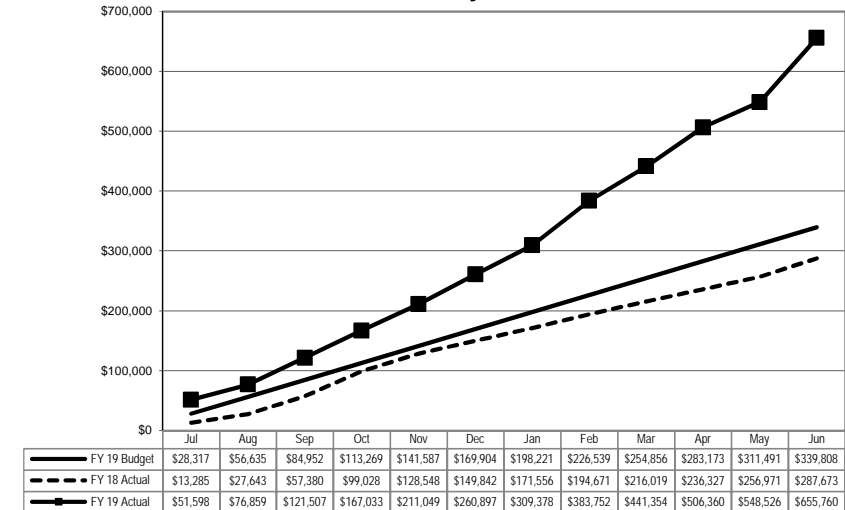
In Thousands

Management Services



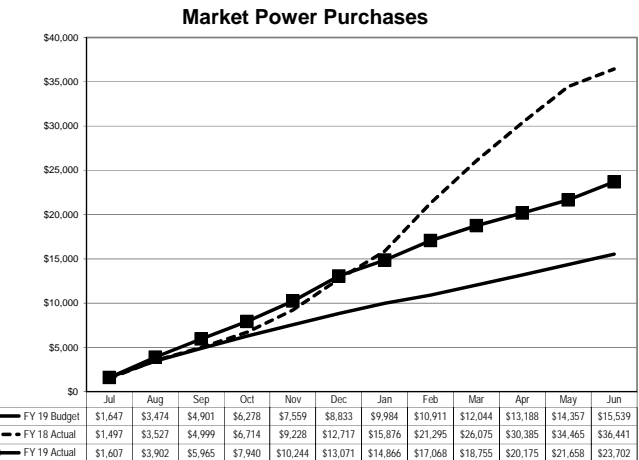
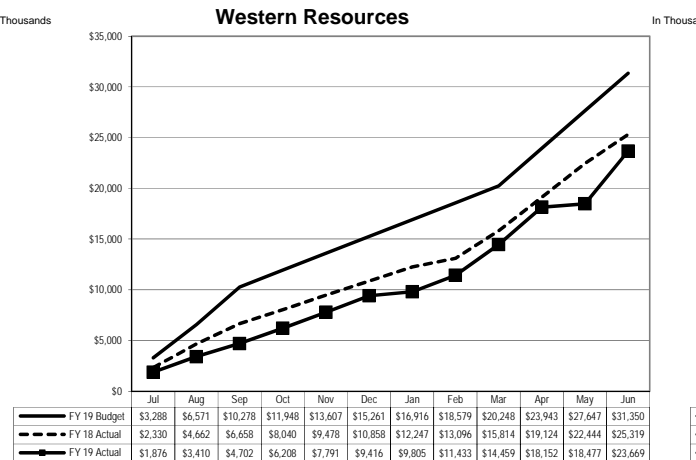
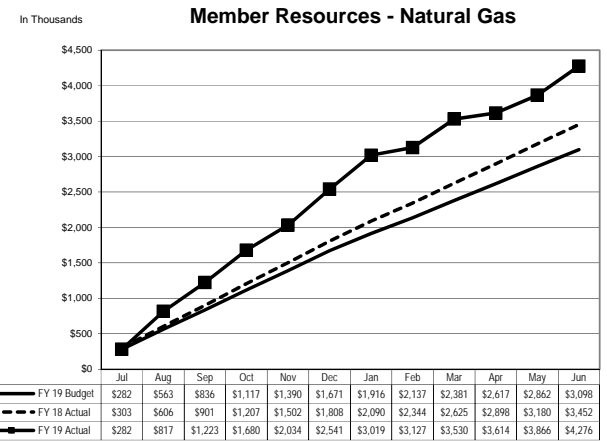
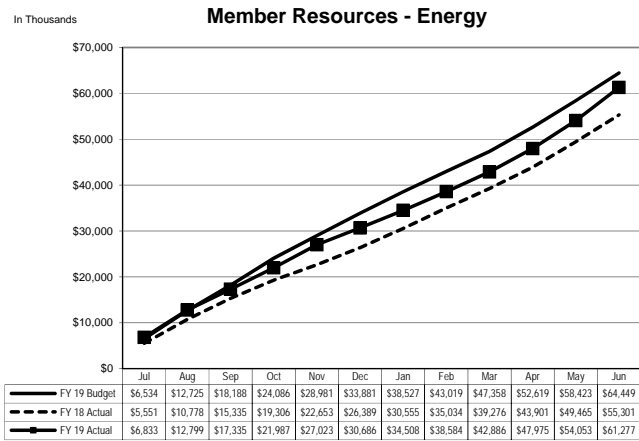
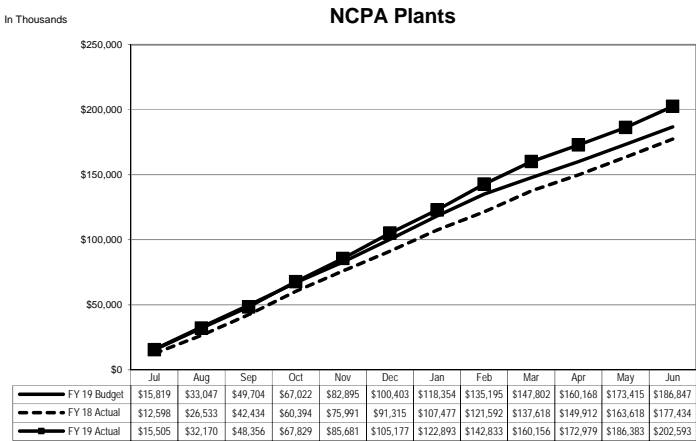
In Thousands

Third Party Revenue



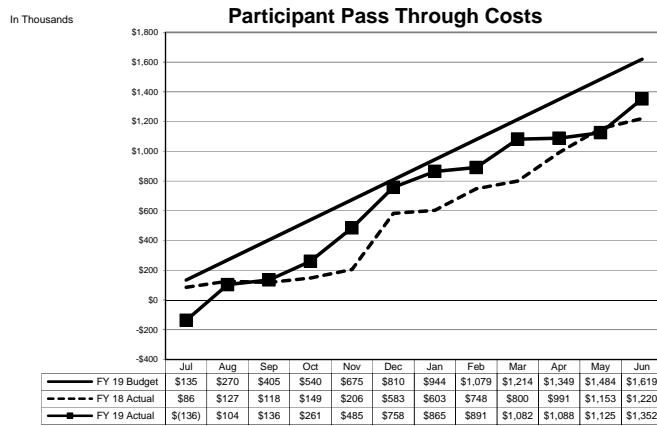
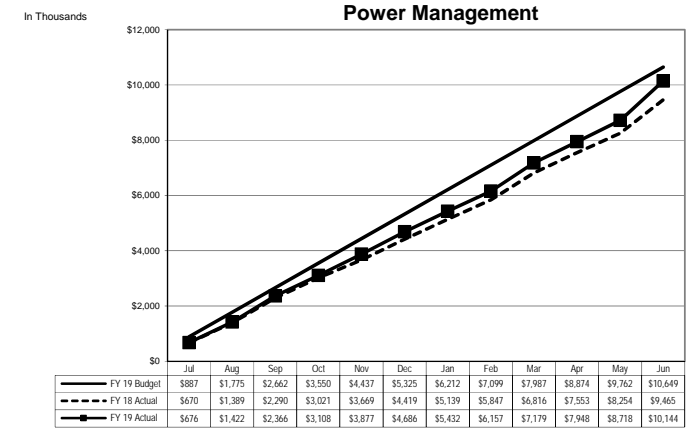
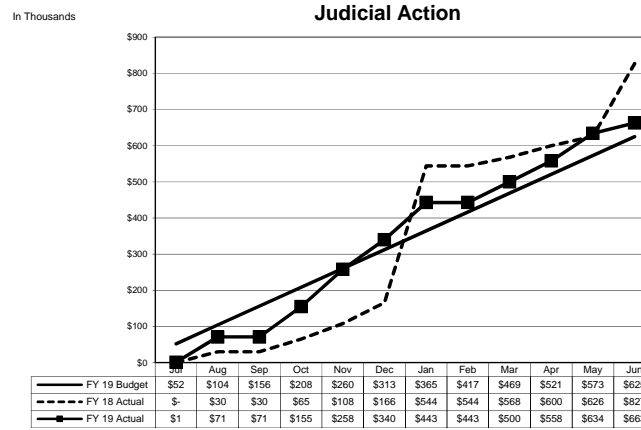
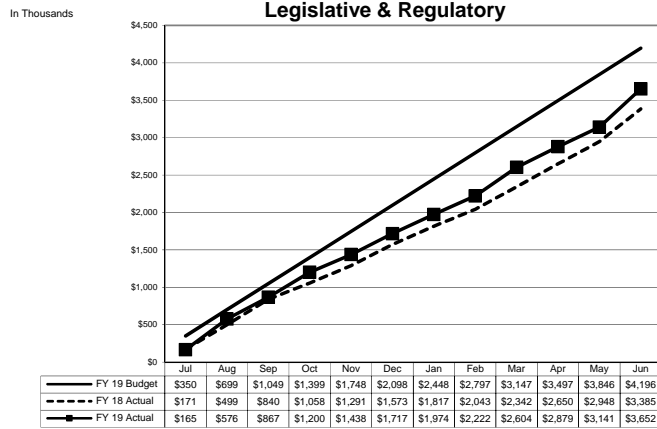
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

Annual Budget Cost Generation Resources Analysis By Source As of June 30, 2019



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

Annual Budget Cost Management Services Analysis By Source As of June 30, 2019

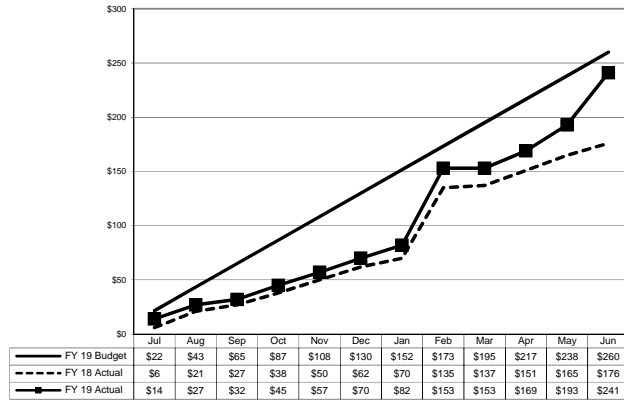


**Annual Budget Cost
Management Services Analysis By Source
As of June 30, 2019**

In Thousands

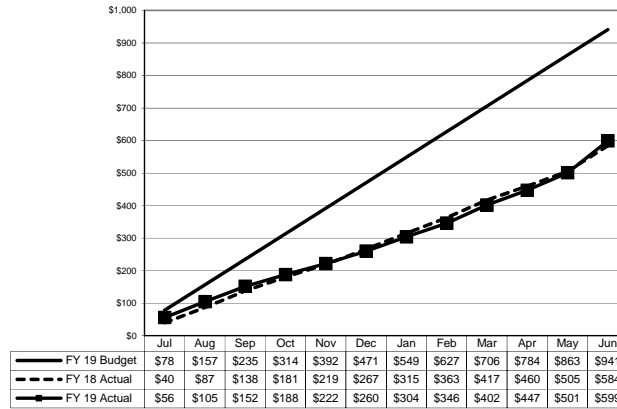
Energy Risk Management

In Thousands

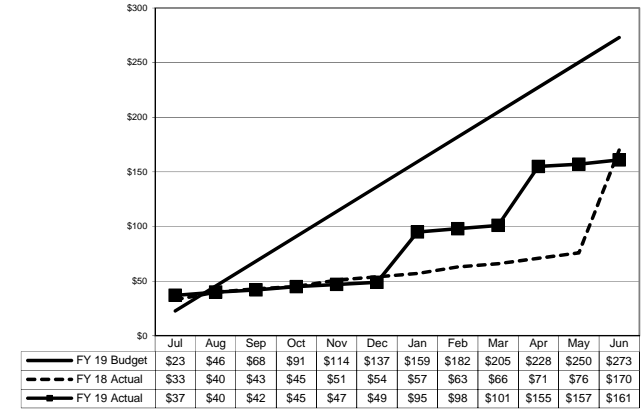


Settlements

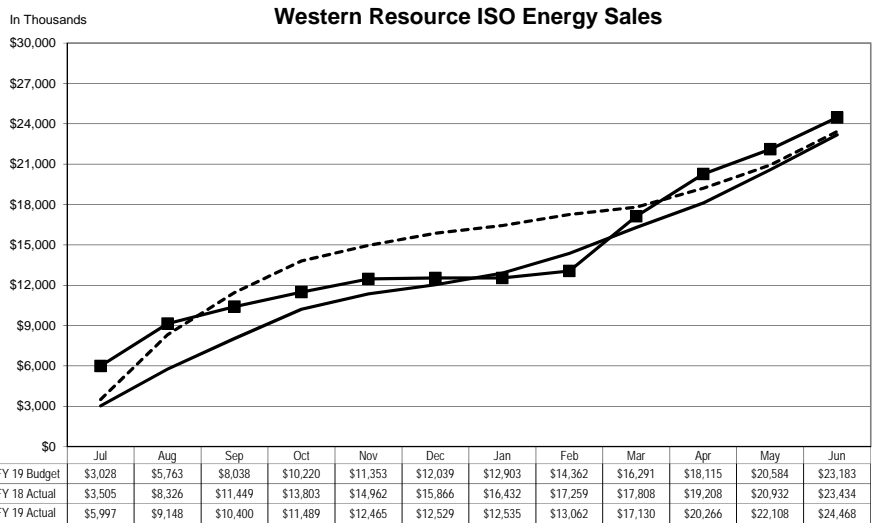
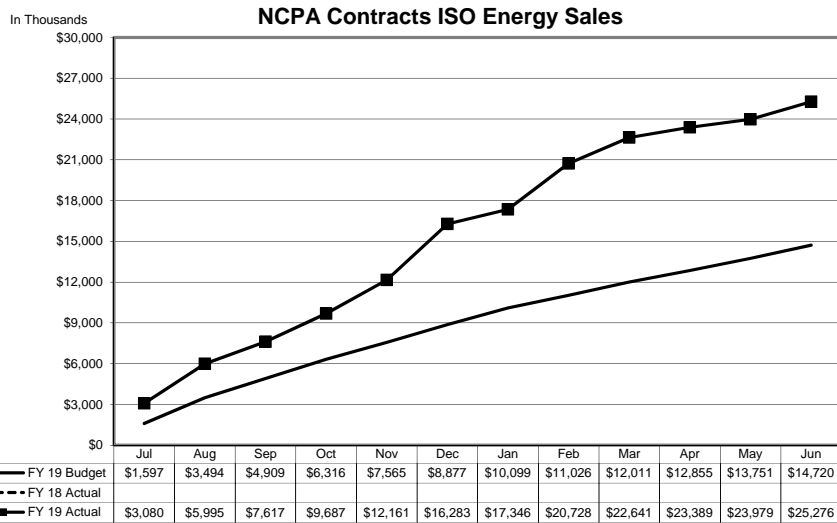
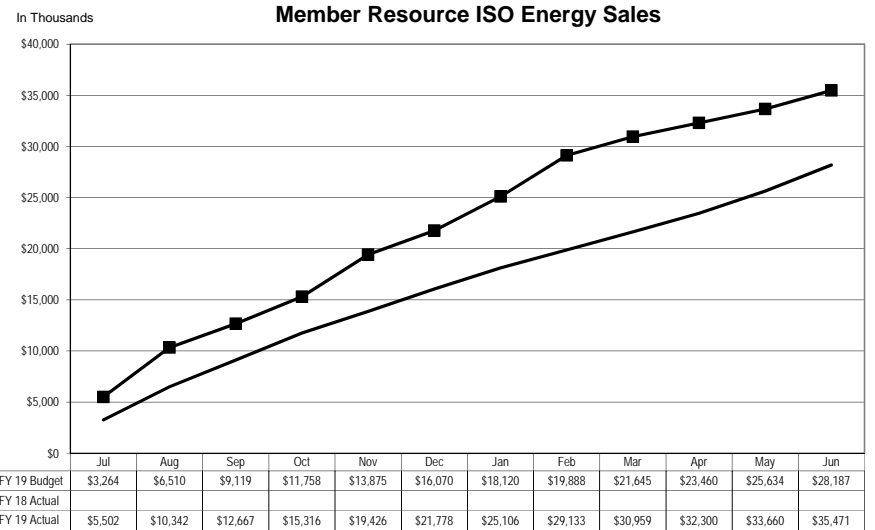
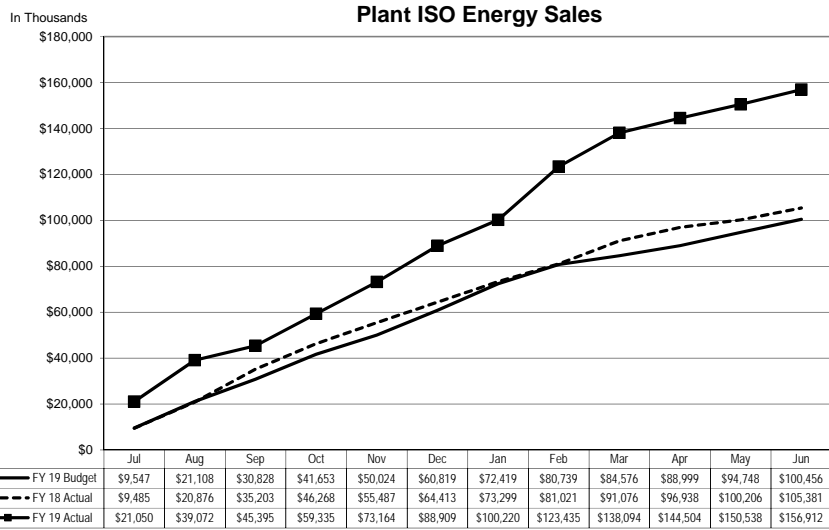
In Thousands



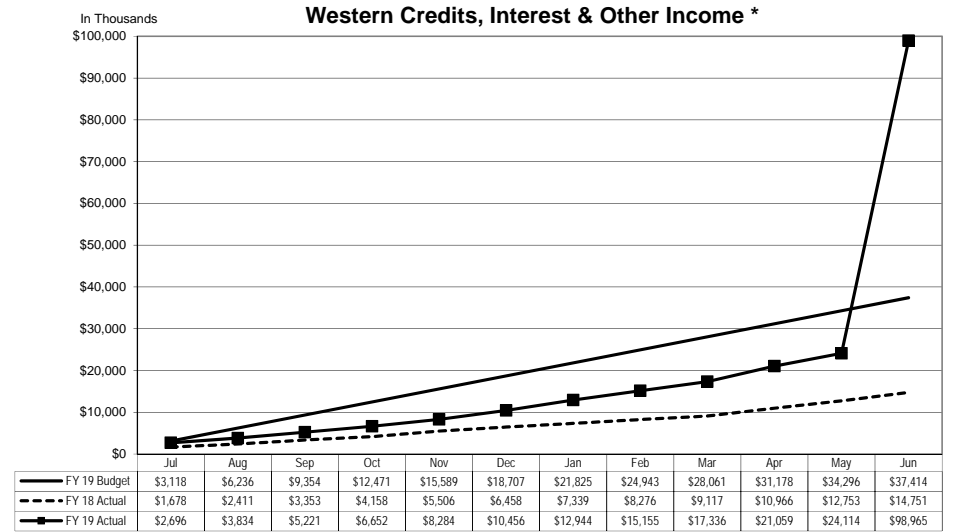
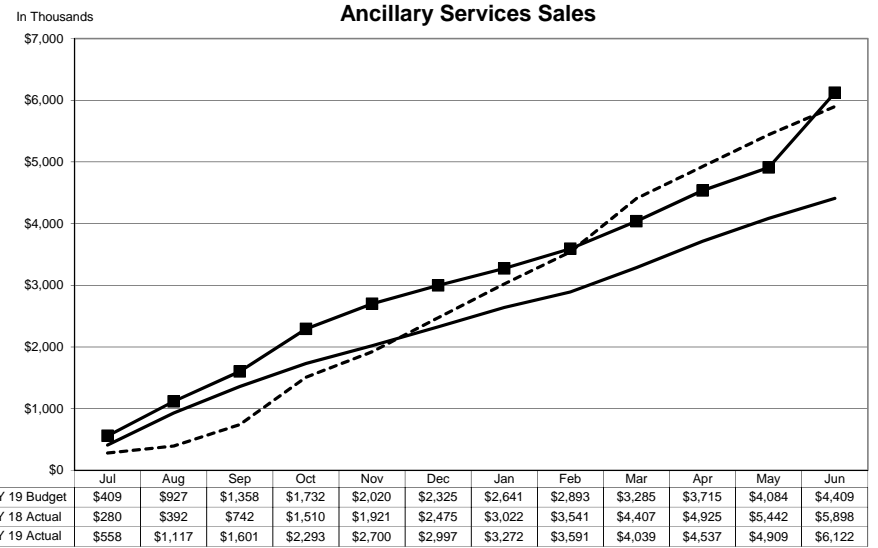
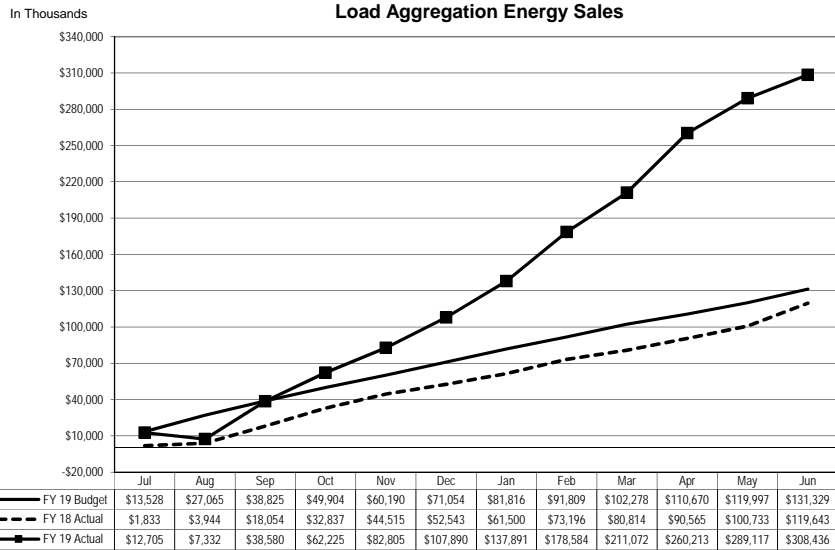
Integrated Systems Support



**Annual Budget Cost
Third Party Revenue Analysis By Source
As of June 30, 2019**



**Annual Budget Cost
Third Party Revenue Analysis By Source
As of June 30, 2019**



* Customer Revenue adjusted in June 2019 to offset FY 2019 customer related net ISO costs and NCPA contract costs (non-budgeted).

**Annual Budget
NCPA Generation Detail Analysis By Plant
As of June 30, 2019**

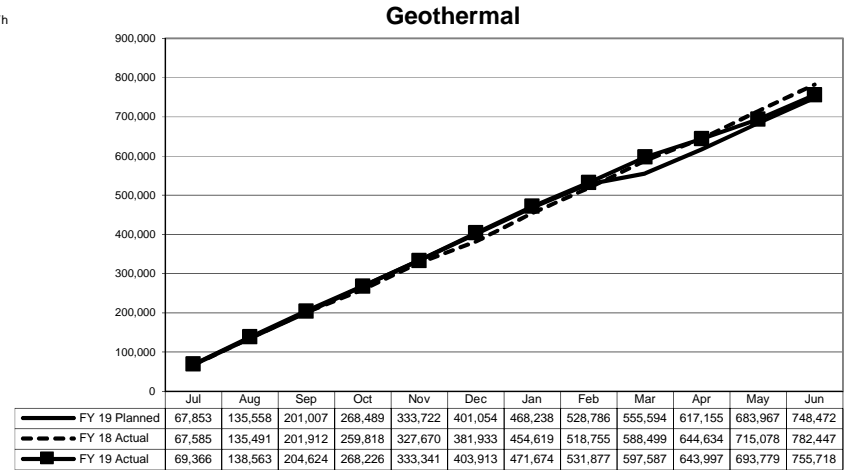
Generation Cost Analysis

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 17,793	\$ 18,859	\$ 24.95	\$ (1,066)	-6%
Capital Assets/Spare Parts Inventories	3,267	3,781	5.00	(514)	-16%
Other Costs	8,137	7,310	9.67	828	10%
CA ISO Charges	291	962	1.27	(671)	-230%
Debt Service	4,937	4,937	6.53	-	0%
Annual Budget	34,425	35,849	47.44	(1,423)	-4%
Less: Third Party Revenue					
Interest Income	382	422	0.56	(40)	-10%
ISO Energy Sales	26,285	34,084	45.10	(7,799)	-30%
Ancillary Services Sales	-	-	-	-	-
Effluent Revenues	700	1,695	2.24	(995)	-142%
Misc	110	113	0.15	(3)	-3%
	27,477	36,314	48.05	(8,837)	-32%
Net Annual Budget Cost to Participants	\$ 6,948	\$ (466)	\$ (0.62)	\$ 7,414	107%
Net Generation--MWh @ Meter	748,472	755,718			
\$/MWh (A)	\$ 2.69	\$ (7.15)			

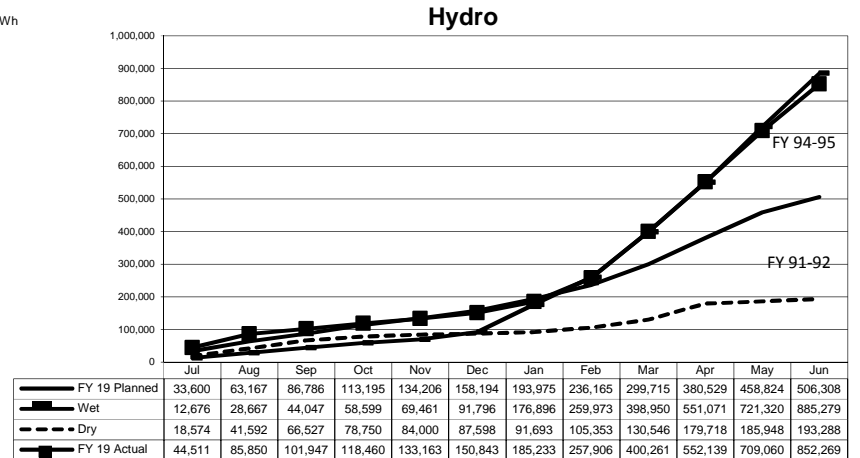
MWhs Generated

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 8,685	\$ 8,635	\$ 10.13	\$ 50	1%
Capital Assets/Spare Parts Inventories	1,975	1,727	2.03	248	13%
Other Costs	3,238	3,015	3.54	224	7%
CA ISO Charges	2,801	4,155	4.88	(1,354)	-48%
Debt Service	35,157	33,722	39.57	1,435	4%
Annual Budget	51,857	51,254	60.14	603	1%
Less: Third Party Revenue					
Interest Income	670	577	0.68	93	14%
ISO Energy Sales	20,783	41,733	48.97	(20,950)	-101%
Ancillary Services Sales	3,048	3,372	3.96	(324)	-11%
Misc	-	6	0.01	(6)	-
	24,501	45,687	53.61	(21,186)	-86%
Net Annual Budget Cost to Participants	\$ 27,356	\$ 5,567	\$ 6.53	\$ 21,789	
Net Generation--MWh @ Meter	506,308	852,269			
\$/MWh (A)	\$ (15.41)	\$ (33.04)			

In MWh



Footnotes:

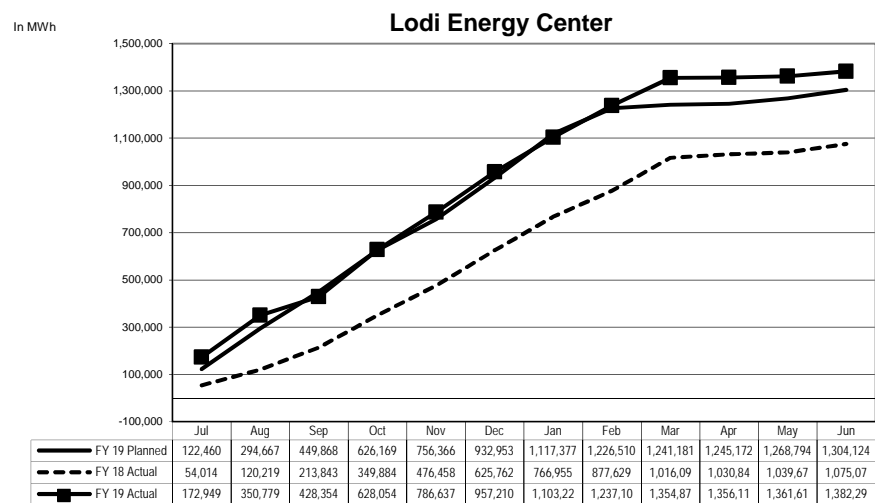
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

**Annual Budget
NCPA Generation Detail Analysis By Plant
As of June 30, 2019**

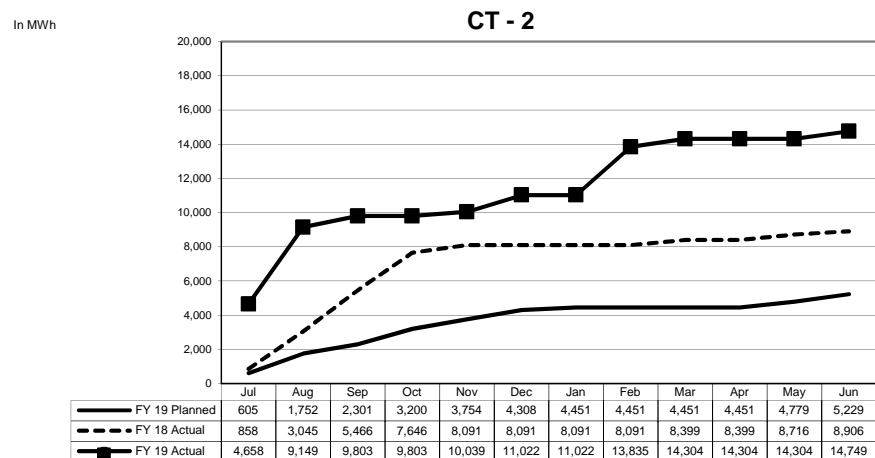
Generation Cost Analysis

	Lodi Energy Center				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 13,965	\$ 14,198	\$ 10.27	\$ (233)	-2%
Fuel	33,092	46,238	33.45	(13,145)	-40%
AB 32 GHG Offset	-	-	-	-	0%
CA ISO Charges and Energy Purchases	5,665	5,377	3.89	288	5%
Capital Assets/Spare Parts Inventories	1,613	1,509	1.09	104	6%
Other Costs	3,302	3,127	2.26	175	5%
Debt Service	26,080	26,080	18.87	(0)	0%
Annual Budget	83,717	96,529	69.83	(12,812)	-15%
Less: Third Party Revenue					
Interest Income	386	661	0.48	(275)	-71%
ISO Energy Sales	52,415	76,943	55.66	(24,528)	-47%
Ancillary Services Sales	1,029	1,631	1.18	(603)	-59%
Transfer Gas Credit	-	-	-	-	0%
Misc	-	2	0.00	(2)	0%
	53,829	79,237	57.32	(25,408)	-47%
Net Annual Budget Cost to Participants	\$ 29,887	\$ 17,291	\$ 12.51	\$ 12,596	42%
Net Generation--MWh @ Meter	1,304,124	1,382,297			
\$/MWh (A)	\$ 2.92	\$ (6.36)			

MWhs Generated



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,481	\$ 1,513	\$ 102.57	\$ (32)	-2%
Fuel and Pipeline Transport Charges	977	1,595	108.14	(618)	-63%
Capital Assets/Spare Parts Inventories	60	33	2.24	27	45%
Other Costs	506	430	29.17	76	15%
CA ISO Charges	2	225	15.24	(223)	-11006%
Debt Service	5,717	5,717	387.59	-	0%
Annual Budget	8,743	9,513	644.96	(770)	-9%
Less: Third Party Revenue					
Interest Income	109	120	8.15	(12)	-11%
ISO Energy Sales	401	2,137	144.86	(1,735)	-432%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	990	2,446	165.83	(1,456)	-147%
Misc	-	-	-	-	0%
	1,500	4,703	318.84	(3,203)	-214%
Net Annual Budget Cost to Participants	\$ 7,243	\$ 4,810	\$ 326.12	\$ 2,433	34%
Net Generation--MWh @ Meter	5,229	14,749			
\$/MWh (A)	\$ 291.87	\$ (61.47)			



Footnotes:

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

**Annual Budget
NCPA Generation Detail Analysis By Plant
As of June 30, 2019**

Generation Cost Analysis

	Combustion Turbine No. 1				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,560	\$ 2,847	\$ 253.01	\$ (1,286)	-82%
Fuel and Pipeline Transport Charges	497	1,230	109.33	(733)	-147%
Capital Assets/Spare Parts Inventories	5,465	4,268	379.37	1,197	22%
Other Costs	580	513	45.64	67	12%
CA ISO Charges	3	591	52.51	(588)	-20168%
Debt Service	-	-	-	-	-
Annual Budget	8,106	9,449	839.86	(1,344)	-17%
Less: Third Party Revenue					
Interest Income	-	2	(2)	(2)	
ISO Energy Sales	572	2,016	179.20	(1,444)	-252%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	16	1.39	(16)	0%
	572	2,034	180.59	(1,461)	-255%
Net Annual Budget Cost to Participants	\$ 7,533	\$ 7,415	\$ 659.09	\$ 118	2%
Net Generation--MWh @ Meter	7,533	11,251			
\$/MWh (A)	\$ 1,000.05	\$ 659.09			

Footnotes:

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

MWhs Generated

In MWh

CT - 1

