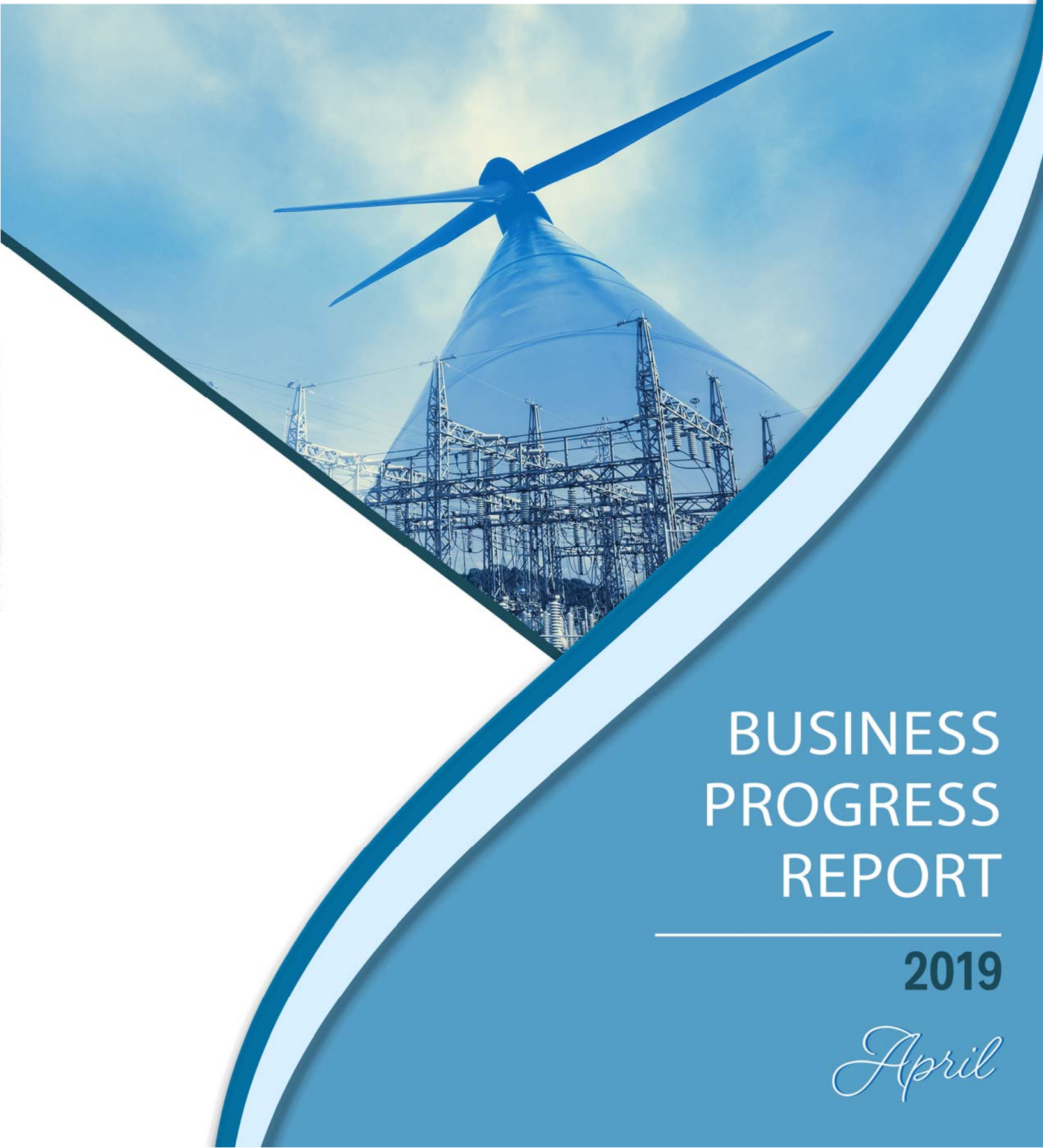




Northern California Power Agency
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BUSINESS PROGRESS REPORT

2019

April

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Generation Costs & Reliability

Combustion Turbine Project

Unit Operation for March 2019

Unit	Availability		Production		Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	322.5 MWh	CAISO
	100.0%	100%	Unit 2	144.6	
Curtailements, Outages, and Comments:					
No Comment for U1. / No Comment for U2.					
Unit	Availability		Production		Reason for Run
CT1 Lodi	0.0%		0.0 MWh		O/S
Curtailements, Outages, and Comments:					
CT1 Lodi - Out of Service investigating load gear and generator alignment.					
Unit	Availability		Production		Reason for Run
CT2 STIG	100.0%		456.0 MWh		CAISO
Curtailements, Outages, and Comments:					
No Comment for STIG.					
Unit	Availability		Production		Reason for Run
LEC	100%		117,780 MWh		CAISO
Curtailements, Outages, and Comments:					
No Comment for LEC.					

Maintenance Summary – Specific per asset above.

Geothermal Facilities

Availability/Production for March 2019

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	100 %	20,152 MWh	U1 had no outages for the month
Unit 2	100 %	*17,850 MWh	U2 had no outages for the month
Unit 3	N/A %	N/A	U3 remains out of service
Unit 4	89.65 %	27,711 MWh	U4 was out of service from 1400 3/8/19 until 1915 3/11/19 due to a PG&E transmission outage
Southeast Geysers Effluent Pipeline	77.60%	267.5 mgallons	Average flow rate: 5,897 gpm
Southeast Solar Plant	N/A	- KWh	Year-to-date KWh: 1,852,637
Bear Canyon Pump Station Zero Solar	N/A	67,244 KWh	Year-to-date KWh: 3,140,309

* Accounts for an additional 2,375 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

Note: The Southeast Solar Plant meter has failed and unable to obtain a reading.

Hydroelectric Project

Availability/Production for March 2019

Units	Availability	Net Electricity Generated	Out-of-Service
Collierville Unit 1	100 %	69,342 MWh	CV #1 unit no reportable outages.
Collierville Unit 2	100 %	75,105 MWh	CV #2 unit no reportable outages
Spicer Unit 1	94.18 %	1,346 MWh	NSM #1 unit was out of service on 3/2/19 at 2145 through 3/4/19 at 1221 due to the unit failing to start remotely. NSM #1 unit was out of service on, 3/19/19 at 0931 through 1414 due to a 21kV line outage.
Spicer Unit 2	99.35 %	1,326 MWh	NSM #2 unit was out of service on, 3/19/19 at 0931 through 1419 due to a 21kV line outage.
Spicer Unit 3	99.26 %	239 MWh	NSM #3 unit was out of service on, 3/19/19 at 0931 through 1458 due to a 21kV line outage.

Operations & Maintenance Activities:

- CMMS work orders
- Safety Training
- Cloud seeding activities suspended due to hitting suspension criteria
- Infrared Scan of the Collierville-Bellota 230kv transmission line
- Vegetation management around transmission lines
- Meeting with the USFS

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

- There were no Cal OSHA Recordable items, Lost Time Accidents, or Vehicle Incidents that occurred in March 2019.
- 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 March 30, 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.

March 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)	1	0	0	0
Days since Recordable	77	249	1,454	6,522
Work Hours Since Last Recordable	5,804	49,800	214,046	2,360,323
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	4,188	1,317	9,358	5,451
Work Hours without LTA	382,391	266,775	654,590	1,982,341
Vehicle Incident (month)	0	0	0	0
Vehicle Incident (calendar year)	0	0	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 March 30, 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

	March 2019		Calendar Year 2019	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	322.12 3/5 @1900	187,642	335.96 1/16 @1800	566,137
SVP	462.93 3/18 @1500	306,082	462.93 3/18 @1500	893,067
MSSA	765.73 3/5 @ 1900	493,724	796.31 1/16 @ 1800	1,459,204

Last Year 2018 Data*

	March 2018		Calendar Year 2018	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	320.43 3/1 @1900	190,035	419.2 7/25 @1700	558,613
SVP	481.46 3/30 @1600	311,524	529.29 8/9 @1700	898,996
MSSA	783.21 3/29 @ 1800	501,559	945.44 8/9 @ 1700	1,457,609

* 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	335.96 1/16 @ 1800
SVP	586.59 MW on 9/1/17 @ 1600	462.93 3/18 @ 1500
MSSA	1070.79 MW on 9/1/17 @ 1700	796.31 1/16 @ 1800

- 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.

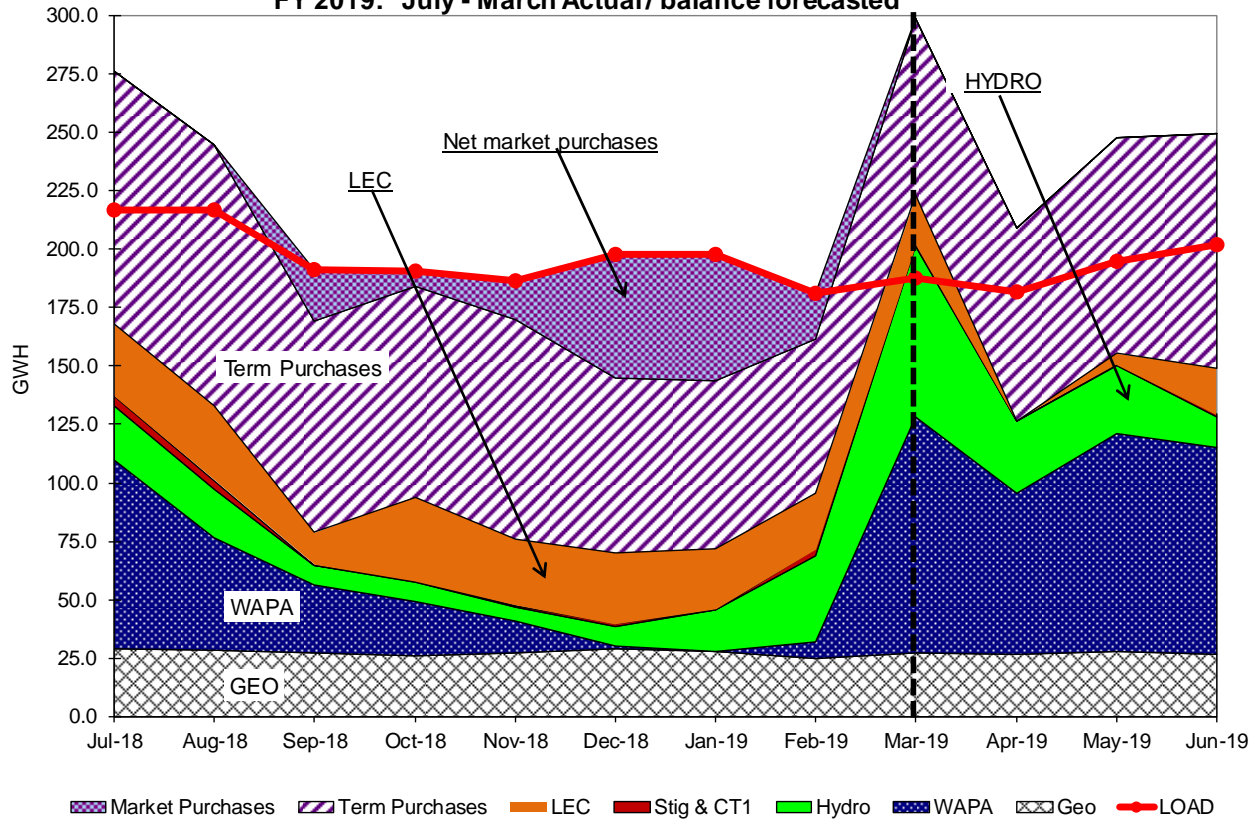
NCPA Deviation Band Performance		
	March 2019	Calendar Year 2019
MSSA % Within the Band	95.88%	96.79%

- March 7 @ 0130 – 1110, McKay's spilled due to high natural flows
- Spicer Meadows:
 - March 2 @ 2145 – March 4 @ 1221, Unit 1 o/s due to failed remote start
 - March 19 @ 0931 - 1414, all units o/s due to 21kV line outage
- Geothermal Units:
 - March 8 @ 1329 – March 11 @ 1914, Unit 4 o/s due to gland steam leak off system trouble
- Lodi Energy Center:
 - No curtailments
- Alameda CTs:
 - March 24 @ 1941 – March 29 @ 157, Unit 1 and 2 unavailable due to failed gas compressor motor lead
- Lodi CT:
 - March 1 - 31, unit o/s for turbine repair and annual maintenance
- Collierville Units:
 - March 4, 6, and 28, units derated for about an hour for intake trashrack flushing to alleviate high intake differential
 - March 6 @ 2205 – March 7 @ 0300, units derated due to high tailwater
- STIG:
 - No curtailments

Pooling, Portfolio Planning & Forecasting

- NCPA Pool load in March 2019 was 187,643 MWh, or 99.2% of the load forecast. Temperatures remained below normal early in the month, and precipitation was well above normal. Between April 1 and 10, 2019, NCPA Pool load was 58,957 MWh.
- Lodi Energy Center (LEC) generated 21,177 MWh for the Pool in March 2019, or 65% of the projected generation. During the month, over half the daily runs were for a duration of 17 hours or less as temperatures warmed and solar production in the system increased. LEC is offline for planned maintenance in April.
- During March 2019, 12.46" of rain was recorded at the Big Trees gauge. Average March Big Trees precipitation is 8.25".
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) is being maintained at \$60/MWh.
- NSMR storage as of March 31, 2019 was at 78,863 acre feet. The historical average NSMR storage at the end of March is 81,096 acre feet. As of April 17, 2019 NSMR storage is 74,672 acre feet. The current NCPA Pool share of NSMR storage is 38,454 acre feet.
- Combined Calaveras Project generation for the Pool in March 2019 totaled 142.5 GWh, up from 36.8 GWh in February 2019. The Pool's 72.9 GWh in March 2019 was more than triple the pre-month forecast of 23.3 GWh. This was due to above average precipitation and a need to move water for the expected runoff from the abundant snowpack.
- Western Base Resource (BR) deliveries for the Pool in March 2019 were 101,222 MWh, nearly four times Western's 26,088-MWh forecast. The Displacement program returned in March, with 6,853 MWh received. Through April 10, 2019 the pool had received nearly 50,000 MWh of BR.
- The PG&E Citygate gas index averaged \$3.31/MMBtu for delivery on April 11, 2019, falling lower than the average PG&E gas price during March 2019 of \$4.019/MMBtu, as gas demand for heating moderates. The April 2019 PG&E Bidweek price is \$3.67, down from March's \$4.29/MMBtu.
- Day-ahead NP15 electricity prices averaged \$37.24/MWh (HLH) and \$35.85 (LLH) during March 2019, with the hourly TH_NP15 maximum at \$124.26/MWh on March 4, 2019. The year's first negative prices arrived mid-day on weekends. During April, hourly on-peak prices have averaged \$24.60 per MWh (HLH) and \$27.13 (LLH) through April 11, 2019.

NCPA POOL RESOURCES
FY 2019: July - March Actual/ balance forecasted



NCPA Pool Loads & Resources Value Summary								
	Peak and Energy Summary				Estimated Production Costs		Cost of Serving Demand	
	Mar-19				NCPA Pool			
	Coincident Peak (MW)	Total MWh	Forecast Values	Avg. MW	Cost/Revenue (Estimate)	Variable Cost (\$/MWh)	Totals	Avg (\$/MWh)
Demand	322.1	187,643	189,100	252.5	N/A	N/A		
			69152				at Market Clearing Price	
WAPA	63.0	101,222	25,873	136.2	\$ 1,170,720	\$ 11.57	\$ 7,322,161	\$ 39.02
Geothermal	-	27,202	12,149	36.6	516,831	19.00		
Hydro	-	72,900	23,876	98.1	437,400	6.00		
Stig & CTs	-	545	459	0.7	38,900	71.44		
LEC	-	21,177	32,702	28.5	800,285	37.79		
Contracts	130.5	75,528	84,989	101.7	4,450,385	58.92	\$ 4,659,770	\$ 24.83
Market - Net	128.6	(110,930)	9,052	(149.3)	(4,240,040)	38.22		
(Net Sales = Negative)								
Net Total	322.1	187,643	189,100	252.5	\$ 3,174,482	\$ 24.83		

Monthly Market Summary						
	Avg Variable Cost of Pool Generation			Forward Prices (EOX NP15 HLH Ask Prices)		
	Pool Energy (MWh)	HLH Avg MCP (\$/MWh)	Generation (\$/MWh)	NP15 3/1/2019 (\$/MWh)	4/12/2019 (\$/MWh)	
Jul-18	197,935	\$ 63.64	\$ 52.34	May-19	\$ 34.99	\$ 26.57
Aug-18	211,074	\$ 55.31	\$ 44.06	Jun-19	45.31	37.67
Sep-18	191,121	\$ 35.51	\$ 51.48	Jul-19	66.08	63.46
Oct-18	190,756	\$ 45.30	\$ 46.39	Q3 2019	\$ 64.00	\$ 61.45
Nov-18	186,329	\$ 55.00	\$ 50.16	Q4 2019	47.68	48.58
Dec-18	197,935	\$ 57.27	\$ 48.12	Q1 2020	46.49	47.86
Jan-19	197,652	\$ 42.93	\$ 45.13	CY2020	\$ 42.67	\$ 44.19
Feb-19	180,866	\$ 79.12	\$ 41.57	CY2021	44.36	45.09
Mar-19	187,643	\$ 39.02	\$ 24.83	CY2022	45.14	45.90
Apr-19				CY2023	45.93	46.69
May-19				CY2024	46.76	47.48
Jun-19				CY2025	47.78	48.49

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 June 2019:
 - Monthly System Resource Adequacy Demonstration (filed April 17, 2019)
 - Monthly Supply Plan (filed April 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

- 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.

Day-Ahead Market Enhancements

- In this initiative, CAISO will consider enhancements to combine the Integrated Forward Market with the Residual Unit Commitment process, change the day-ahead scheduling granularity from hourly to 15-minute, and add an imbalance reserve product. Additional design elements needed to extend the day-ahead market to EIM entities will also be considered. CAISO separated the DAME initiative into two (2) separate stakeholder initiatives to address the separate challenges of granularity and uncertainty, and release them one year apart.
- DAME Phase 1 will address the granularity issue created due to the fact that the Day Ahead Market is an hourly product while the Fifteen Minute Market is a 15-minute product. CAISO convert nearly all Day Ahead Market processes to the 15-minute level except for unit commitments due to the fact that CAISO systems could not solve them within an acceptable time limit. CAISO also proposes to close the

markets thirty minutes early at 0930 and publish the results thirty minutes later at 1330. CAISO intends to release these changes in fall of 2020.

- 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 reoptimize 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.

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)	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-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)	\$1,516,215	\$ 52.60	\$ 0.03	\$ 30.87
Oct-18	57,294	23,113	(34,181)	\$1,170,720	\$ 50.65	\$ 0.16	\$ 32.63
Nov-18	29,042	13,824	(15,218)	\$1,170,720	\$ 84.69	\$ 0.18	\$ 33.99
Dec-18	16,349	960	(15,389)	\$1,170,720	\$ 1,219.50	\$ 0.34	\$ 36.24
Jan-19	20,572	-	(20,572)	\$562,206	\$ 27.33	\$ -	\$ 35.00
Feb-19	37,432	7,063	(30,369)	\$995,254	\$ 140.91	\$ 0.05	\$ 36.32
Mar-19	56,569	101,222	44,653	\$1,170,720	\$ 11.57	\$ 0.41	\$ 30.87
Apr-19	61,300	-	0	\$2,278,396	\$ 37.17	\$ -	\$ 30.44
May-19	86,402	-	0	\$2,278,396	\$ 26.37	\$ -	\$ 31.29
Jun-19	83,927	-	0	\$2,278,396	\$ 27.15	\$ -	\$ 32.24

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 had 101,222 MWh Base Resource (BR) energy in March 2019. This is the second highest volume of total Base Resource deliveries since January 2017, and third highest volume since January 2013.
- Market Efficiency Enhancement Agreement (MEEA) pricing saved Pool Members approximately \$37,700 in March 2019. In addition, the Displacement Program saved Pool Members approximately \$3,500, for a total savings of about \$41,200 combined for the two programs.

Western Base Resource Scheduling Flexibility

- WAPA and BOR conducted a survey on Base Resource Minimum Take ideas for customer feedback. Customers generally expressed interest in pursuing the experiments proposed. WAPA and BOR implemented the first two experiments beginning operating date February 28, 2019, so customers can benefit from the increased scheduling flexibility at the soonest. WAPA provided experiment results of approximately \$630,000 savings from the rescheduled 14,910 MWh, for BR customers through March 26, 2019. WAPA will continue to provide updates during the monthly Hydropower Operations Committee (HPOC) meetings.

Debt and Financial Management

- On March 20th, the Federal Reserve said that the United States economy was slowing more than it had previously thought and painted a far less rosy economic picture than the White House as it left interest rates unchanged and signaled little appetite for raising them again in the near future.
- Federal Reserve (Fed) Chair Jay Powell said the economy “is in a good place” in a news conference. However, he and his colleagues said growth appeared to be slowing from last year, under the weight of the Trump administration’s trade war, economic slowdowns in Europe, China, and fading stimulus from the Republican tax cuts of 2017. The Fed now expects 2.1 percent growth this year, down from the 2.3 percent it forecast in December.
- Following the Federal Reserve’s comments, the yield on the 10-year Treasury note fell to its lowest level since December 2017 as fixed-income investors continued to worry about global growth and a potential deceleration in the U.S. economy. Those fears kept the Treasury yield curve inverted during the session, with the yield on the 3-month bill above that of the 10-year note. The short-term rate first exceeded that of several longer-term securities in a phenomenon known as inversion and viewed by many as a recession predictor.
- NCPA staff, bond counsel and the Agency’s financial advisor, PFM, have been working with various counterparties to prepare an agenda package for the Commission to authorize and approve the termination of the 2008B Hydroelectric interest rate swap. Over the next month, staff will be finalizing documents necessary to unwind this transaction and eventually call for redemption the 2008B Hydroelectric outstanding bonds.

Schedule Coordination Goals

Software Development

- Santa Clara has fully transitioned into utilizing NCPA’s Scheduling Software Suite, with Day-Ahead scheduling being the last to rollout in production for the April 04, 2019 Operating Date.
- IS 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 July 2019 and anticipated go live in early 2020.
- IS Staff continues to configure the systems in anticipation of the East Bay’s EBCE and San Jose’s SJCE SCID transition, both slated to start in June 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

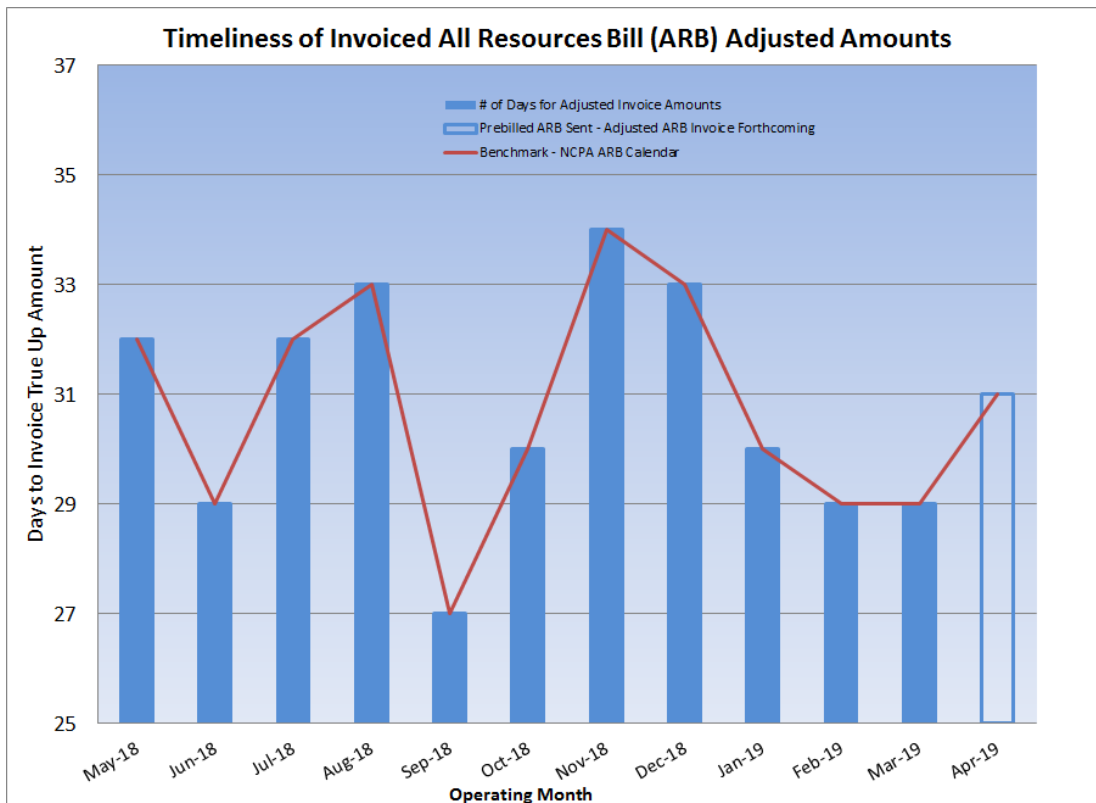
- Progress continues to be made upgrading staff to Windows 10 with over 50% of the Agency on the new Operating System. The goal is to have all workstations moved over before the end of 2020.
- The Ops and Support group has implemented a new VEEAM backup solution to replace the older EMC NetWorker product. VEEAM allows efficiently backup our virtualization environment and Office 365 services such as SharePoint Online and Exchange.
- IS, along with Power Management and Settlements, is actively updating contingency plans for applications and services that support the bid-to-bill process. This is an effort to identify any gaps and provide recommendations to help reduce risks associated with unplanned downtime. Project is expected to be completed by the end of the fiscal year.
- The IS department continues work on implementing records retention workflows and automation within SharePoint using a product called Collabware. Currently, we are working with the company to help us create templates and rules that will be used as part of the implementation. Targeting the end of the calendar year to have this working throughout the Agency's internal SharePoint environment.
- IS has started reviewing possible replacements for old firewall systems that are used to protect the control center's ICS network. Currently, we are evaluating several possible vendors and planning to start gathering technical requirements that will be used to determine the appropriate solution.
- Multiple features updates have been made to the NCPA Automated Dispatch System, which include enhancements for Real Time Contingency Dispatch across multiple SCID and new logic for CAISO supplemental decrement instruction for several solar projects.

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 April 2019 NCPA All Resources Bill (ARB) monthly invoice sent to members on March 26, 2019 contains:

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



Legislative & Regulatory

Political Arena State/Federal/Western Programs

- NCPA staff attended the California Municipal Utilities Association's Annual Conference from March 31 – April 2. Key areas of discussion included presentations from utility executives on lessons learned from recent wildfires and a credit rating agency presentation on factors weighed in determining utility credit ratings.
- The Legislative and Regulatory Affairs team is soliciting competitive proposals for qualified entities with subject matter expertise to provide services that support NCPA's and members' compliance with statutory requirements to develop and evaluate wildfire mitigation plans. Proposals are due on April 30th, 2019.
- NCPA continues to engage in discussions at the State Capitol on key legislation pertaining to wildfires and utility resource procurement, among other topics, in advance of upcoming deadlines for committee action in the house of origin. The Legislature is on Spring Recess through April 22nd.

Human Resources

Hires:

Patrick Fleming joined NCPA on March 29, 2019 as a Technician Operator III at our Geothermal Facilities in Middletown, CA. Patrick brings over 12 years of power generation experience. Patrick most recently served as a Lead Power Generation Tech for Peterson Caterpillar.

Intern Hires:

None.

Promotions/Position Changes:

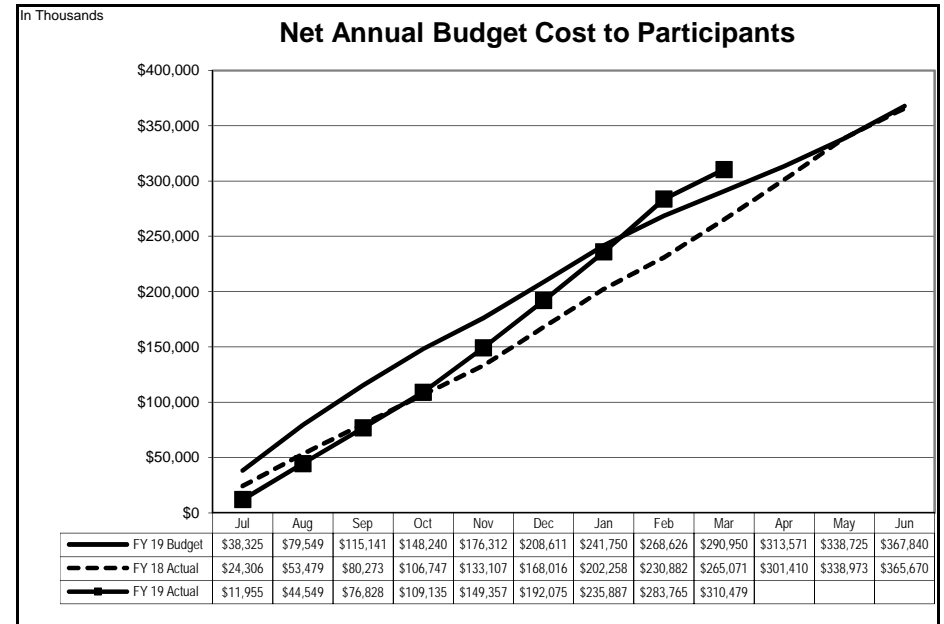
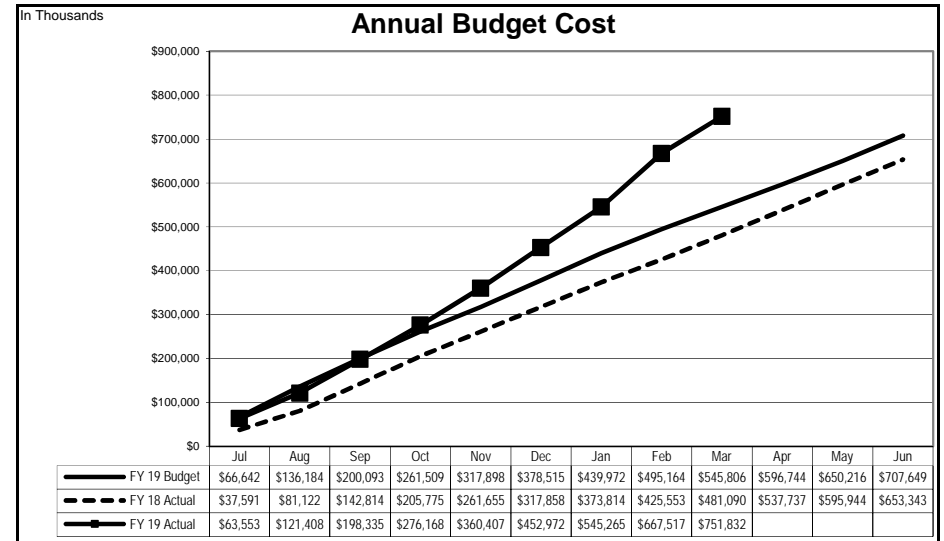
None.

Separations:

Aaron Werner, Engineer II, resigned from NCPA headquarters after 3 years of service on April 12, 2019.

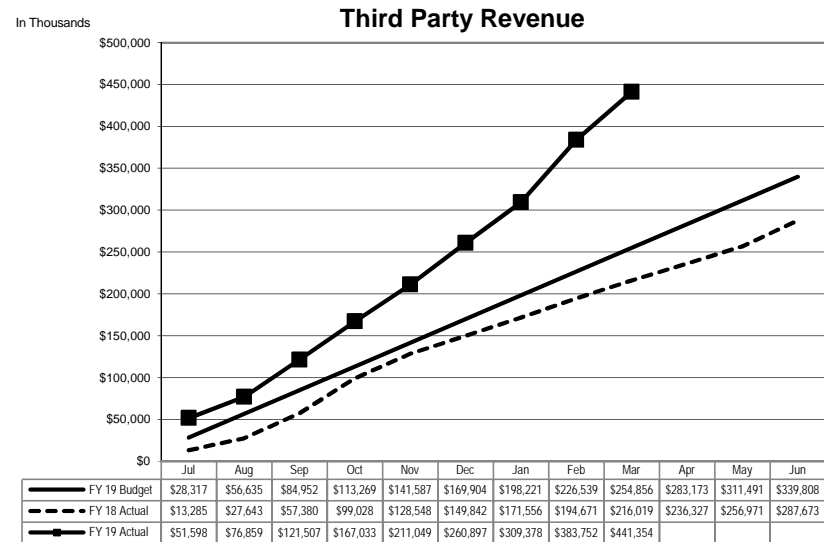
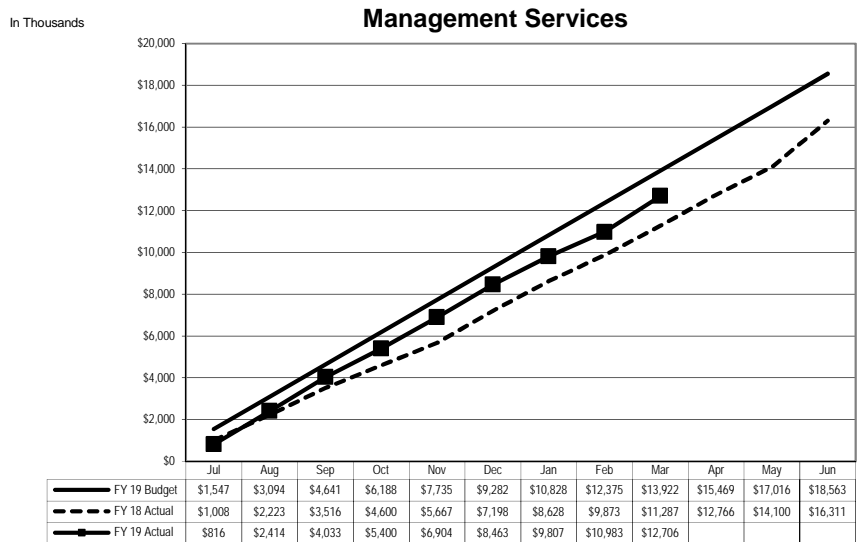
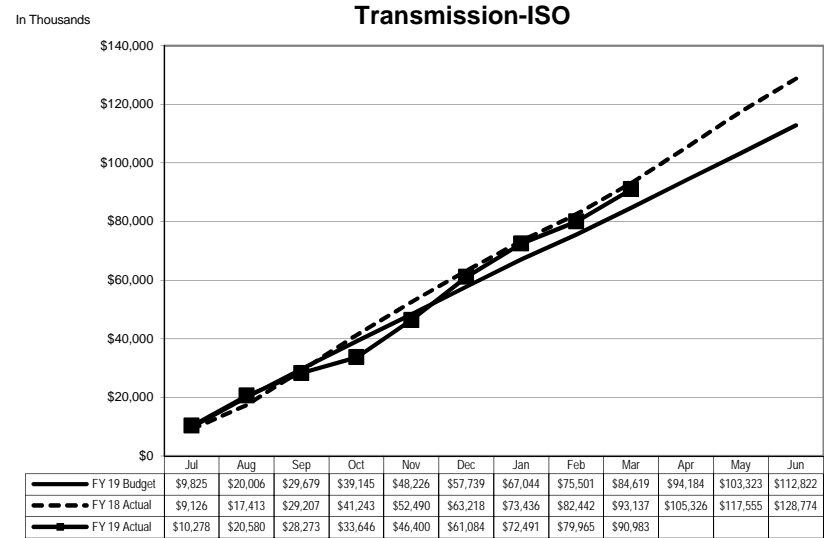
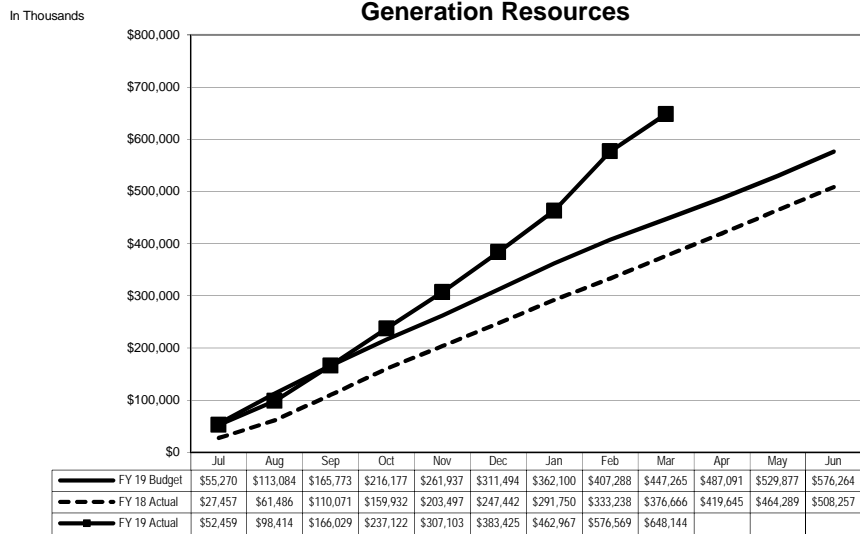
**Annual Budget
2018-2019 Fiscal Year To Date
As of March 31, 2019**

In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
GENERATION RESOURCES				
NCPA Plants				
Hydroelectric	51,857	38,450	\$ 13,406	26%
Geothermal Plant	34,425	25,806	8,619	25%
Combustion Turbine No. 1	8,106	6,181	1,925	24%
Combustion Turbine No. 2 (STIG)	8,743	7,182	1,561	18%
Lodi Energy Center	83,717	82,537	1,179	1%
	186,847	160,156	26,691	14%
Member Resources - Energy	64,449	42,886	21,562	33%
Member Resources - Natural Gas	3,098	3,530	(431)	-14%
Western Resource	31,350	14,459	16,891	54%
Market Power Purchases	15,539	18,755	(3,216)	-21%
Load Aggregation Costs - ISO *	273,858	406,234	(132,376)	-48%
Net GHG Obligations	1,123	2,124	(1,001)	-89%
	576,264	648,144	(71,880)	-12%
TRANSMISSION				
Independent System Operator	112,822	90,983	21,839	19%
MANAGEMENT SERVICES				
Legislative & Regulatory				
Legislative Representation	2,023	1,502	521	26%
Regulatory Representation	887	433	454	51%
Western Representation	848	490	358	42%
Member Services	438	178	260	59%
	4,196	2,604	1,593	38%
Judicial Action	625	500	125	20%
Power Management				
System Control & Load Dispatch	6,107	4,302	1,805	30%
Forecasting & Prescheduling	2,775	1,888	887	32%
Industry Restructuring	439	264	175	40%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,135	613	521	46%
Green Power Project	3	0	3	92%
Gas Purchase Program	78	48	30	39%
Market Purchase Project	112	63	49	44%
	10,649	7,179	3,470	33%
Energy Risk Management	260	153	107	41%
Settlements	941	402	539	57%
Integrated System Support	273	101	172	63%
Participant Pass Through Costs	1,619	1,082	538	33%
Support Services	-	687	(687)	
	18,563	12,706	5,857	32%
TOTAL ANNUAL BUDGET COST	707,649	751,832	(44,184)	-6%
LESS: THIRD PARTY REVENUE				
Plant ISO Energy Sales	100,456	138,094	(37,637)	-37%
Member Resource ISO Energy Sales	28,187	30,959	(2,772)	-10%
NCPA Contracts ISO Energy Sales	14,720	22,641	(7,920)	-54%
Western Resource ISO Energy Sales	23,183	17,130	6,052	26%
Load Aggregation Energy Sales	131,329	211,072	(79,743)	-61%
Ancillary Services Sales	4,409	4,039	370	8%
Transmission Sales	110	83	28	25%
Western Credits, Interest & Other Income	37,414	17,336	20,078	54%
	339,808	441,354	(101,545)	-30%
NET ANNUAL BUDGET COST TO PARTICIPANTS	367,840	310,479	\$ 57,362	16%



* 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.

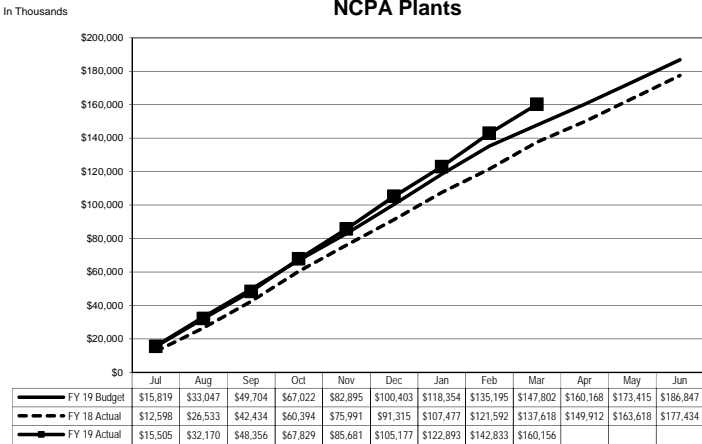
Annual Budget Budget vs. Actual By Major Area As of March 31, 2019



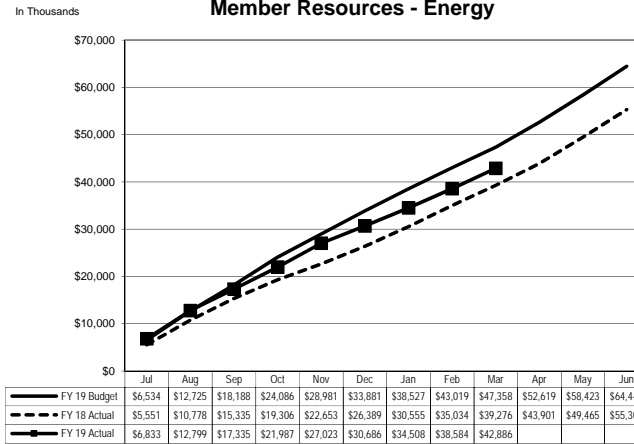
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

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

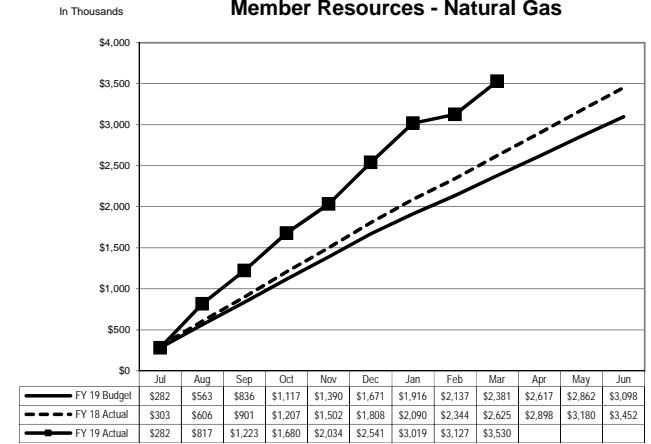
NCPA Plants



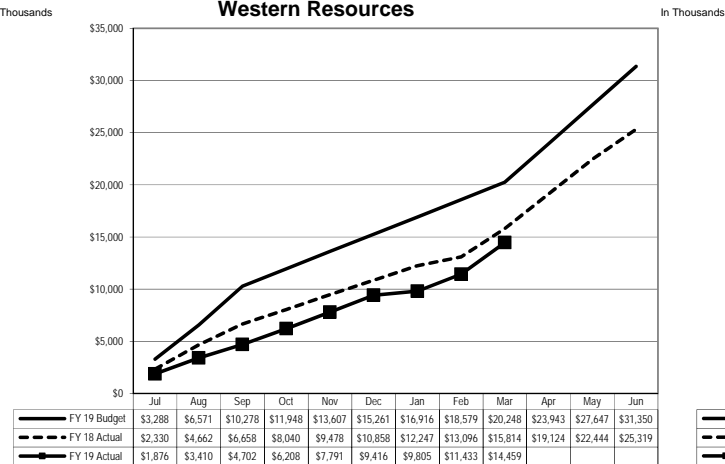
Member Resources - Energy



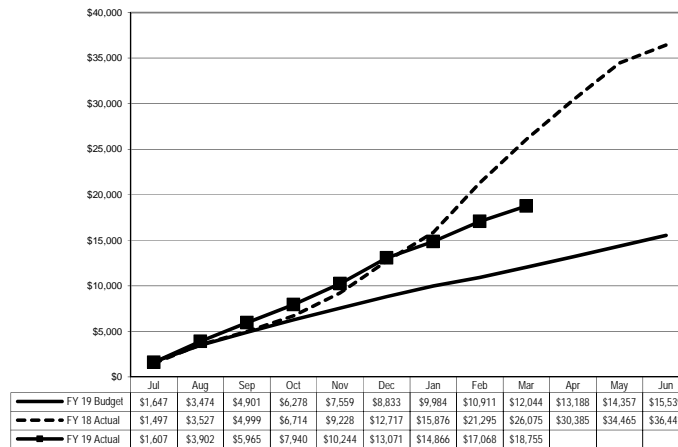
Member Resources - Natural Gas



Western Resources

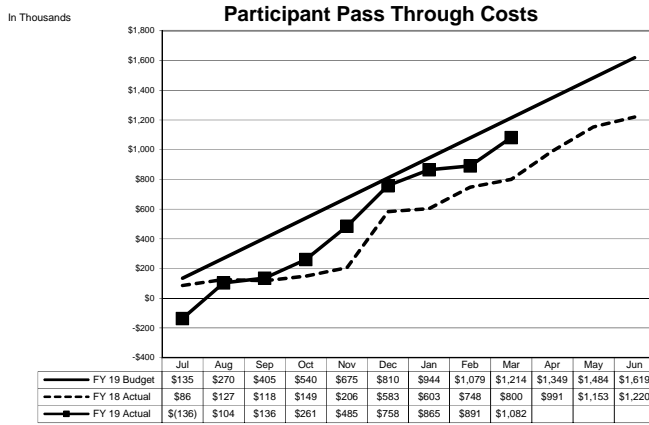
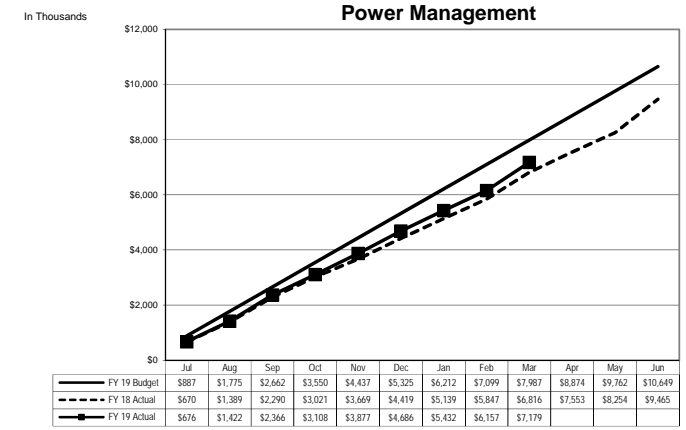
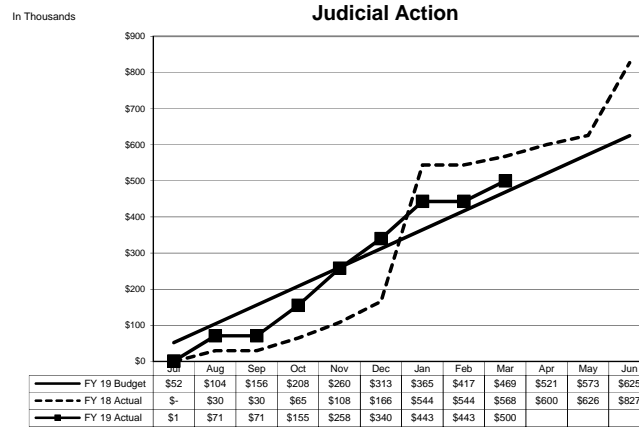
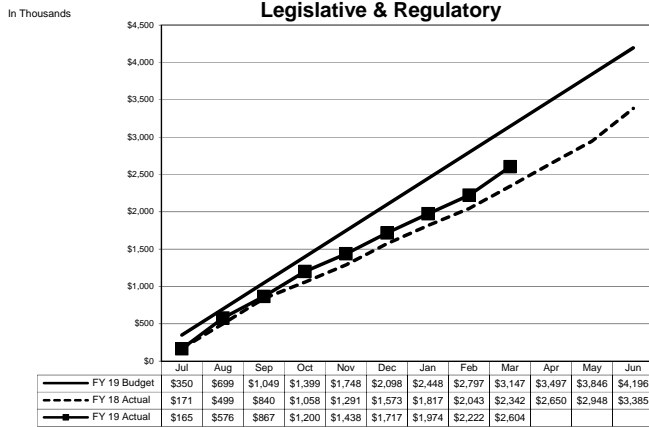


Market Power Purches



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

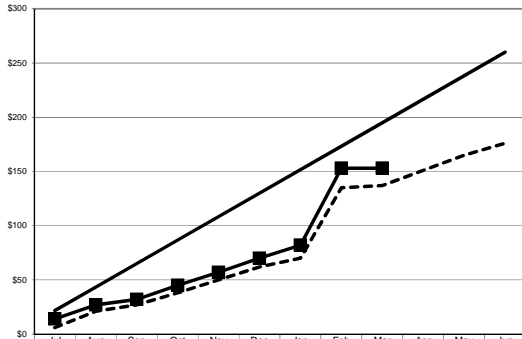
Annual Budget Cost Management Services Analysis By Source As of March 31, 2019



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

In Thousands

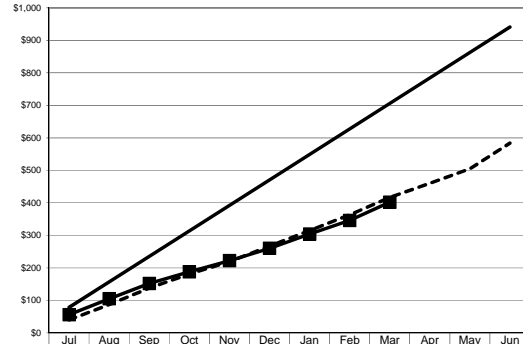
Energy Risk Management



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	\$22	\$43	\$65	\$87	\$108	\$130	\$152	\$173	\$195	\$217	\$238	\$260
FY 18 Actual	\$6	\$21	\$27	\$38	\$50	\$62	\$70	\$135	\$137	\$151	\$165	\$176
FY 19 Actual	\$14	\$27	\$32	\$45	\$57	\$70	\$82	\$153	\$153			

In Thousands

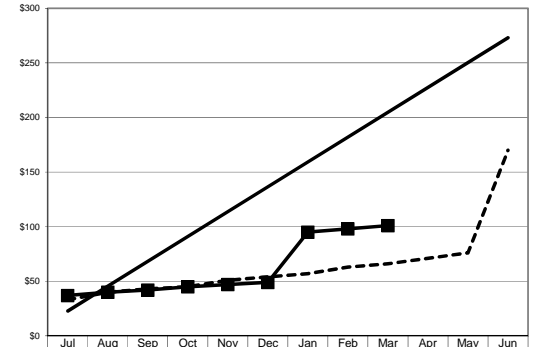
Settlements



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	\$78	\$157	\$235	\$314	\$392	\$471	\$549	\$627	\$706	\$784	\$863	\$941
FY 18 Actual	\$40	\$87	\$138	\$181	\$219	\$267	\$315	\$363	\$417	\$460	\$505	\$584
FY 19 Actual	\$56	\$105	\$152	\$188	\$222	\$260	\$304	\$346	\$402			

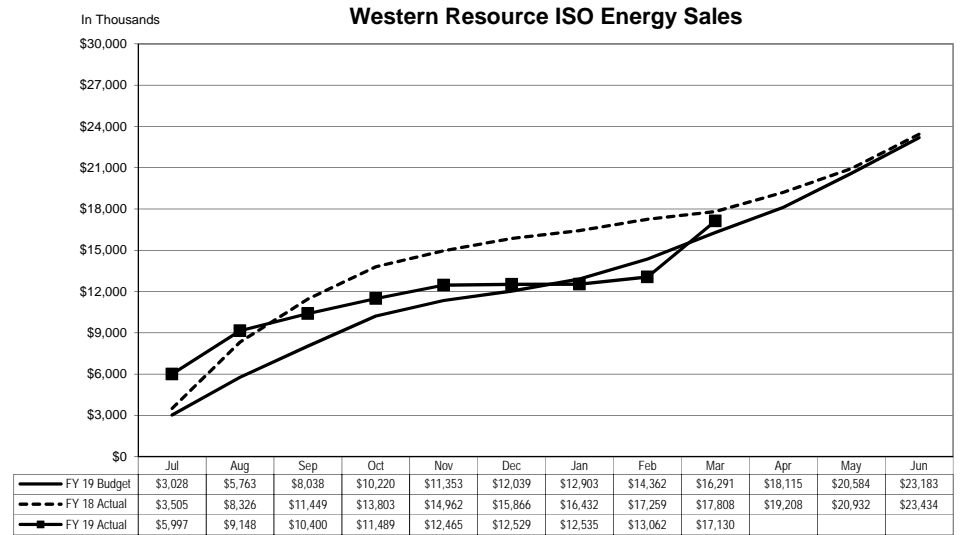
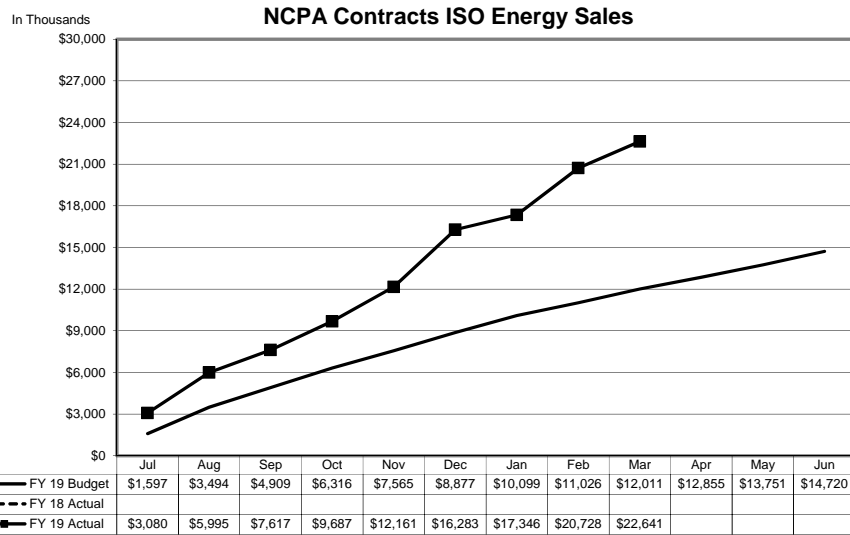
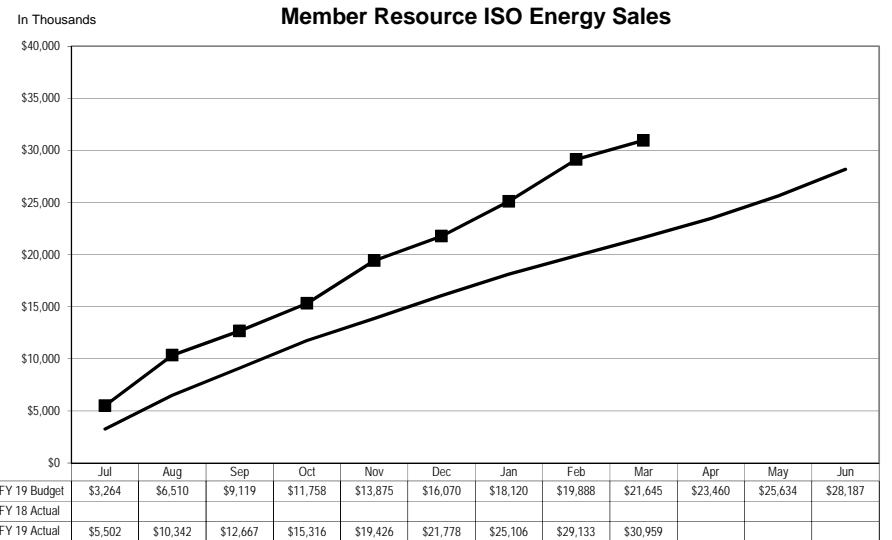
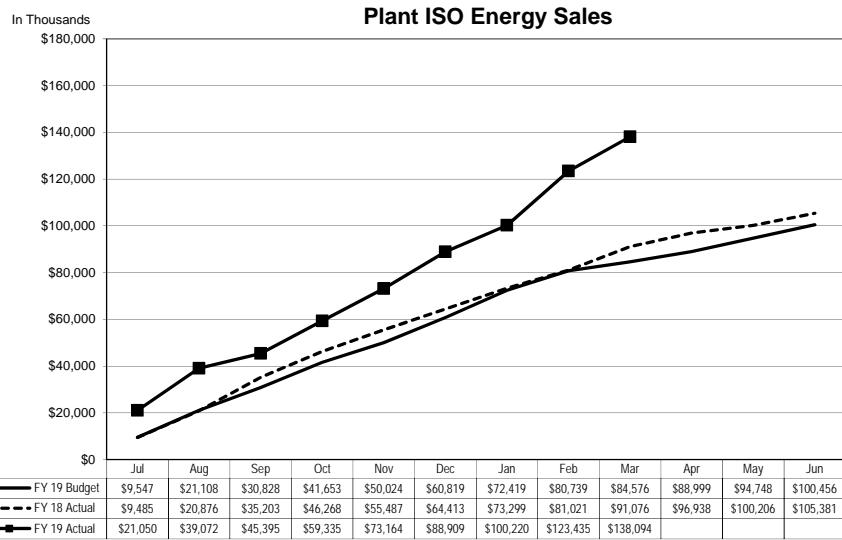
In Thousands

Integrated Systems Support

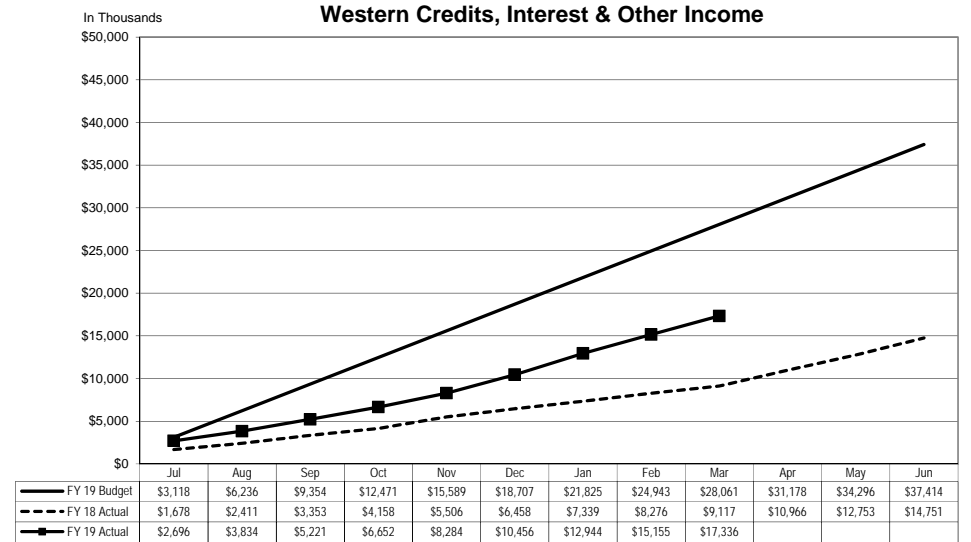
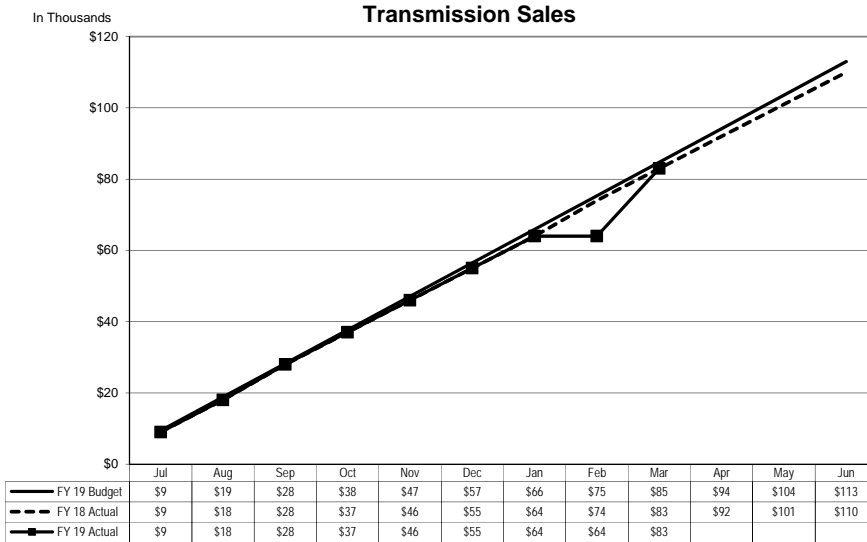
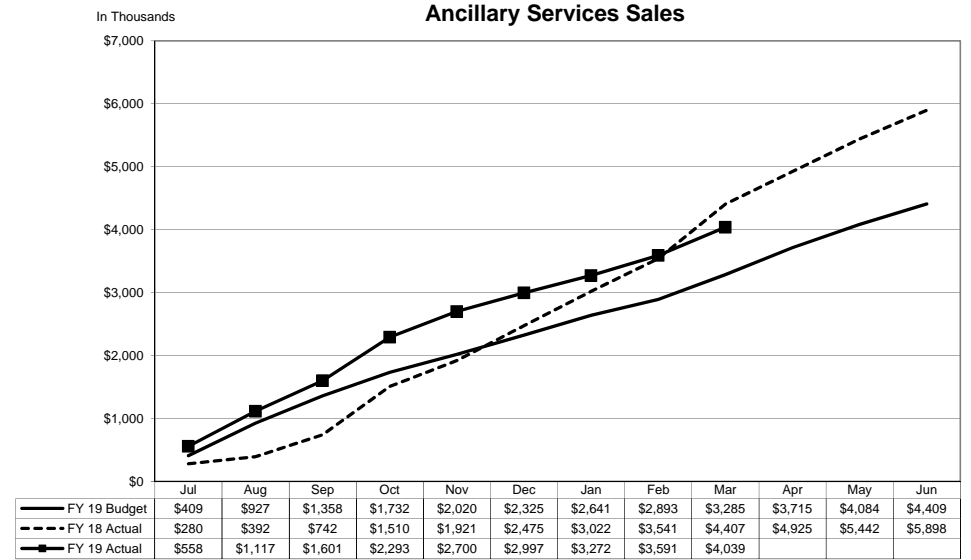
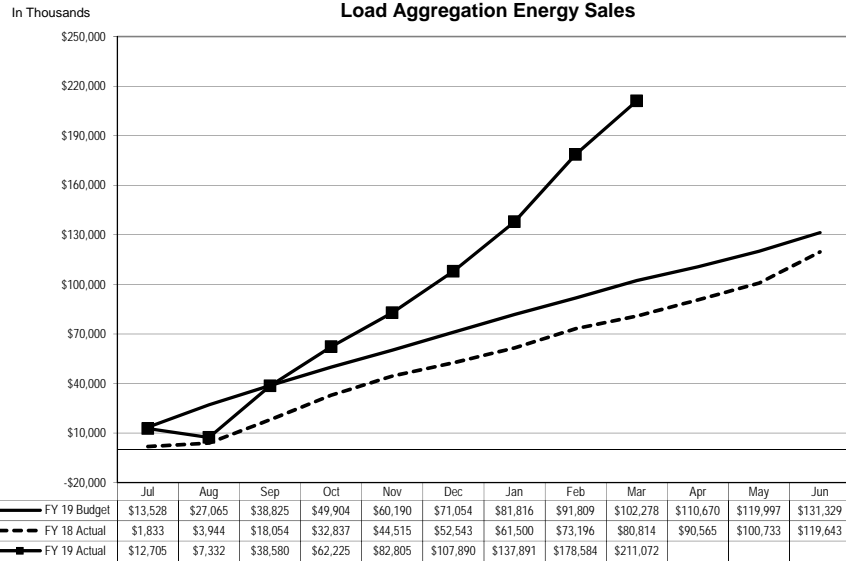


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	\$23	\$46	\$68	\$91	\$114	\$137	\$159	\$182	\$205	\$228	\$250	\$273
FY 18 Actual	\$33	\$40	\$43	\$45	\$51	\$54	\$57	\$63	\$66	\$71	\$76	\$170
FY 19 Actual	\$37	\$40	\$42	\$45	\$47	\$49	\$95	\$98	\$101			

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



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



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

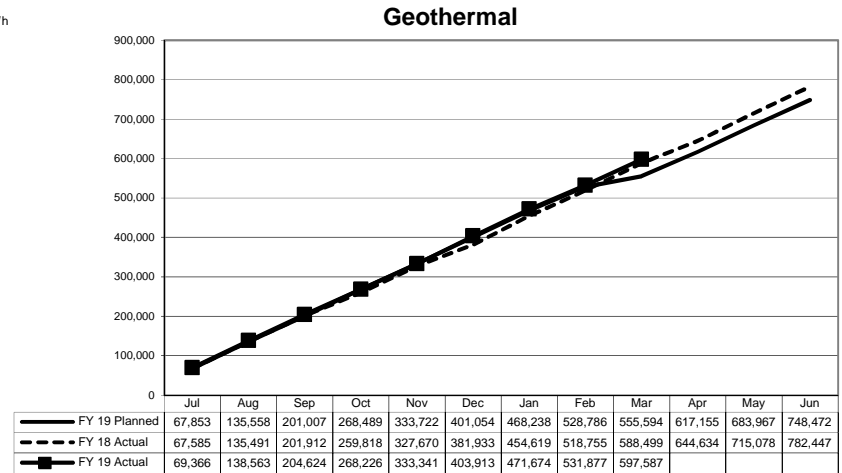
Generation Cost Analysis

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 17,793	\$ 13,221	\$ 22.12	\$ 4,572	26%
Capital Assets/Spare Parts Inventories	3,267	2,695	4.51	571	17%
Other Costs	8,137	5,426	9.08	2,711	33%
CA ISO Charges	291	761	1.27	(469)	-161%
Debt Service	4,937	3,703	6.20	1,234	25%
Annual Budget	34,425	25,806	43.18	8,619	25%
Less: Third Party Revenue					
Interest Income	382	299	0.50	83	22%
ISO Energy Sales	26,285	30,387	50.85	(4,103)	-16%
Ancillary Services Sales	-	-	-	-	-
Effluent Revenues	700	1,204	2.01	(504)	-72%
Misc	110	85	0.14	25	23%
	27,477	31,975	53.51	(4,498)	-16%
Net Annual Budget Cost to Participants	\$ 6,948	\$ (6,169)	\$ (10.32)	\$ 13,117	189%
Net Generation--MWh @ Meter	748,472	597,587			
\$/MWh (A)	\$ 2.69	\$ (16.52)			

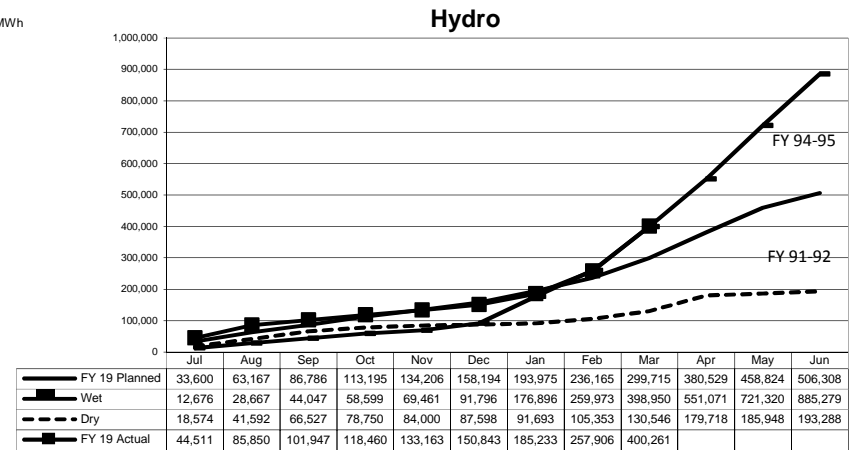
MWhs Generated

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 8,685	\$ 5,936	\$ 14.83	\$ 2,749	32%
Capital Assets/Spare Parts Inventories	1,975	1,151	2.88	824	42%
Other Costs	3,238	2,008	5.02	1,231	38%
CA ISO Charges	2,801	2,988	7.47	(187)	-7%
Debt Service	35,157	26,368	65.88	8,789	25%
Annual Budget	51,857	38,450	96.06	13,406	26%
Less: Third Party Revenue					
Interest Income	670	369	0.92	301	45%
ISO Energy Sales	20,783	28,394	70.94	(7,611)	-37%
Ancillary Services Sales	3,048	1,916	4.79	1,132	37%
Misc	-	1	0.00	(1)	-
	24,501	30,679	76.65	(6,179)	-25%
Net Annual Budget Cost to Participants	\$ 27,356	\$ 7,771	\$ 19.41	\$ 19,585	
Net Generation--MWh @ Meter	506,308	400,261			
\$/MWh (A)	\$ (15.41)	\$ (46.46)			

In MWh



Footnotes:

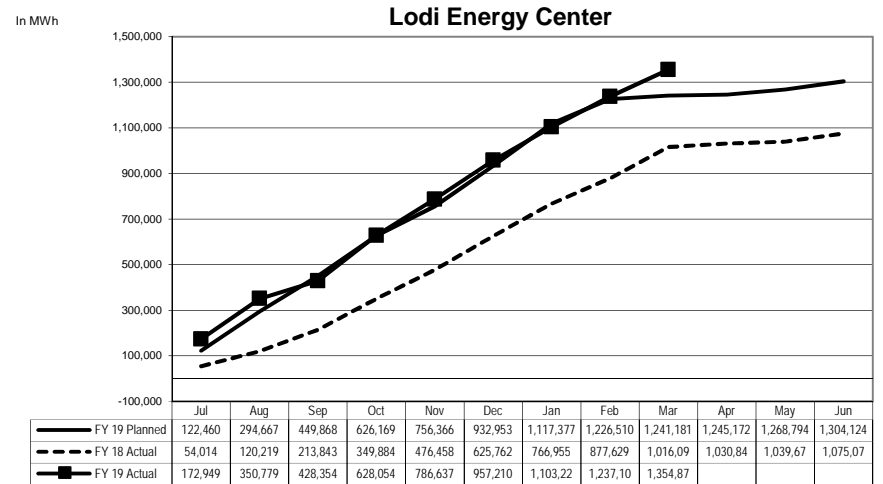
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

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

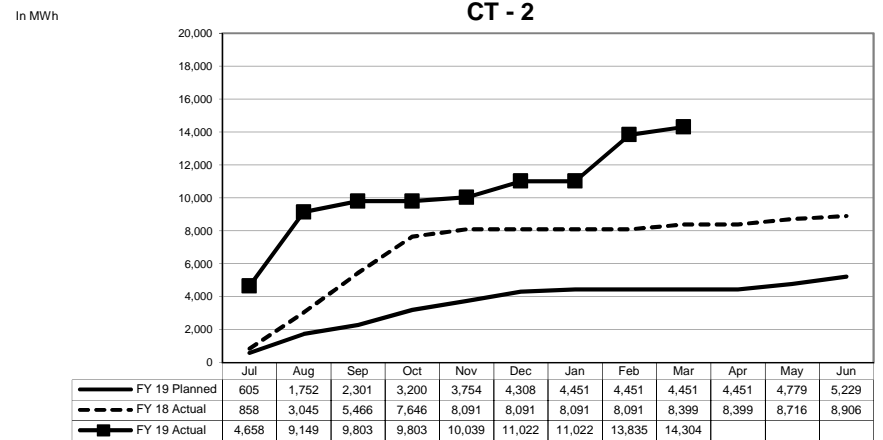
Generation Cost Analysis

	Lodi Energy Center				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 13,965	\$ 9,664	\$ 7.13	\$ 4,301	31%
Fuel	33,092	44,902	33.14	(11,810)	-36%
AB 32 GHG Offset	-	-	-	-	0%
CA ISO Charges and Energy Purchases	5,665	4,911	3.62	753	13%
Capital Assets/Spare Parts Inventories	1,613	1,137	0.84	476	30%
Other Costs	3,302	2,363	1.74	939	28%
Debt Service	26,080	19,560	14.44	6,520	25%
Annual Budget	83,717	82,537	60.92	1,179	1%
Less: Third Party Revenue					
Interest Income	386	507	0.37	(121)	-31%
ISO Energy Sales	52,415	75,481	55.71	(23,067)	-44%
Ancillary Services Sales	1,029	1,537	1.13	(508)	-49%
Transfer Gas Credit	-	-	-	-	0%
Misc	-	1	0.00	(1)	0%
	53,829	77,526	57.22	(23,697)	-44%
Net Annual Budget Cost to Participants	\$ 29,887	\$ 5,011	\$ 3.70	\$ 24,876	83%
Net Generation--MWh @ Meter	1,304,124	1,354,877			
\$/MWh (A)	\$ 2.92	\$ (10.74)			

MWhs Generated



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 1,481	\$ 1,047	\$ 73.22	\$ 433	29%
Fuel and Pipeline Transport Charges	977	1,381	96.57	(404)	-41%
Capital Assets/Spare Parts Inventories	60	8	0.57	52	86%
Other Costs	506	311	21.75	195	39%
CA ISO Charges	2	147	10.25	(145)	-7141%
Debt Service	5,717	4,288	299.75	1,429	25%
Annual Budget	8,743	7,182	502.11	1,561	18%
Less: Third Party Revenue					
Interest Income	109	78	5.48	30	28%
ISO Energy Sales	401	2,079	145.36	(1,678)	-418%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	990	1,853	129.56	(863)	-87%
Misc	-	-	-	-	0%
	1,500	4,011	280.41	(2,511)	-167%
Net Annual Budget Cost to Participants	\$ 7,243	\$ 3,171	\$ 221.70	\$ 4,072	56%
Net Generation--MWh @ Meter	5,229	14,304			
\$/MWh (A)	\$ 291.87	\$ (78.05)			



Footnotes:

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

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

Generation Cost Analysis

	Combustion Turbine No. 1				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,560	\$ 1,857	\$ 195.51	\$ (297)	-19%
Fuel and Pipeline Transport Charges	497	1,101	115.90	(604)	-121%
Capital Assets/Spare Parts Inventories	5,465	2,436	256.49	3,029	55%
Other Costs	580	370	39.00	210	36%
CA ISO Charges	3	416	43.81	(413)	-14174%
Debt Service	-	-	-	-	-
Annual Budget	8,106	6,181	650.70	1,925	24%
Less: Third Party Revenue					
Interest Income	-	1		(1)	
ISO Energy Sales	572	1,752	184.42	(1,179)	-206%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	16	1.65	(16)	0%
	572	1,768	186.07	(1,196)	-209%
Net Annual Budget Cost to Participants	\$ 7,533	\$ 4,413	\$ 464.57	\$ 3,121	41%
Net Generation--MWh @ Meter	7,533	9,499			
\$/MWh (A)	\$ 1,000.05	\$ 464.57			

Footnotes:

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

MWhs Generated

In MWh

CT - 1

