



Northern California Power Agency
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BUSINESS PROGRESS REPORT

2019

February

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Generation Costs & Reliability

Combustion Turbine Project

Unit Operation for January 2019

Unit	Availability		Production		Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	168.8 MWh	CAISO / CAISO
	99.5%	100.0%	Unit 2	67.0	
Curtailements, Outages, and Comments:					
AlamedaCT1 - U1 o/s for diesel engine repairs 0730-1130 OMS 6848366 / No Comment					
Unit	Availability		Production		Reason for Run
CT1 Lodi	0.0%		0.0 MWh		No Run
Curtailements, Outages, and Comments:					
LodiCT1 - Out of Service due to warranty repairs to the Hot Gas Path Turbine sections.					
Unit	Availability		Production		Reason for Run
CT2 STIG	100.0%		0.0 MWh		CAISO
Curtailements, Outages, and Comments:					
No Comment.					
Unit	Availability		Production		Reason for Run
LEC	100.0%		146,025 MWh		CAISO
Curtailements, Outages, and Comments:					
No Comment					

Maintenance Summary – Specific per asset above.

Geothermal Facilities

Availability/Production for January 2019

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	100 %	20,259 MWh	U1 had no outages for the month
Unit 2	100 %	*19,317 MWh	U2 had no outages for the month
Unit 3	N/A %	N/A	Unit 3 remains out of service.
Unit 4	100 %	30,991 MWh	U4 was out of service 12/5/18 from 0700 until 1700 for PG&E relay testing
Southeast Geysers Effluent Pipeline	100.0%	262.4 mgallons	Average flow rate: 5,810 gpm
Southeast Solar Plant	N/A	42,409 KWh	Year-to-date KWh: 1,762,549
Bear Canyon Pump Station Zero Solar	N/A	32,843 KWh	Year-to-date KWh: 3,000,947

* Accounts for an additional 1,116 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

Hydroelectric Project

Availability/Production for January 2019

Units	Availability	Net Electricity Generated	Out-of-Service
Collierville Unit 1	82.43 %	11,234 MWh	CV #1 unit was out of service on 01/12/19 at 0609 through 01/17/19 at 1655 due to planned annual maintenance.
Collierville Unit 2	94.38 %	22,665 MWh	CV #2 unit was out of service on 01/12/19 at 0609 through 01/13/19 at 2122 due to planned annual maintenance. CV #2 unit was out of service on 01/16/19 at 0548 through 0821 due to maintenance on the seal water filter.
Spicer Unit 1	100 %	297 MWh	NSM #1 unit no reportable outages.
Spicer Unit 2	100 %	36 MWh	NSM #2 unit no reportable outages.
Spicer Unit 3	100 %	158 MWh	NSM #3 unit no reportable outages.

Operations & Maintenance Activities:

- NERC MOD-025 generator gross and reactive power capability tests
- McKays reservoir elevation lowered for sediment samples in preparation for reservoir sediment removal project
- CVPH dual unit and 230kv switchyard outage
- CV1 Annual Maintenance Outage
- CMMS Work Orders

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

- No lost time accidents or vehicle accidents occurred in January. There was one OSHA recordable incident, which occurred at Hydro on Saturday, January 12. An operator hiking out of the McKays Reservoir during the dual-unit Collierville outage attempted to avoid a rock which had dislodged above him, but the rock landed on his hand, breaking one of his fingers and hurting another.
- 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 January 19, 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.

January 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	7	179	1,384	6,452
Work Hours Since Last Recordable	462	35,924	203,479	2,333,338
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	4,110	1,247	9,288	5,381
Work Hours without LTA	377,049	252,899	644,023	1,955,356
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 January 19, 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 CAISO costs.
- NCPA MSSA Load Data:

Current Year 2019 Data

	January 2019		Calendar Year 2019	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	335.96 1/16 @1800	197,651	335.96 1/16 @1800	197,651
SVP	460.34 1/16 @1800	309,886	460.34 1/16 @1800	309,886
MSSA	796.31 1/16 @ 1800	507,537	796.31 1/16 @ 1800	507,537

Last Year 2018 Data*

	January 2018		Calendar Year 2018	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	329.79 1/8 @1800	195,106	419.2 7/25 @1700	195,106
SVP	456.11 1/18 @1400	307,141	529.29 8/9 @1700	307,141
MSSA	782.06 1/8 @ 1800	502,247	945.44 8/9 @ 1700	502,247

*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	460.34 1/16 @ 1800
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.

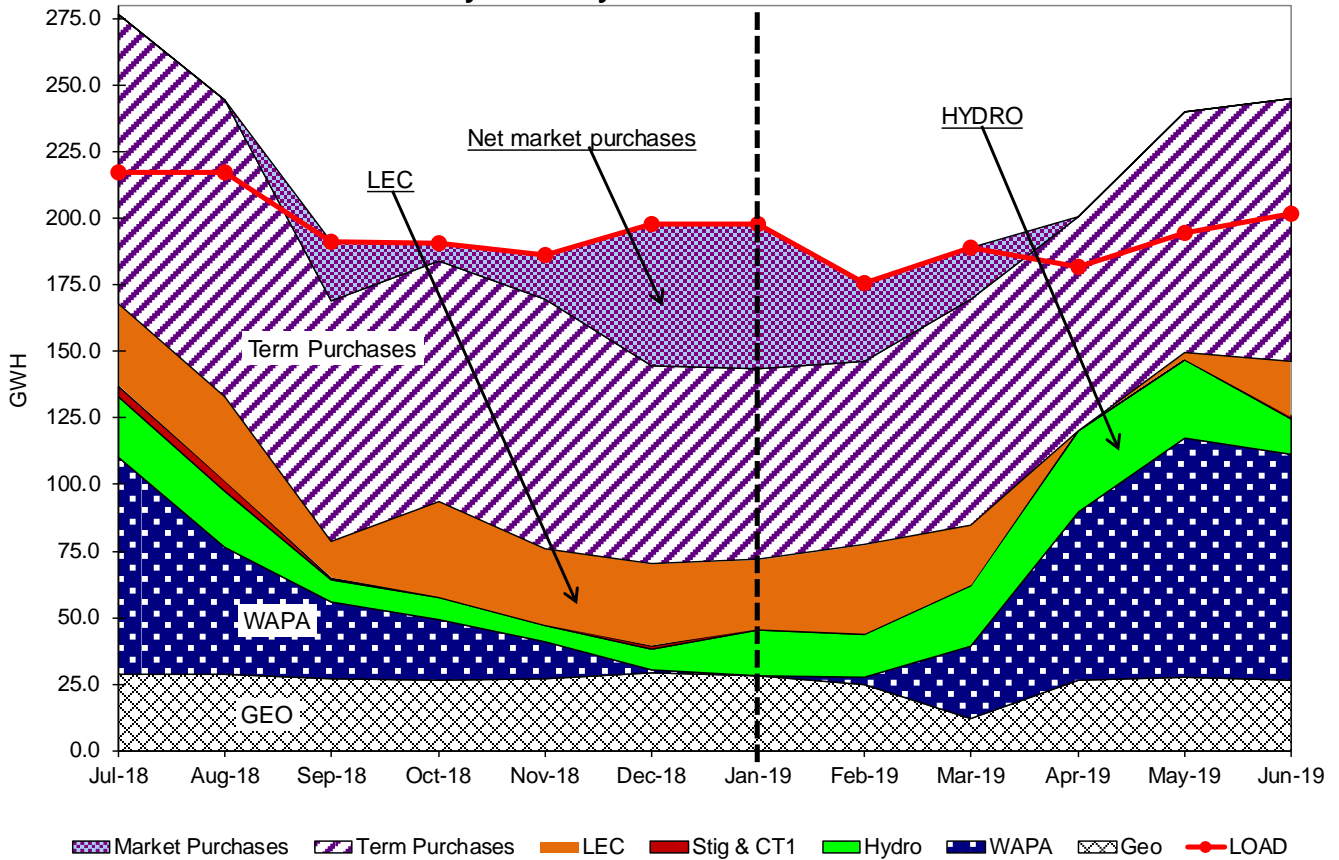
NCPA Deviation Band Performance		
	January 2019	Calendar Year 2019
MSSA % Within the Band	98.81%	98.81%

- Spicer Meadows:
 - No curtailments
- Geothermal Units:
 - January 23 @ 0923 – 1029, Unit 4 trip off line due to faulty EHC level indication
- Lodi Energy Center:
 - No curtailments
- Alameda CTs:
 - January 2 @ 1745 – 1804, Unit 1 late start due to trouble with diesel starting engine
 - January 14 @ 0808 - 1130, Unit 1 o/s for diesel starting engine service
- Lodi CT:
 - January 1 - 6, unit o/s due to turbine damage repairs
 - January 7 – 31, unit outage rolled over to planned annual maintenance
- Collierville Units:
 - January 12 @ 0609, Unit 1 and Unit 2 shut down for Unit 1 annual maintenance, dual unit maintenance and McKays drawdown for sediment sampling
 - January 13 @ 2122, Unit 2 returned to service
 - January 16 @ 0548 – 0821, Unit 2 trip off line due to fouled seal water filter caused by dirty water from McKays drawdown
 - January 17 @ 1655, Unit 1 returned to service
- STIG:
 - No curtailments

Pooling, Portfolio Planning & Forecasting

- NCPA Pool load in January 2019 was 197,652 MWh, which was 97.9% of the pre-month forecast of 201,906 MWh. From February 1 through 10, 2019, NCPA Pool load was 62,630 MWh.
- Lodi Energy Center (LEC) generated 26,257 MWh for the Pool during January 2019, again running every day of the month. Pool share of generation between February 1 and 11, 2019 was 10,872 MWh. Forecasted output for February 2019 is 33,247 MWh.
- For the month of January 2019, 14.26" of rain was recorded at the Big Trees gage. January Big Trees average precipitation is 10.24".
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) is being reduced from \$175/MWh to \$75/MWh.
- NSMR storage as of January 31, 2019 was at 76,687 acre feet. The historical average NSMR storage at the end of January is 79,053 acre feet. As of February 11, 2019 NSMR storage is 75,173 acre feet. The current NCPA Pool share of NSMR storage is 38,865 acre feet.
- Combined Calaveras Project generation for the Pool in January 2019 totaled 17.5 GWh, up from 8.2 GWh in December 2018. The Pool's 17.5 GWh in January 2019 was slightly below the pre-month forecast of 18.6 GWh. During the period of February 1 - 11, 2019 the Pool's share of Calaveras Project generation was 12.0 GWh.
- Western Base Resource (BR) deliveries for the Pool in December 2018 were 960 MWh, exceeding Western's zero-MWh forecast for the month, but for January 2019 there were zero allocations of BR. The Displacement program remains in hibernation, and while the Western forecast for February 2019 again shows zero MWh, about 2,500 MWh have been received for the Pool as of February 11.
- The PG&E Citygate gas index averaged \$14.385/MMBtu for delivery on February 11, 2019, due to supply constraints and high demand. This average is down from \$17.71/MMBtu recorded on February 8, 2019. The average PG&E gas price during January 2019 was \$3.685/MMBtu. The February 2019 PG&E Bidweek price is \$3.64, down from January's \$4.55/MMBtu.
- Day-ahead NP15 electricity prices averaged \$44.17/MWh (HLH) and \$37.60 (LLH) during January 2019, with the hourly TH_NP15 maximum at \$85.42/MWh on January 7, 2019. In February 2019, hourly on-peak prices have exceeded \$200/MWh on several occasions due to the cold weather.

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



NCPA Pool Loads & Resources Value Summary								
	Peak and Energy Summary				Estimated Production Costs		Cost of Serving Demand	
	Jan-19				NCPA Pool			
	Coincident Peak (MW)	Total MWh	Forecast Values	Avg. MW	Cost/Revenue (Estimate)	Variable Cost (\$/MWh)	Totals	Avg (\$/MWh)
Demand	336.0	197,652	201,906	265.7	N/A	N/A		
WAPA	-	-	69,152	-	\$ 1,170,723	#DIV/0!	\$ 8,485,397	\$ 42.93
Geothermal	-	28,051	27,805	37.7	532,962	19.00		
Hydro	-	17,490	18,852	23.5	104,940	6.00		
Stig & CTs	-	136	337	0.2	1,922	14.10		
LEC	-	26,257	39,433	35.3	992,236	37.79		
Contracts	110.7	71,587	63,564	96.2	3,787,948	52.91	\$ 9,076,550	\$ 45.92
Market - Net	225.3	54,131	51,915	72.8	1,877,946	34.69		
(Net Sales = Negative)								
Net Total	336.0	197,652	201,906	265.7	\$ 8,468,677	\$ 45.92		

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 1/2/2019 (\$/MWh)		2/11/2019 (\$/MWh)
Jul-18	197,935	\$ 63.64	\$ 52.34	Feb-19	\$ 48.29	\$ 96.44
Aug-18	211,074	\$ 55.31	\$ 44.06	Mar-19	37.68	49.15
Sep-18	191,121	\$ 35.51	\$ 51.48	Apr-19	27.61	35.94
Oct-18	190,756	\$ 45.30	\$ 46.39	Q2 2019	\$ 32.60	\$ 37.85
Nov-18	186,329	\$ 55.00	\$ 50.16	Q3 2019	63.50	59.87
Dec-18	197,935	\$ 57.27	\$ 48.12	Q4 2019	44.47	46.07
Jan-19	197,652	\$ 42.93	\$ 45.92	CY2019	\$ 46.28	\$ 52.45
Feb-19				CY2020	41.20	42.07
Mar-19				CY2021	43.37	43.37
Apr-19				CY2022	44.44	44.20
May-19				CY2023	45.29	44.97
Jun-19				CY2024	46.44	45.83

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 April 2019:
 - Monthly System Resource Adequacy Demonstration (filed February 15, 2019)
 - Monthly Supply Plan (filed February 15, 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.

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. Recently, the CAISO indicated that they are considering breaking the DAME initiative into two (2) separate stakeholder initiatives (the details of such have not be made available).

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.

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)	\$1,170,723	\$ 56.91	\$ -	\$ 37.75
Feb-19	37,432	-	0	\$1,170,723	\$ 31.28	\$ -	\$ 37.03
Mar-19	56,569	-	0	\$1,170,723	\$ 20.70	\$ -	\$ 34.61
Apr-19	61,300	-	0	\$2,278,398	\$ 37.17	\$ -	\$ 34.02
May-19	86,402	-	0	\$2,278,398	\$ 26.37	\$ -	\$ 34.81
Jun-19	83,927	-	0	\$2,278,398	\$ 27.15	\$ -	\$ 35.75
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 zero Base Resource (BR) energy in January 2019. The lack of BR for December 2018 and January 2019 was due to pumping load.
- The Displacement Program has shut down for the winter, effective trade date November 1, 2018. The program is scheduled to resume March 1, 2019.
- Pool members' total savings under Market Efficiency Enhancement Agreement (MEEA) pricing was zero for the Pool in January 2019 due to zero allocations of BR.

Western Base Resource Minimum Take Ideas Survey

- WAPA and BOR conducted a survey on Base Resource Minimum Take ideas for customer feedback. Based on the customer comments, WAPA and BOR will explore options to improve the value of the BR product. This includes the increase in scheduling flexibility and other opportunities to enhance the value of BR. NCPA submitted comments on January 25, 2019.

Debt and Financial Management

- At its January 2019 meeting, the Federal Reserve (Fed) left rates unchanged, but pivoted monetary policy to a wait-and-see approach as the Committee noted, “it will be patient as it determines what future adjustments...may be appropriate.” They also shifted from a somewhat singular focus on U.S. employment and inflation to consider a broader range of “global economic and financial developments.” It appears the Fed is firmly on hold for the indefinite future.
- Bond market volatility subsided. The U.S. Treasury yield curve remained slightly inverted between 2- and 5- year maturities. U.S. Treasury yields were modestly lower, falling two to eight basis points (0.02% to 0.08%) over the month.
- As a result of declining yields across the yield curve in January, fixed income returns were strongly positive, with longer duration indexes outperforming shorter-term ones. For example, the 3-Month and 2-Year Constant Maturity U.S. Treasury Indices returned 0.20% and 0.27% respectively, while the 5-Year and 10-Year indices generated 0.53% and 0.71% total return for the month.
- NCPA staff continues to move forward with refunding the Hydroelectric Series 2010A bonds. Current estimates show an average annual savings of 1.7% million to the project participants. In addition, NCPA staff is working with the Agency’s financial advisor, Public Financial Management, to replace the expiring Letter of Credit on the 2008A/B bonds. Both transactions should be completed over the next few months.

Schedule Coordination Goals

Software Development

- NCPA IS staff is assisting Santa Clara to transition its MSS portfolio from scheduling via Web Service into the use of the new client-based NCPA Scheduling Suite. An enhanced version of the Prescheduling app has been deployed to SVP Staff. SVP is targeting 03/01/2019 Operating Date as the first schedule using the NCPA Scheduling Suite.
- Work continues on the development of replacing 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.
- ReqLogic for HCI was successfully put into production at the end of January.
- Pioneer’s NPCE SCID was successfully transitioned into its new PCCE SCID effective 02/01/2019 Operating Date.
- IS Staff is configuring the systems in anticipation of the East Bay’s EBCE and San Jose’s SJCE SCID transition.

Network

- Progress continues upgrading staff to Windows 10 with about 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 purchased a new backup software VEEAM to retire the older EMC Networker. Plans are underway to schedule the transition to the new software and configure new backup methodologies.
- 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 completion is expected by the end of this fiscal year.
- System and Administration training for a new records retention software, Collabware, is scheduled for February. This solution will integrate into NCPA's SharePoint Intranet to automate the workflow process to properly retain, approve and destroy records per the Agency Records Retention policy.
- The Information Services department presented a webinar to the APPA community about the DEED scholarship that was used to fund a student intern at NCPA to assist with the Cyber Security Incident Response exercise performed in August 2018. The webinar included an overview of the deliverable of a Cyber Security Toolkit, experiences and lessons learned.

NCPA Bills & Settlements

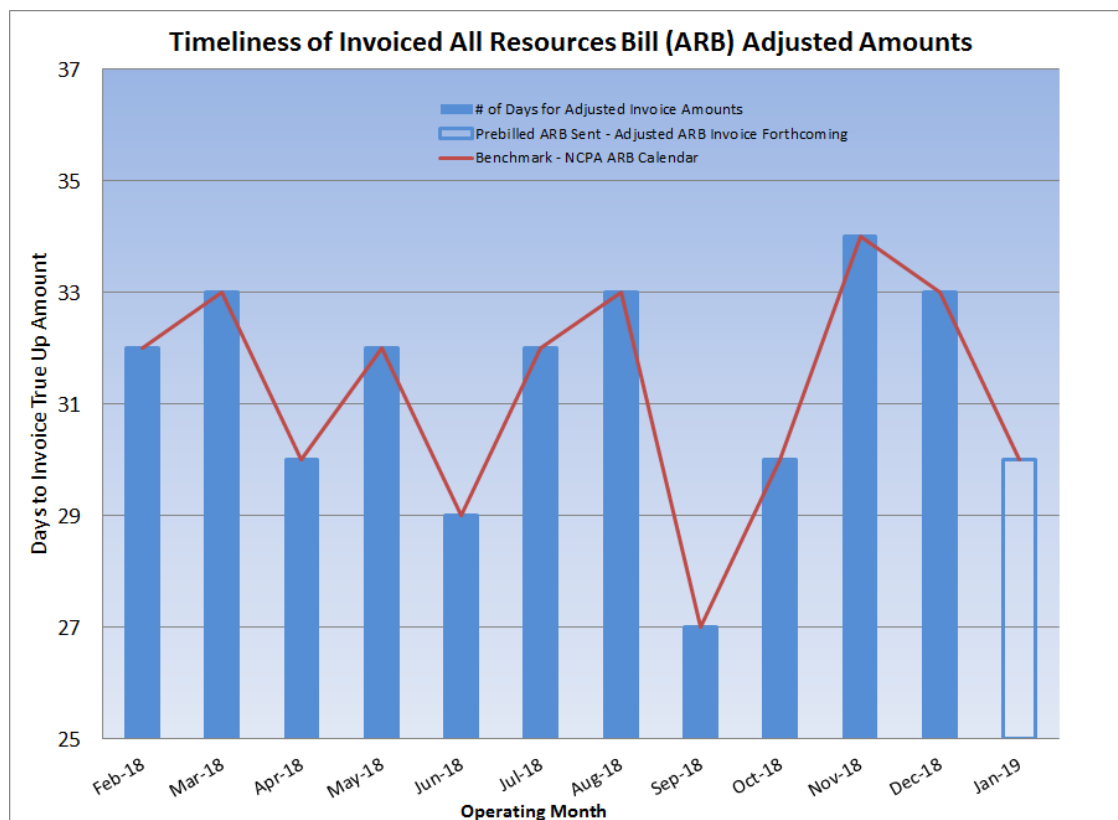
Progress Against the Strategic Plan

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

- February 2019 monthly pre-billed budget/forecast amounts;
- December 2018 (1st Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- November 2018 (2nd Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
- September 2018 (3rd Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;

- March 2018 (4th Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
- May 2017 (5th Adjustment) T+18 month recalculated CAISO settlement true-up allocations;
- February 2016 (6th Adjustment) T+33 month recalculated CAISO settlement true-up;
- November 2015 (7th Adjustment) T+35 month CAISO settlement true-up;



Legislative & Regulatory

Political Arena State/Federal/Western Programs

- On January 16 and 17, NCPA held its annual Strategic Issues Conference featuring a number of speakers highlighting the key policy and industry issues that will define the coming year. Key policymakers and industry experts covered a wide range of issues including changes in the political landscape in Washington, DC and implications for NCPA, regionalization of the California Independent System Operator (CAISO), the priorities of California’s new Governor and his administration, grid reliability, deployment of electric vehicles, wildfire policy, the implications of PG&E bankruptcy, and expansion of energy efficiency. Speakers included the Honorable Chris Holden (D-Pasadena), Chair of the California Assembly Committee on Utilities and Energy; James Robb, CEO of the North American Electric Reliability Corporation; Melanie Frye, CEO of the Western Electricity Coordinating Council; and Ron Nichols, President of Southern California Edison.

- During the conference, NCPA also recognized two individuals with awards for their outstanding contributions to public power. State Senator Steven Bradford (D-Gardena) received the NCPA Public Power Champion Award for his leadership to ensure that public investments in power supply are safeguarded as the state rapidly transitions to carbon-free resources. John Roukema, who provided nearly 38 years of outstanding service to the City of Santa Clara and its utility, received NCPA's Distinguished Service Award. Sincere thanks to all of you who took time out of your busy schedules to participate in this conference.
- On January 17th, NCPA staff presented to a group of legislative staff during a joint meeting hosted by the consultants for the Senate Energy, Utilities & Communications Committee and Assembly Utilities & Energy Committee. The majority of the meeting consisted of a briefing from the California Public Utilities Commission regarding investor-owned utility mitigation plans and policies. NCPA provided a brief overview of members' efforts related to implementation of Senate Bill 901, which requires all publicly owned utilities to adopt wildfire mitigation plans, and wildfire prevention practices and procedures.
- On February 4th, NCPA members visited Downtown Sacramento for our annual Capitol Day activities. NCPA hosted a breakfast briefing for members to kick the day off, hearing insights from guest speaker Kip Lipper, Chief Policy Advisor on Energy and Environment to the Senate President Pro Tempore. Throughout the day, members met with their legislators to discuss issues such as the need for additional action to address wildfire impacts, progress on achieving greenhouse gas emissions reductions, and ways to support regional collaboration in the context of our electricity grid. Another topic of great interest was AB 56, a new bill by Assemblymember Eduardo Garcia, that would establish a centralized energy procurement entity. The deadline for bills to be introduced in the State Legislature is February 22nd; we expect to see many more policy proposals before the deadline

Human Resources

Hires:

- Gordon Loyd joined NCPA on January 14, 2019 as an Engineer I at our Headquarters office in Roseville, CA. Gordon worked for NCPA previously spending three summers at our Hydroelectric and Geothermal projects. He has recently earned his Bachelor of Science degree in Mechanical Engineering at the University of Nevada, Reno and was a member of the University's Honors Program.
- Justin Osborne joined us on February 7, 2019 as an Operator Technician IV at our Geothermal Project in Middletown, CA. Justin has over 8 years of plant operator experience having previously worked for Ethos Energy Group as a Power Plant Operations and Maintenance Technician.

Intern Hires:

- None.

Promotions/Position Changes:

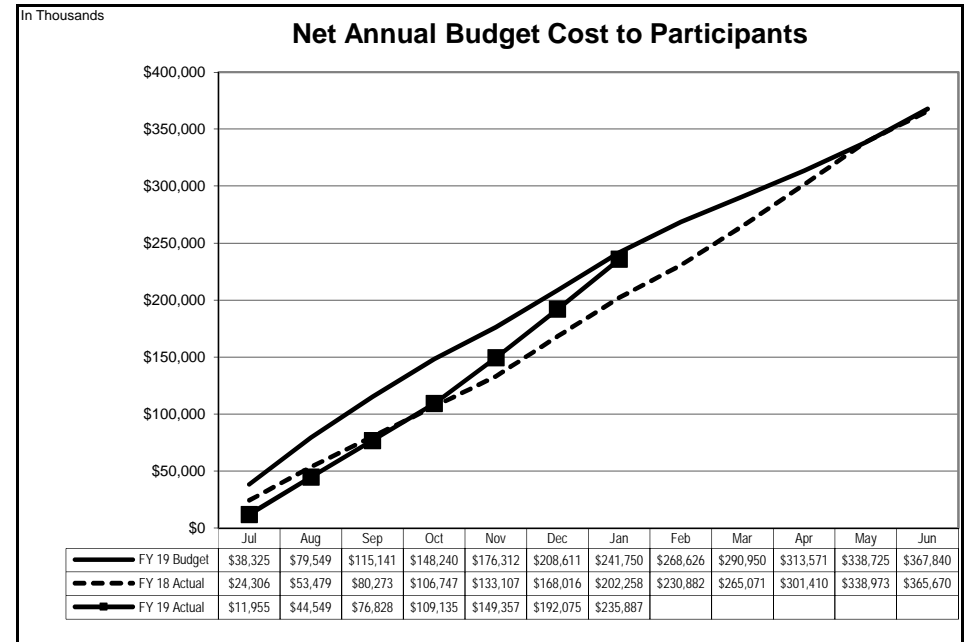
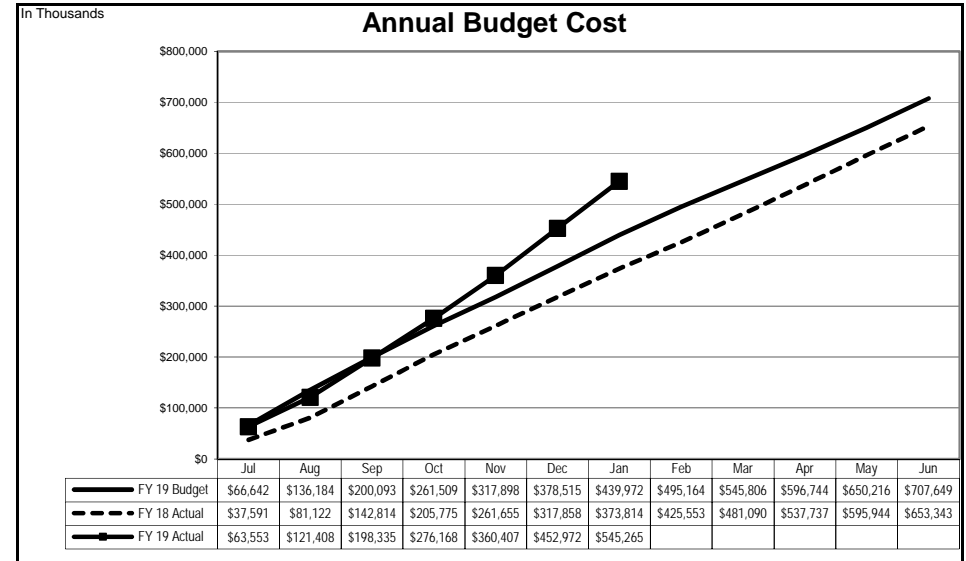
- Zakary “Zak” Liske was promoted to Supervisor I, Power Settlements at our Roseville Headquarters in Roseville, CA effective January 20, 2019. Previously Zak was the Power Settlements Analyst I. In his tenure as a Power Settlements Analyst, Zak has taken on increased responsibilities related to CAISO settlement validation, third party checkouts and NCPA’s All Resources Bill. He has been a key contributor to the continued development of the Agency’s bid-to-bill process working with other departments on integrating NCPA’s new CCA customers and further refinement to the core functions of the Power Settlements department.

Separations:

- Dennis Tarap, Supervisor II, Plant, retired from our Hydroelectric facility after 33 years of service on January 17, 2019.
- Ross Calvin, Storekeeper III, retired from our Geothermal facility after 9 years of service on January 25, 2019.

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

In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
GENERATION RESOURCES				
NCPA Plants				
Hydroelectric	51,857	29,540	\$ 22,317	43%
Geothermal Plant	34,425	20,001	14,424	42%
Combustion Turbine No. 1	8,106	4,365	3,740	46%
Combustion Turbine No. 2 (STIG)	8,743	5,462	3,281	38%
Lodi Energy Center	83,717	63,525	20,192	24%
	186,847	122,893	63,954	34%
Member Resources - Energy	64,449	34,508	29,941	46%
Member Resources - Natural Gas	3,098	3,019	80	3%
Western Resource	31,350	9,805	21,545	69%
Market Power Purchases	15,539	14,866	673	4%
Load Aggregation Costs - ISO *	273,858	276,726	(2,868)	-1%
Net GHG Obligations	1,123	1,150	(28)	-2%
	576,264	462,967	113,297	20%
TRANSMISSION				
Independent System Operator	112,822	72,491	40,331	36%
MANAGEMENT SERVICES				
Legislative & Regulatory				
Legislative Representation	2,023	1,138	885	44%
Regulatory Representation	887	316	571	64%
Western Representation	848	365	483	57%
Member Services	438	155	283	65%
	4,196	1,974	2,223	53%
Judicial Action	625	443	182	29%
Power Management				
System Control & Load Dispatch	6,107	3,286	2,821	46%
Forecasting & Prescheduling	2,775	1,418	1,358	49%
Industry Restructuring	439	188	251	57%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,135	457	678	60%
Green Power Project	3	0	3	94%
Gas Purchase Program	78	36	42	54%
Market Purchase Project	112	47	65	58%
	10,649	5,432	5,217	49%
Energy Risk Management	260	82	178	68%
Settlements	941	304	637	68%
Integrated System Support	273	95	177	65%
Participant Pass Through Costs	1,619	865	754	47%
Support Services	-	613	(613)	
	18,563	9,807	8,756	47%
TOTAL ANNUAL BUDGET COST	707,649	545,265	162,384	23%
LESS: THIRD PARTY REVENUE				
Plant ISO Energy Sales	100,456	100,220	237	0%
Member Resource ISO Energy Sales	28,187	25,106	3,081	11%
NCPA Contracts ISO Energy Sales	14,720	17,346	(2,626)	-18%
Western Resource ISO Energy Sales	23,183	12,535	10,648	46%
Load Aggregation Energy Sales	131,329	137,891	(6,563)	-5%
Ancillary Services Sales	4,409	3,272	1,137	26%
Transmission Sales	110	64	46	42%
Western Credits, Interest & Other Income	37,414	12,944	24,471	65%
	339,808	309,378	30,431	9%
NET ANNUAL BUDGET COST TO PARTICIPANTS	367,840	235,887	\$ 131,953	36%

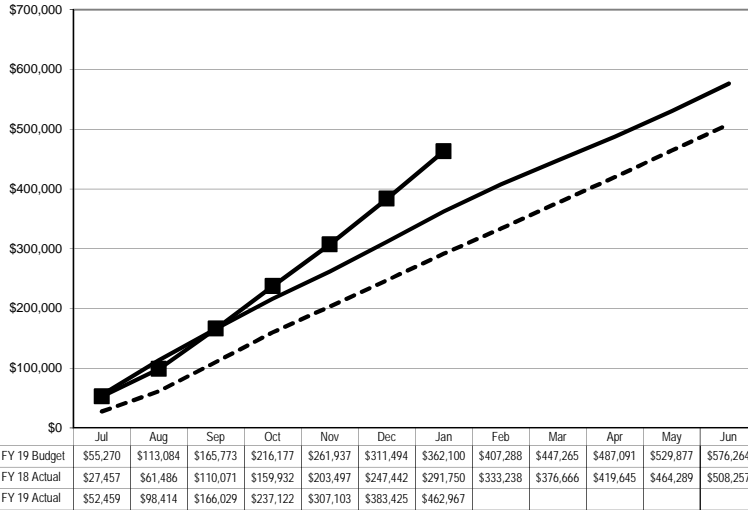


* Load Aggregation Costs - ISO adjusted to include year to date customer ISO Load Aggregation Costs (non-budgeted). Costs of \$76 million were incurred during the months of July 2018 through January 2019.

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

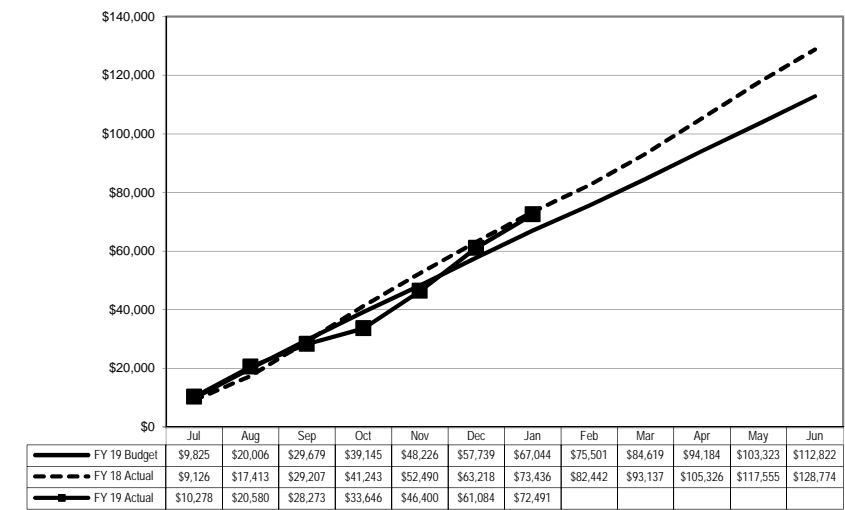
In Thousands

Generation Resources



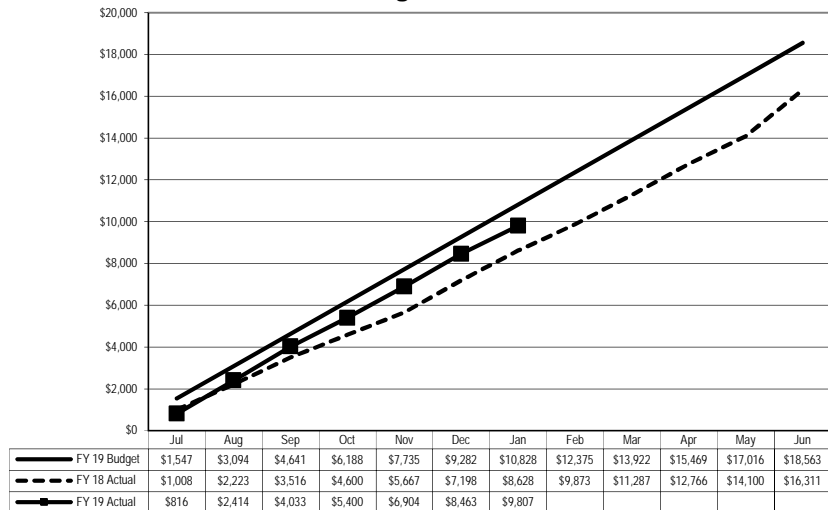
In Thousands

Transmission-ISO



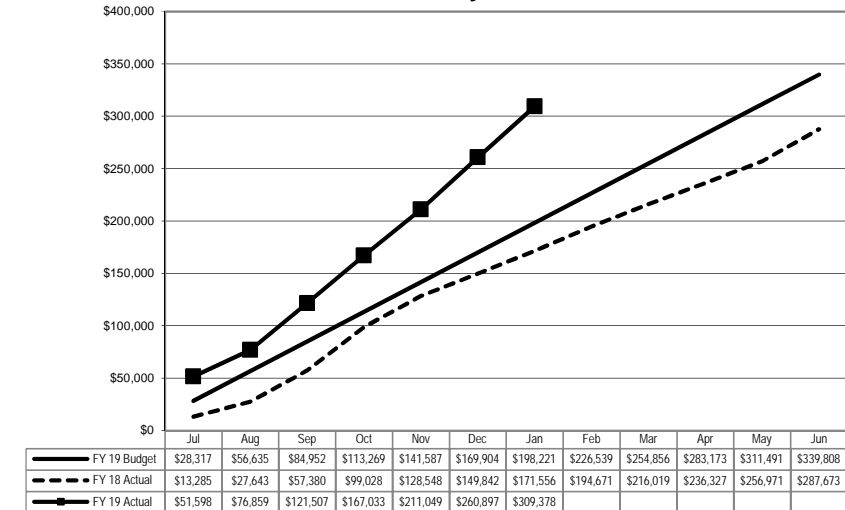
In Thousands

Management Services



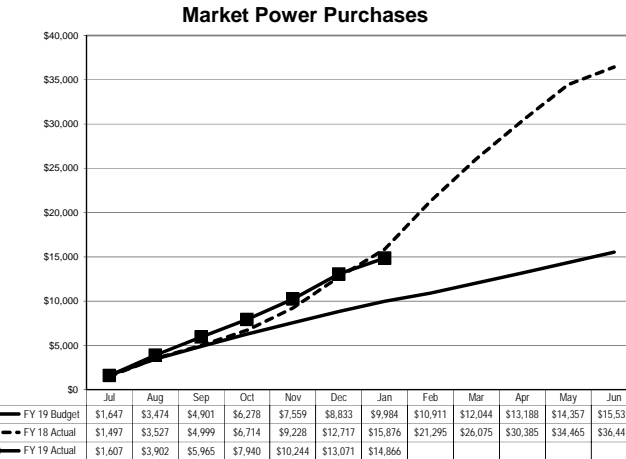
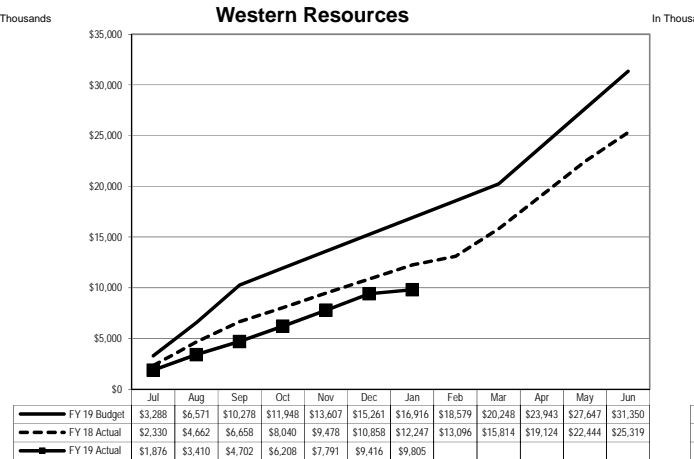
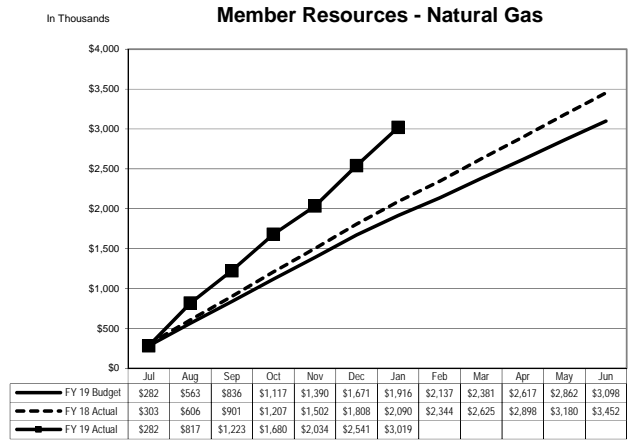
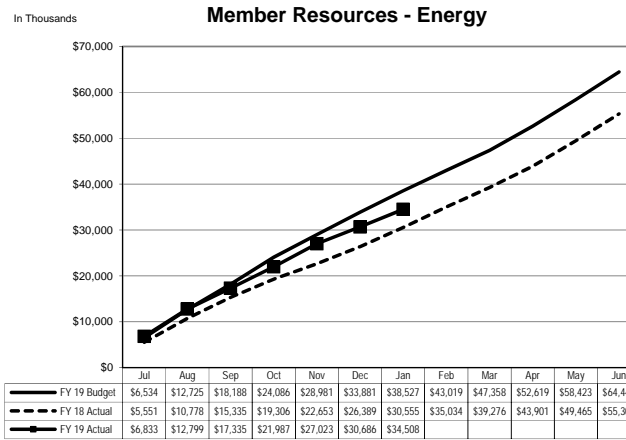
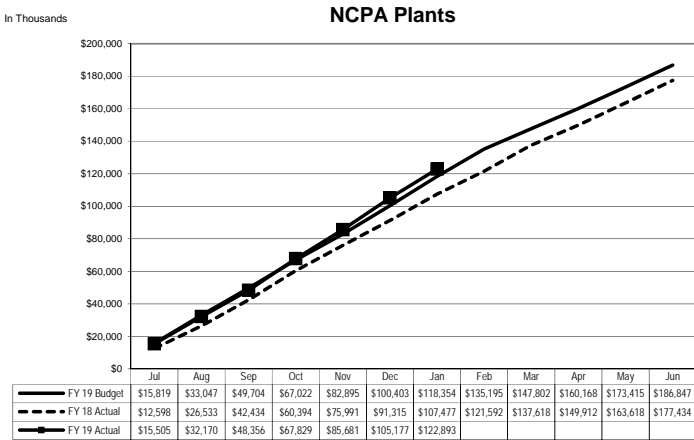
In Thousands

Third Party Revenue



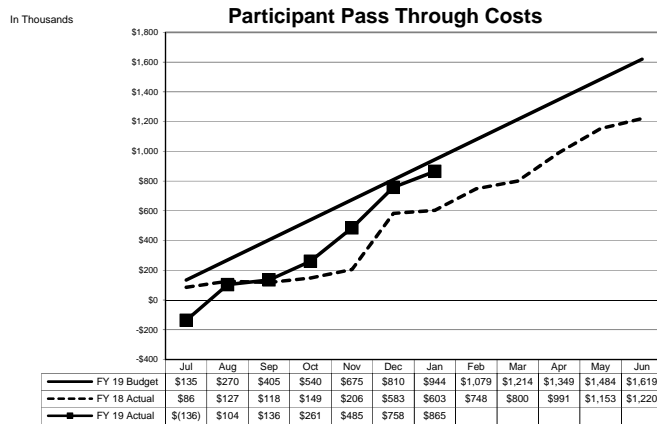
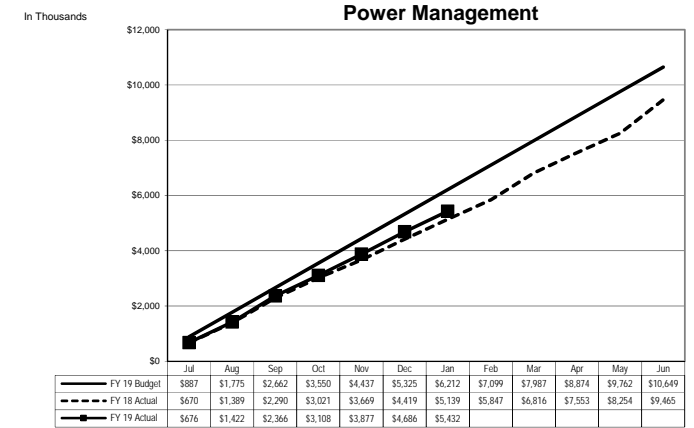
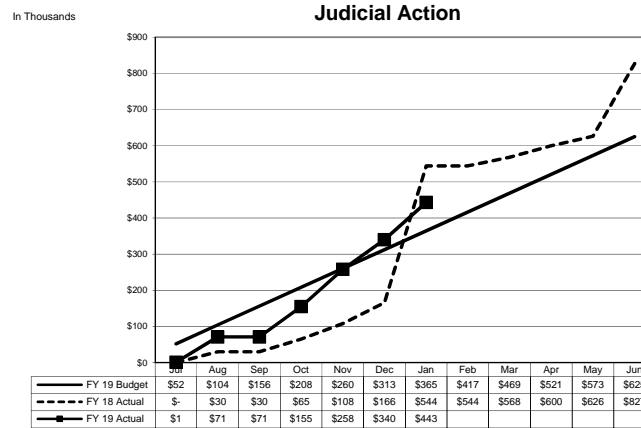
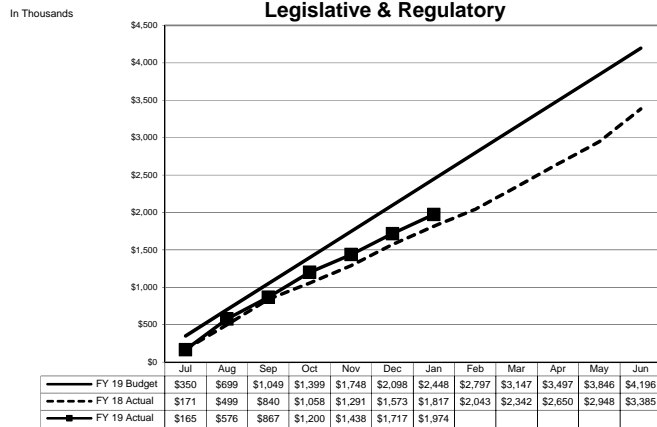
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

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

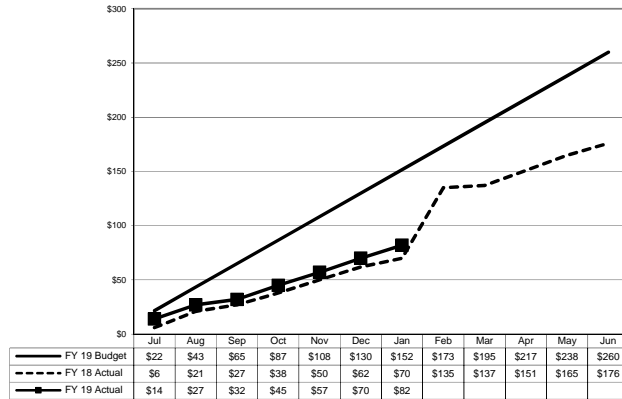


**Annual Budget Cost
Management Services Analysis By Source
As of January 31, 2019**

In Thousands

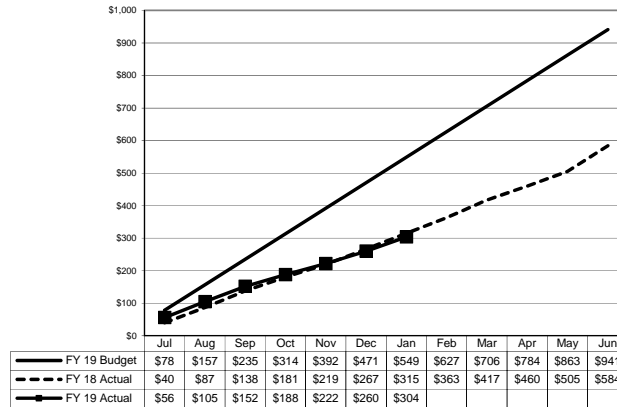
Energy Risk Management

In Thousands

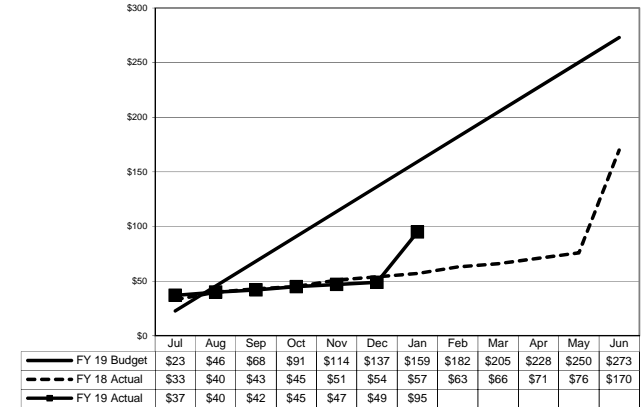


Settlements

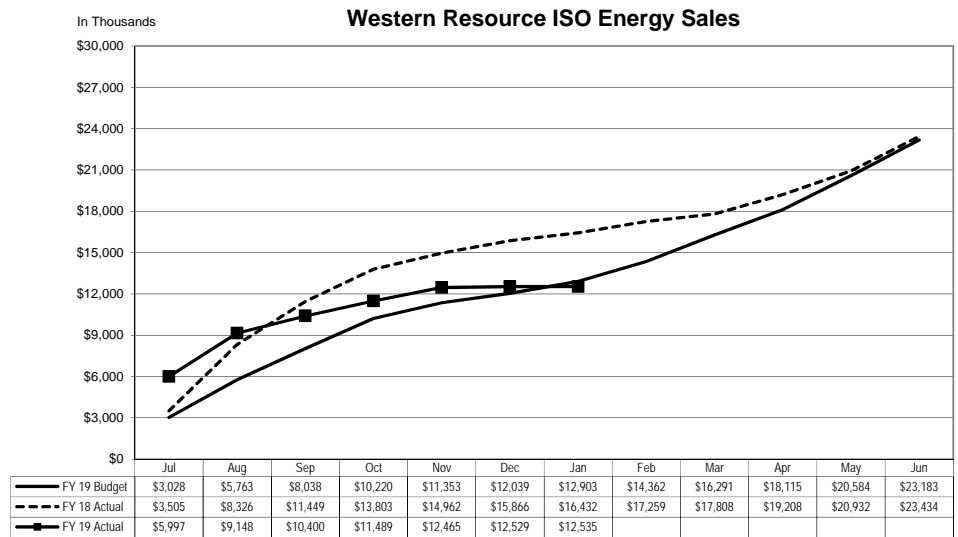
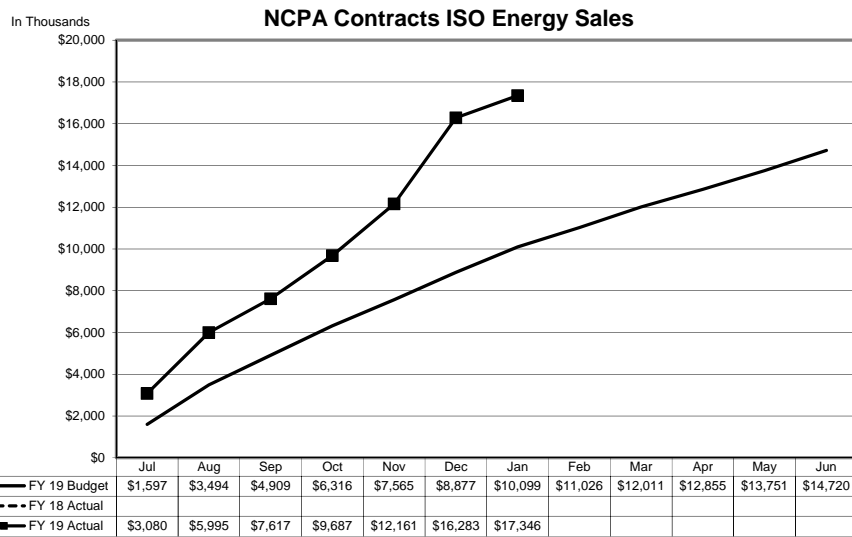
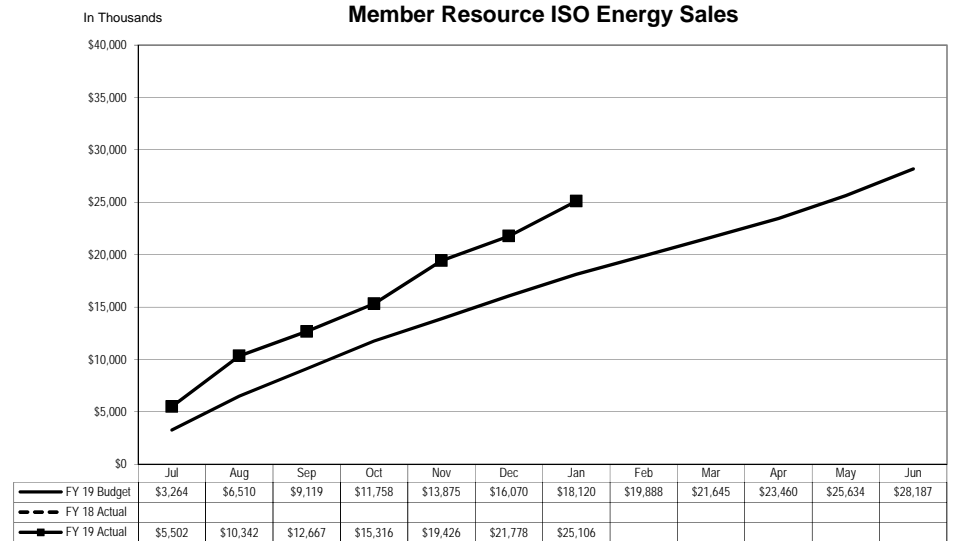
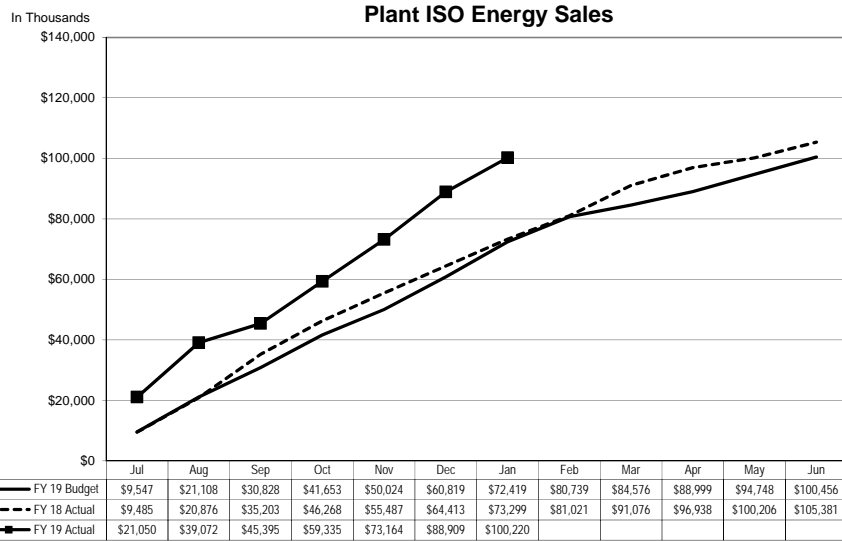
In Thousands



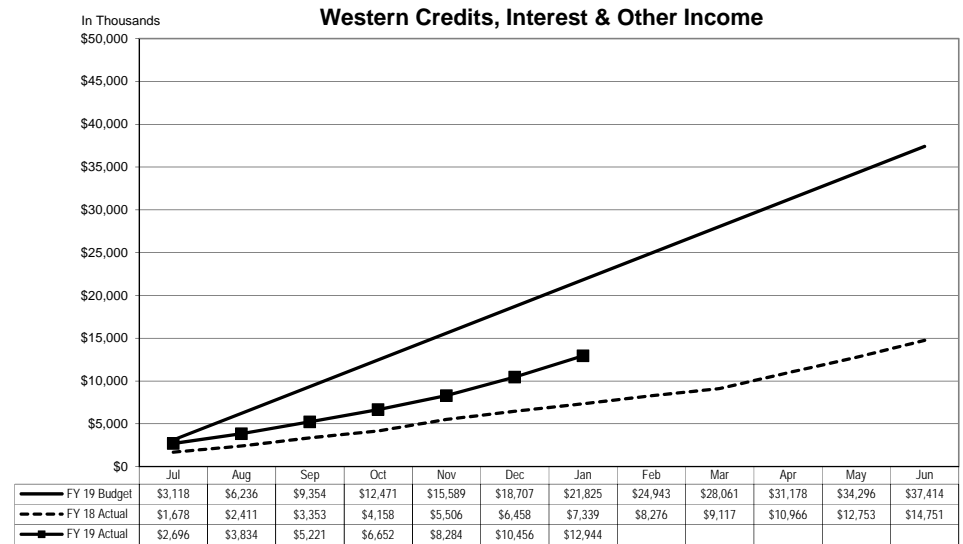
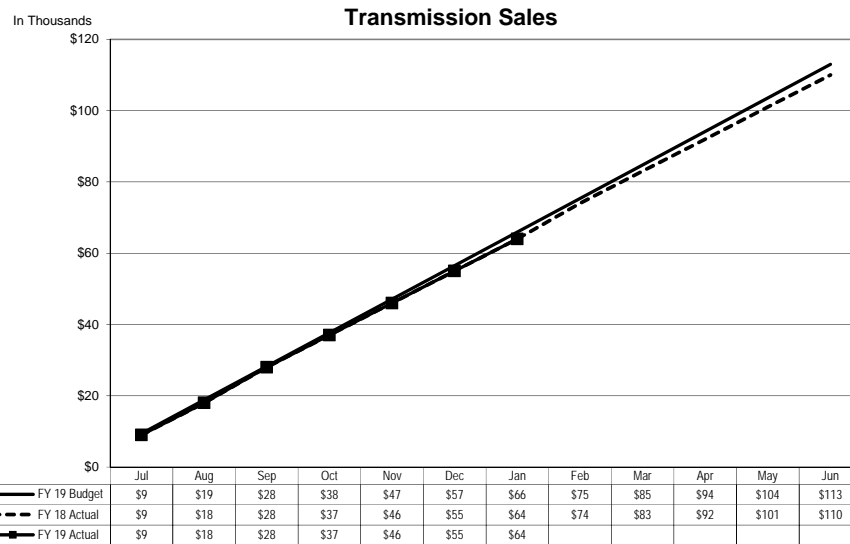
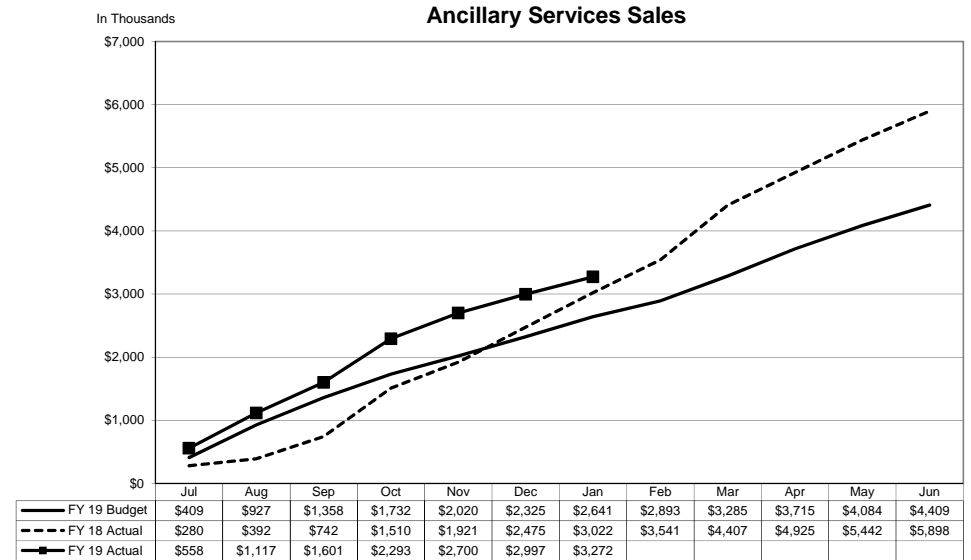
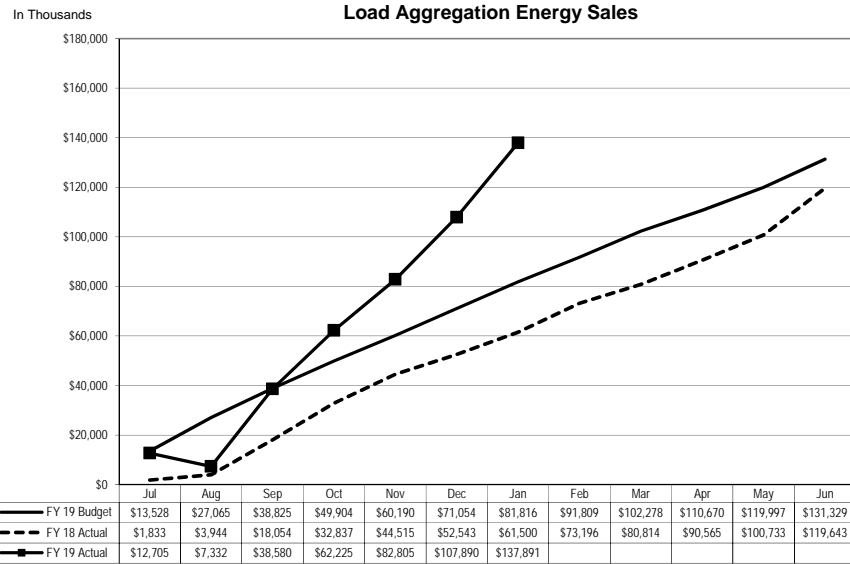
Integrated Systems Support



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



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



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

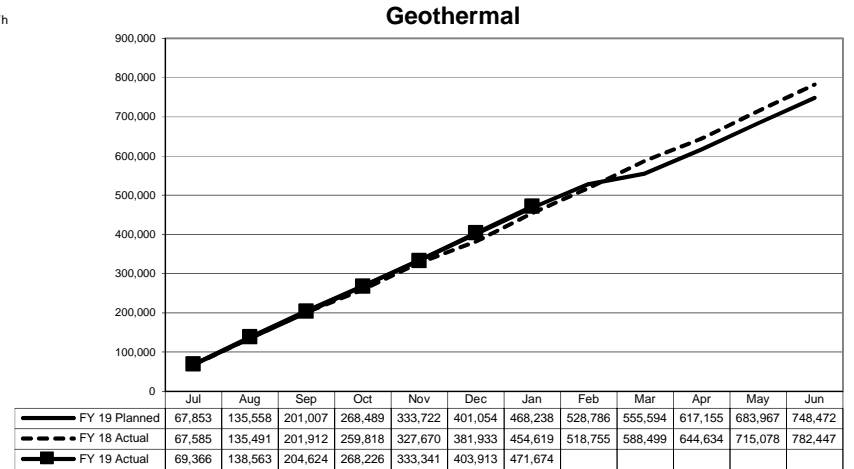
Generation Cost Analysis

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 17,793	\$ 10,517	\$ 22.30	\$ 7,276	41%
Capital Assets/Spare Parts Inventories	3,267	1,915	4.06	1,352	41%
Other Costs	8,137	4,153	8.81	3,984	49%
CA ISO Charges	291	537	1.14	(245)	-84%
Debt Service	4,937	2,890	6.11	2,057	42%
Annual Budget	34,425	20,001	42.40	14,424	42%
Less: Third Party Revenue					
Interest Income	382	221	0.47	161	42%
ISO Energy Sales	26,285	23,067	48.90	3,218	12%
Ancillary Services Sales	-	-	-	-	-
Effluent Revenues	700	1,053	2.23	(353)	-50%
Misc	110	66	0.14	44	40%
	27,477	24,408	51.75	3,070	11%
Net Annual Budget Cost to Participants	\$ 6,948	\$ (4,406)	\$ (9.34)	\$ 11,355	163%
Net Generation--MWh @ Meter	748,472	471,674			
\$/MWh (A)	\$ 2.69	\$ (15.45)			

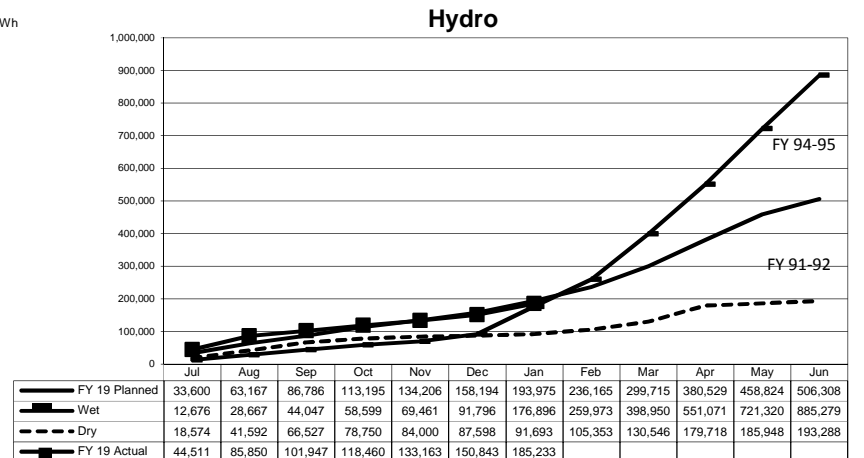
MWhs Generated

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 8,685	\$ 4,510	\$ 24.35	\$ 4,175	48%
Capital Assets/Spare Parts Inventories	1,975	955	5.16	1,020	52%
Other Costs	3,238	1,522	8.22	1,716	53%
CA ISO Charges	2,801	2,044	11.04	757	27%
Debt Service	35,157	20,508	110.72	14,649	42%
Annual Budget	51,857	29,540	159.47	22,317	43%
Less: Third Party Revenue					
Interest Income	670	272	1.47	398	59%
ISO Energy Sales	20,783	15,116	81.61	5,667	27%
Ancillary Services Sales	3,048	1,689	9.12	1,359	45%
Misc	-	1	0.00	(1)	
	24,501	17,077	92.19	7,424	30%
Net Annual Budget Cost to Participants	\$ 27,356	\$ 12,463	\$ 67.28	\$ 14,893	
Net Generation--MWh @ Meter	506,308	185,233			
\$/MWh (A)	\$ (15.41)	\$ (43.43)			

In MWh



Footnotes:

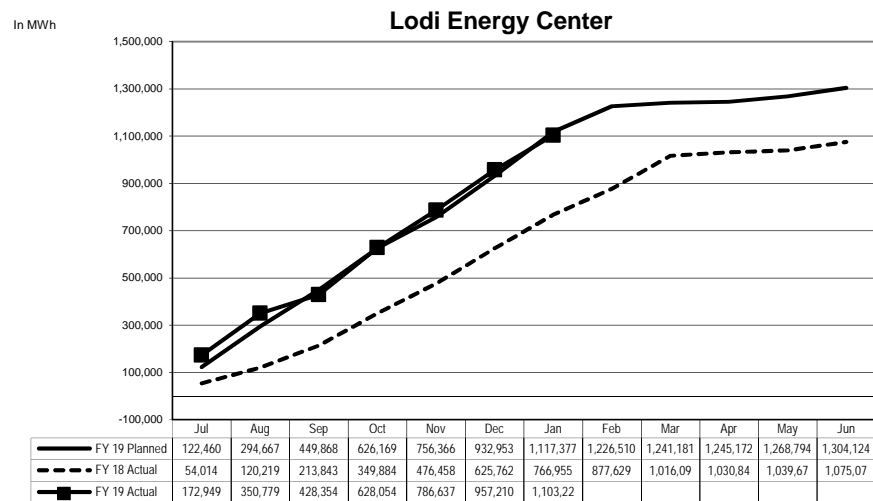
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

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

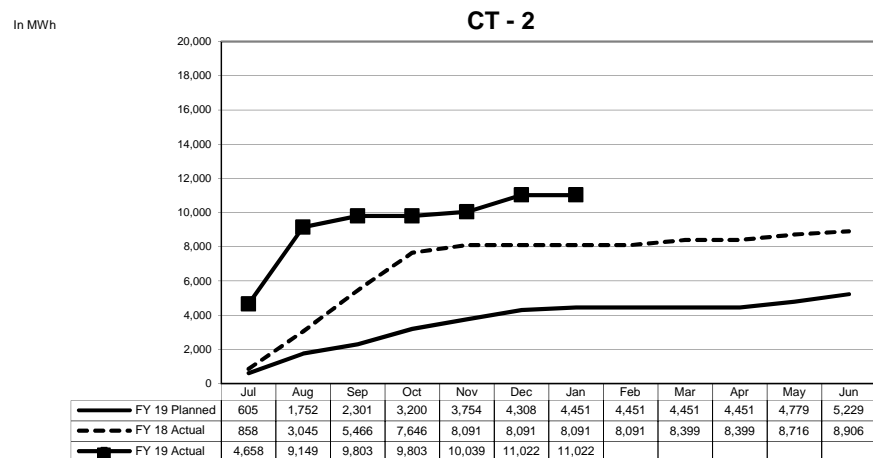
Generation Cost Analysis

	Lodi Energy Center				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 13,965	\$ 7,703	\$ 6.98	\$ 6,262	45%
Fuel	33,092	33,734	30.58	(642)	-2%
AB 32 GHG Offset	-	-	-	-	0%
CA ISO Charges and Energy Purchases	5,665	4,046	3.67	1,618	29%
Capital Assets/Spare Parts Inventories	1,613	893	0.81	720	45%
Other Costs	3,302	1,935	1.75	1,367	41%
Debt Service	26,080	15,213	13.79	10,867	42%
Annual Budget	83,717	63,525	57.58	20,192	24%
Less: Third Party Revenue					
Interest Income	386	378	0.34	8	2%
ISO Energy Sales	52,415	58,971	53.45	(6,556)	-13%
Ancillary Services Sales	1,029	1,092	0.99	(63)	-6%
Transfer Gas Credit	-	-	-	-	0%
Misc	-	0	0.00	(0)	0%
	53,829	60,441	54.79	(6,611)	-12%
Net Annual Budget Cost to Participants	\$ 29,887	\$ 3,084	\$ 2.80	\$ 26,803	90%
Net Generation--MWh @ Meter	1,304,124	1,103,225			
\$/MWh (A)	\$ 2.92	\$ (10.99)			

MWhs Generated



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,481	\$ 831	\$ 75.36	\$ 650	44%
Fuel and Pipeline Transport Charges	977	939	85.22	38	4%
Capital Assets/Spare Parts Inventories	60	8	0.74	52	86%
Other Costs	506	232	21.01	275	54%
CA ISO Charges	2	117	10.62	(115)	-5683%
Debt Service	5,717	3,335	302.54	2,382	42%
Annual Budget	8,743	5,462	495.50	3,281	38%
Less: Third Party Revenue					
Interest Income	109	59	5.35	50	46%
ISO Energy Sales	401	1,509	136.91	(1,108)	-276%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	990	1,431	129.84	(441)	-45%
Misc	-	-	-	-	0%
	1,500	2,999	272.10	(1,499)	-100%
Net Annual Budget Cost to Participants	\$ 7,243	\$ 2,462	\$ 223.40	\$ 4,781	66%
Net Generation--MWh @ Meter	5,229	11,022			
\$/MWh (A)	\$ 291.87	\$ (79.14)			



Footnotes:

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

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

Generation Cost Analysis

	Combustion Turbine No. 1				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,560	\$ 1,378	\$ 190.95	\$ 182	12%
Fuel and Pipeline Transport Charges	497	706	97.75	(208)	-42%
Capital Assets/Spare Parts Inventories	5,465	1,629	225.72	3,836	70%
Other Costs	580	281	38.99	299	51%
CA ISO Charges	3	370	51.30	(367)	-12604%
Debt Service	-	-	-	-	-
Annual Budget	8,106	4,365	604.71	3,740	46%
Less: Third Party Revenue					
Interest Income	-	1	-	(1)	-
ISO Energy Sales	572	1,556	215.61	(984)	-172%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	16	2.17	(16)	0%
	572	1,573	217.77	(1,000)	-175%
Net Annual Budget Cost to Participants	\$ 7,533	\$ 2,793	\$ 386.86	\$ 4,741	63%
Net Generation--MWh @ Meter	7,533	7,219			
\$/MWh (A)	\$ 1,000.05	\$ 386.86			

Footnotes:

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

MWhs Generated

