



651 Commerce Drive  
Roseville, California 95678  
(916) 781-3636  
[www.ncpa.com](http://www.ncpa.com)



# BUSINESS PROGRESS REPORT

**JUNE 2017**

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# Generation Costs & Reliability

## Combustion Turbine Project

### Availability/Production for May

Unit	Availability		Production		Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	1,431.1	CAISO / CAISO
	100.00%	99.49%	Unit 2	1,144.1	
Curtailments & Outages			None. / May2nd - IGV Position Error		
CT1 Lodi	96.71%		437.6 MWHr		CAISO
Curtailments & Outages			03-May-17 17:32 18:38 Auto Shut Down from bad contacts 05-May-17 19:00 23:59 Auto Shut Down from bad contacts 06-May-17 0:00 8:18 23-May-17 18:00 18:35		
CT2 STIG	96.77%		580.3 MWHr		CAISO
Curtailments & Outages			Planned Annual Maintenance Outage, Forced out on 5/22 from Turning Gear Oil Leak		
LEC	12.91%		3,439.8 MWHr		CAISO market calls on 29th and 30th.
Curtailments & Outages			May 27 - Test Ran Simple CT after May outage.		

**Maintenance Summary – Specific per asset above.**

## Geothermal Facilities

### Availability/Production for May

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	100 %	19,200 MWh	Unit 1 had no outages for the month.
Unit 2	100 %	*17,451 MWh	Unit 2 had no outages for the month.
Unit 3	N/A %	N/A	Unit 3 remains out of service for the month of May.
Unit 4	100 %	30,276 MWh	Unit 1 had no outages for the month.
Southeast Geysers Effluent Pipeline	77 %	190.5 mgallons	Average flow rate: 4,366 gpm
Southeast Solar Plant	N/A	144,959 KWh	Year-to-date KWh: 418,545
Bear Canyon Pump Station Zero Solar	N/A	264,349 KWh	Year-to-date KWh: 768,346

\* Accounts for an additional 1,903 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

## Hydroelectric Project

### Availability/Production for May

Units	Availability	Net Electricity Generated	Out-of-Service
<b>Collierville Unit 1</b>	100.00 %	75,797 MWh	CV #1 unit no reportable outages.
<b>Collierville Unit 2</b>	93.78 %	70,527 MWh	CV #2 unit was out of service on 05/30/17 at 0139 through 05/31/17 at 2359 due to generator stator ground fault.
<b>Spicer Unit 1</b>	100.00 %	1,866 MWh	NSM #1 unit no reportable outages.
<b>Spicer Unit 2</b>	100.00 %	1,868 MWh	NSM #2 unit no reportable outages.
<b>Spicer Unit 3</b>	100.00 %	338 MWh	NSM #3 unit no reportable outages.

### Operations & Maintenance Activities:

- Monthly CMMS work orders
- NCPA/Campground concessionaire Meeting and Public Safety preparations
- Adit 4 Slide repair contractor Mobilization
- Beaver Creek Diversion Reservoir debris clean out in progress
- Collierville/Bellota 230kv transmission line patrol and vegetation removal
- Collierville Unit 2 Stator Ground Fault trouble shooting

## Environmental, Health & Safety (EH&S) Projects

### Incident Reports

- There were no vehicle accidents, no recordable incidents, and no lost time accidents that occurred in May.
- 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 as updated through the payroll period ended May 27, 2017.
- 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.

### May Generation Services Safety Report

	Hydro	GEO	CT Group *	NCPA HQ **
CalOSHA Recordable (this month)	0	0	0	0
CalOSHA Recordable (calendar year)	0	1	0	0
Days since Recordable	892	139	782	5,850
Work Hours Since Last Recordable	75,541	27,538	115,758	2,105,353
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	1	0	0
Days without LTA	3,508	123	8,686	4,779
Work Hours without LTA	321,106	24,633	557,122	1,727,373
Vehicle Incident (month)	0	0	0	0
Vehicle Incident (calendar year)	0	0	1	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 May 27, 2017.

# 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 2017 Data

	May 2017		Calendar Year 2017	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	405.43 5/3 @1700	195,606	405.43 5/3 @1700	951,631
SVP	541.54 5/3 @1700	314,238	541.54 5/3 @1700	1,490,404
MSSA	946.97 5/3 @ 1700	509,844	946.97 5/3 @ 1700	2,442,035

### Last Year 2016 Data\*

	May 2016		Calendar Year 2016	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	407.78 5/31 @1700	193,700	449.75 7/27 @ 1700	942,353
SVP	499.05 5/31 @ 1600	295,984	534.21 9/26 @ 1700	1,437,762
MSSA	906.65 5/31 @ 1700	489,684	968.73 7/27 @ 1600	2,380,115

\*Last year's data added for comparison purposes only

### System Peak Data

	All Time Peak Demand	2017 Peak Demand
NCPA Pool	517.83 MW on 7/24/2006 @ 1500	405.43 5/3 @1700
SVP	541.54 MW on 5/3/17 @ 1700	541.54 5/3 @1700
MSSA	988.56 MW on 7/8/2008 @ 1500	946.97 5/3 @ 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

	May 2017	Calendar Year 2017
MSSA % Within the Band	97.98%	96.86%

- North Fork, Beaver Creek, and McKay's spilling for most of the month of May.
- Spicer began spilling on the afternoon of May 29.
- Spicer Meadows:
  - No curtailments
- Geothermal Units:
  - May 10 @ 0725 – 0858, Unit 2 derated about 10mw to replace a circulating water pump oil seal.
- Lodi Energy Center:
  - May 1 – 27, LEC out of service for annual maintenance.
- Alameda CTs:
  - May 2 @ 1400 – 1745, Unit 2 o/s due to inlet guide vanes trouble.
- Lodi CT:
  - May 3 @ 1732 - 1838, Unit off line due to control software trouble.
  - May 5 @ 1900 – May 6 @ 0818, Unit o/s due to generator relay action and troubleshooting.
  - May 23 @ 1800 – 1835, Unit late paralleling to the grid.
- Collierville Units:
  - Throughout the month, Units 1 & 2 derated varying amounts due to runner interference caused by high tailwater conditions.
  - May 30 @ 0139, Unit 2 o/s due to stator ground fault. Remains o/s.
- STIG:
  - May 1 – 14, Unit out of service for annual maintenance.
  - May 21 @ 1729 – May 22 @ 1344, Unit o/s due to oil leak.

### **Pooling & Portfolio Planning & Forecasting**

- Actual NCPA Pool load of 195.6 GWh in May equaled 99.8% of the pre-month forecast of 196.1 GWh as relatively mild weather continues.
- Pool load, running 32 GWh through June 5<sup>th</sup> is likely to reach the forecast of 201.2 GWh assuming temperatures begin to rise, as normally is the case during June.
- The Lodi Energy Center (LEC) generated 618 MWh for the pool in May, while the forecast (due to the scheduled maintenance outage) was zero. Strong hydro and renewable generation continues to keep implied heat rates relatively low, but as June warms generation is forecasted to rise to 5.4 GWh.
- For the month of May, 0.73 inches of rain was recorded at Big Trees gage. The May average Big Trees precipitation is 2.20 inches.



- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) remains at \$0/MWh (seeking net positive value between energy and A/S revenues).
- NSMR storage as of May 31 was at 189,000 acre feet. The historical average NSMR storage at the end of May is 136,446 acre feet. As of June 19, NSMR storage is 189,000 acre feet. The NCPA Pool share of NSMR storage is 96,352 acre feet.
- Combined Calaveras Project generation for the Pool in May totaled 75.0 GWh, down from 79.0 GWh in April. The Pool's 75.0 GWh in May was less than the pre-month forecast of 85.4 GWh. Through June 19, Calaveras generation for the Pool (28.4 GWh) is running below the month's forecast for 80.8 GWh - this is primarily due to the Collierville Unit 2 forced outage in the first half of the month of June.
- Western Base Resource (BR) Pool delivery Pool in May 2017 was 116.6 GWh compared to the forecast of 88.2 GWh. Through June 5, BR pool allocations over 20 GWh should be well on the way to meet the June forecast of 94.6 GWh.
- PG&E City-Gate gas index traded at \$2.99/MMBtu for June 5 delivery - compared to an average of \$3.376/MMBtu (with a high of \$3.505/MMBtu) for the month of May. Prices rose sharply during the spring before falling back at the beginning of the month on mild weather and ample inventory. While the PG&E Bidweek price for June gas averaged \$3.42, daily Platt's prices have recently been running much lower.
- Day-ahead HLH (on-peak) NP15 electricity remains relatively low on average with spikes occurring on days with highest load and least wind. The HLH and LLH day-ahead average LMPs for June 5 delivery were \$33.26 and \$17.54/MWh, respectively.

NCPA Pool Loads & Resources Value Summary								
Peak and Energy Summary May-17					Estimated Production Costs		Cost of Serving Demand	
Demand	Coincident Peak (MW) May-03-17 Hour 17	Total MWh	Forecast Values	Avg. MW	NCPA Pool		Totals	Avg (\$/MWh)
					Cost/Revenue (Estimate)	Variable Cost (\$/MWh)		
	405.4	195,573	196,062	262.9	N/A	N/A		
WAPA	2.0	116,552	88,224	156.7	\$ 2,229,080	\$ 19.13	\$ 6,200,548	\$ 31.70
Geothermal	-	28,626	28,735	38.5	543,891	19.00		
Hydro	-	76,719	83,280	103.1	460,317	6.00		
Stig & CTs	-	2,059	-	2.8	144,458	70.17	<b>at Variable Cost of Pool Generation</b>	
LEC	-	618	-	0.8	24,098	39.00		
Contracts	294.0	79,489	88,769	106.8	4,765,043	59.95	\$ 5,252,941	\$ 26.86
Market - Net (Net Sales = Negative)	109.4	(108,490)	(92,946)	(145.8)				
<b>Net Total</b>	<b>405.4</b>	<b>195,573</b>	<b>196,062</b>	<b>262.9</b>	<b>\$ 8,166,887</b>	<b>\$ 26.86</b>		

Monthly Market Summary							
	Pool Energy (MWh)	HLH Avg (\$/MWh)	MCP (\$/MWh)	Avg Variable Cost of Pool Generation (\$/MWh)	Forward Prices (EOX NP15 HLH Ask Prices)		
					NP15 5/1/2017 (\$/MWh)	6/1/2017 (\$/MWh)	
Jul-16	216,062	\$ 36.40	\$ 38.15		Jul-17	\$ 33.86	\$ 33.81
Aug-16	215,007	\$ 37.71	\$ 41.27		Aug-17	38.37	36.47
Sep-16	199,228	\$ 36.67	\$ 45.69		Sep-17	37.17	35.37
Oct-16	192,514	\$ 35.69	\$ 39.08		Q3 2017	\$ 36.47	\$ 35.22
Nov-16	187,997	\$ 31.67	\$ 39.08		Q4 2017	37.57	36.72
Dec-16	204,678	\$ 38.29	\$ 39.08		Q1 2018	37.53	36.26
Jan-17	205,675	\$ 36.58	\$ 23.70		CY2018	\$ 33.83	\$ 34.07
Feb-17	178,642	\$ 30.61	\$ 24.41		CY2019	33.17	33.81
Mar-17	192,408	\$ 23.37	\$ 25.43		CY2020	35.68	35.27
Apr-17	179,239	\$ 23.39	\$ 31.47		CY2021	37.81	37.13
May-17	195,573	\$ 31.70	\$ 26.86		CY2022	38.45	37.89
Jun-17					CY2023	40.05	39.45

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.

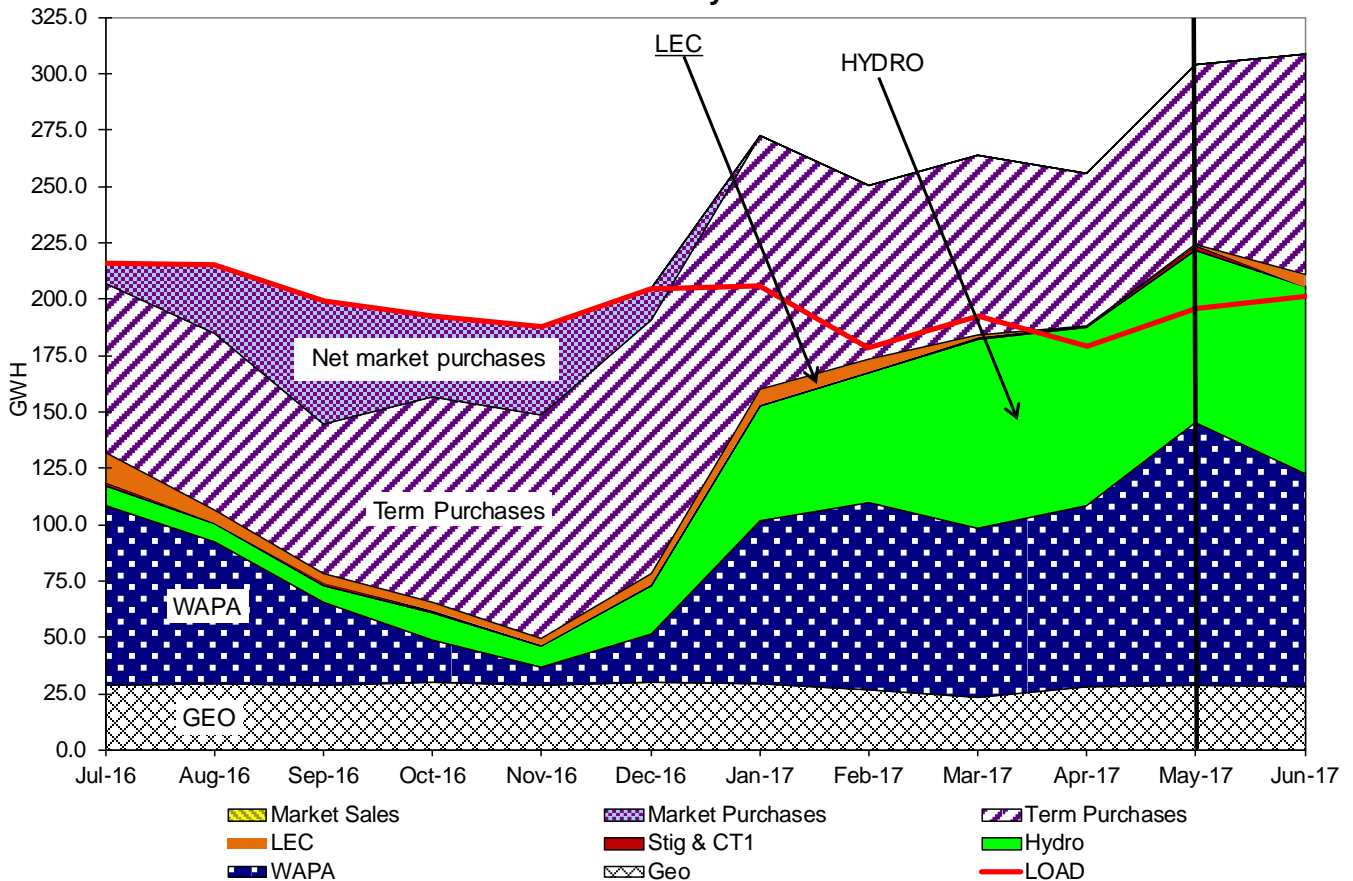
\* STIG & CT costs reflect \$2.60 and \$1.62/MWh variable O&M costs per 6-12-06 GSCA.

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.

### NCPA POOL RESOURCES 2016-17 FISCAL YEAR: Jul-May 2017 Actual - bal Forecast



## **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 August 2017:
  - Monthly System Resource Adequacy Demonstration (filed June 16, 2017)
  - Monthly Supply Plan (filed June 16, 2017)

### **Industry Restructuring**

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

#### **Commitment Costs and Bidding Enhancements**

- Through this initiative the CAISO will evaluate the following two topics: (1) if commitment proxy costs, generated bids, and default energy bids allow scheduling coordinators to accurately reflect and recover their generators' unit-specific costs; and (2) if changes to the economic bidding of commitment costs and associated market power mitigation methodology could increase market benefits when bidding under competitive market dynamics.

#### **Transmission Access Charge Options**

- The current CAISO transmission access charge is a two-part rate for each megawatt hour of internal load and exports and is used to recover transmission revenue requirements. Revenue requirements for facilities rated 200 kV and above are recovered through a system-wide rate, while requirements for facilities rated below 200 kV are recovered via specific rates for each participating transmission owner. This initiative will determine if the same structure would be appropriate should a transmission owner with a load service territory join the CAISO as a new participating transmission owner.

#### **Regional Resource Adequacy**

- This initiative will evaluate resource adequacy tariff provisions appropriate for use in a regional ISO balancing authority area that encompasses multiple states. NCPA's main objective in this initiative will be to preserve the members' local control and unique treatment as a load-following MSS.

#### **Bid Cost Recovery Enhancements**

- In this initiative CAISO is evaluating changes to the way IFM and Real-Time Market Bid Cost Recovery (BCR) costs are allocated to market participants. More specifically, CAISO is evaluating if the Self-Scheduling offset currently incorporated into the IFM BCR should be removed, and if Real-Time Market BCR costs should be allocated using a two (2) tier mechanism. As a market participant who is exposed to BCR costs, NCPA has an interest in this stakeholder process; therefore, NCPA will closely monitor the development of this initiative.

## Review of TAC Structure

- As described in the CAISO 2017 Stakeholder Initiative Catalog, during calendar year 2017 the CAISO will conduct a stakeholder initiative process to consider possible changes to the structure of the Transmission Access Charge (TAC). The CAISO currently charges the TAC to each MWh of metered internal end-use load (i.e., Gross Load) and exports, to recover participating transmission owners' costs of owning, operating and maintaining transmission facilities under CAISO operational control. Included in the initiative scope will be questions such as: (1) whether the current purely volumetric TAC rate structure should be retained, or should be changed to include other factors such as peak demand; and (2) whether the billing determinant for internal load should be modified to account for the load that is offset by the energy output of Distributed Energy Resources (DER).

## **Western**

### Western Base Resource Tracking (NCPA Pool)

Western Base Resource Tracking - NCPA Pool							
	Actual			Costs & Rates			
	BR Forecast <sup>1</sup> (MWh)	BR Delivered (MWh)	Difference (MWh)	Base Resource & Restoration Fund (\$)	Monthly Cost of BR <sup>2</sup> (\$/MWh)	CAISO LMP Differential <sup>3</sup> (\$/MWh)	12-Mo Rolling Avg. Cost of BR <sup>4</sup> (\$/MWh)
Jul-16	59,229	79,774	20,545	\$2,185,609	\$ 27.40	\$ 1.60	\$ 52.56
Aug-16	45,311	62,933	17,622	\$2,185,609	\$ 34.73	\$ 0.74	\$ 50.43
Sep-16	26,431	37,235	10,804	\$2,125,890	\$ 57.09	\$ 0.22	\$ 50.14
Oct-16	19,823	19,056	(767)	\$1,135,901	\$ 59.61	\$ 0.19	\$ 50.53
Nov-16	13,184	8,026	(5,158)	\$1,135,901	\$ 141.53	\$ 0.33	\$ 50.58
Dec-16	16,048	21,742	5,694	\$1,135,901	\$ 52.24	\$ 0.12	\$ 48.62
Jan-17	-	72,578	72,578	\$1,135,901	\$ 15.65	\$ 0.10	\$ 41.38
Feb-17	13,801	82,955	69,154	\$1,135,901	\$ 13.69	\$ 0.14	\$ 35.46
Mar-17	47,259	75,363	28,104	\$1,135,901	\$ 15.07	\$ 0.03	\$ 32.62
Apr-17	52,011	80,464	28,453	\$2,279,529	\$ 28.33	\$ 1.11	\$ 30.68
May-17	76,515	116,552	40,037	\$2,279,529	\$ 19.56	\$ 0.19	\$ 28.29
Jun-17	76,360	-	(76,360)	\$2,279,529	\$ 29.85	\$ -	\$ 28.04
1/	As forecasted in NCPA 16/17 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.						

- MEEA pricing (market efficiency enhancement agreement) producing a savings of approximately \$20,000 for the Pool in May 2017, while the Displacement Program saved Pool Members about \$81,500 for a total combined saving of \$101,500 for the month.

## **Debt and Financial Management**

- As predicted in last month's BPR, the Federal Reserve on June 14<sup>th</sup> raised interest rates a quarter of a point to a range between 1 percent and 1.25 percent, citing the relatively steady growth of the economy and need to return to higher baselines. The Federal Open Market Committee (FOMC) also hinted toward future hikes this year, saying it "expects that economic conditions will evolve in a manner that will warrant gradual increases in the federal funds rate."
- The two-year Treasury yield ended the month slightly higher at 1.28%, rising 2 basis points (bps), while the yield on the 10-year Treasury fell 8 bps to 2.20%.
- Municipal new issuance declined in May with an 18.1% drop in long-term bond sales to \$35 billion from \$42.7 billion in the same month last year. This was, once again, due largely to a significant decrease in refundings which were down 17.1% to \$30.4 billion from \$36.6 billion the same month last year. Year-to-date (YTD) long-term sales are down 12.9% to \$155.2 billion from \$178.2 billion in the same period last year, according to the Municipal Market Monitor (TM3) data.

## **Schedule Coordination Goals**

### **Software Development**

- Testing of the Scheduling Software Suite for Santa Clara's 'SNCL' SCID for its non-MSS (Metered Sub-System) portfolio continues. The Scheduling Software Suite includes MARS (Member and Resource System) database, Deal Manager application, Prescheduler application, PAGES (Power Agency Grid Energy Scheduler) application and TABS (Trading and Bidding System) application.
- IS Staff continues to perform research and development on the utilization of Business Intelligence software technology to provide better data analysis capabilities to both internal staff and members. Prototypes are being developed to demonstrate the capabilities and the usefulness of the technology.
- IS staff continues to work on the new Interval Reading schema to replace the legacy Meter schema. This project will last several months to complete the migration of the existing data and to redirect the applications to use the new model. The target is to finish by the end of 2017.
- Various other Software Development are underway. The NERC-WECC Compliance Matrix is a tool to aid the Compliance Working Group to track standards compliance. The Risk Management App is a tool for the Risk Manager to maintain counterparty credits and ratings, and provides Mark-to-Market report to the business users. The Green House Gas Accounting App is a tool for the business user to track GHG transactions by Member. The Shared Services App has 3 modules pertaining to Training, Support Service and Vendor Contract. It calculates the billable amount for the Member's portion of the Shared Services.

## **Network**

- Work continues on preparing to migrate e-mail from on-premise to Office 365. The Information Services department has moved over all of their mailboxes and continues testing. Scheduling to move the rest of the Agency over in the coming month.
- Additional collaboration sites are being created to expand the functionality of the Agency's new extranet, "NCPA Connect". This will provide further capabilities to share and edit documents for specific working groups and committees.
- Information Services student interns began work in May. They are working to help document existing and future business processes along with helping to setup a Cyber Incident Response Exercise for members and business partners, which is planned to be scheduled sometime in July.
- Work continued throughout April May in preparation for onboarding the Merced Irrigation District MEID scheduling coordination portfolio into the Agency's bidding, scheduling, and metering systems. Network communications have been configured, point-to-point testing has been completed and dispatch SCADA screens have been created. Successfully deployed MID's Merced Falls hydro resource into the new MEID scheduling coordination portfolio effective on March 24, 2017, with operational SCADA telemetry and metering.
- AT&T and CAISO ECN circuit upgrades continue with high voltage protection being installed at the City of Healdsburg. Expected to have the circuit cutover from the current 56k by end of June.

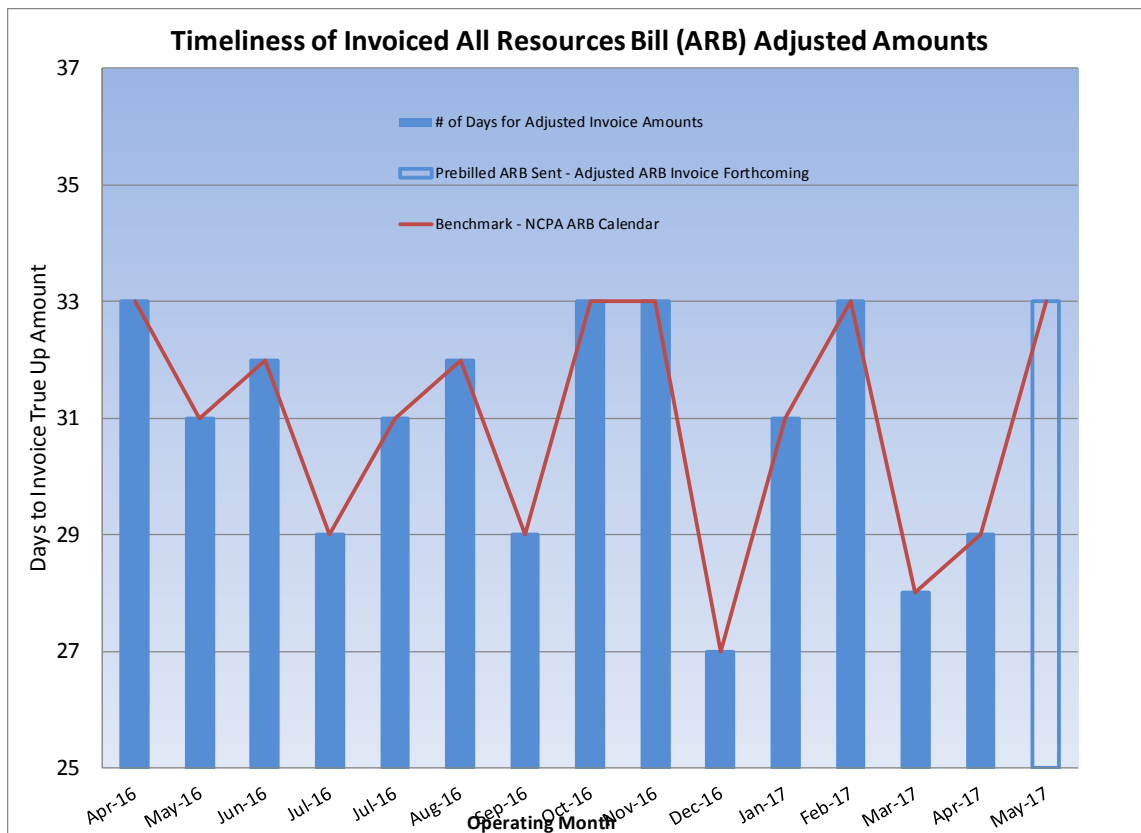
## **NCPA Bills & Settlements**

### **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 June 2017 NCPA All Resources Bill (ARB) monthly invoice sent to members on May 23, 2017 contains:

- June 2017 monthly pre-billed budget/forecast amounts;
- April 2017 (1<sup>st</sup> Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- March 2017 (2<sup>nd</sup> Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
- January 2017 (3<sup>rd</sup> Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
- July 2016 (4<sup>th</sup> Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
- September 2015 (5<sup>th</sup> Adjustment) T+18 month recalculated CAISO settlement true-up allocations;
- April 2014 (6<sup>th</sup> Adjustment) T+35 month CAISO settlement true-up



## Legislative & Regulatory

### Political Arena State/Federal/Western Programs

- NCPA has been active at the State Capitol advocating on behalf of the Agency and its member utilities. Major legislative issues include the future of the Cap and Trade Program and SB 100, which includes a 100% clean energy goal by 2045. NCPA is coordinating with its members and other public power groups to support the continuation of the Cap and Trade program beyond 2020 and to negotiate amendments to SB 100 that provide more flexibility and protections for public power. As part of these efforts, NCPA is working with the governor’s office and the Senate pro Tem’s staff.
- NCPA submitted to the Bureau of Reclamation (Reclamation) comments on Version 9 of their “Conceptual Approach for Participation by Central Valley Project (CVP) Water Contractors in the California WaterFix (CWF).” Our comments expressed the need to include a clear provision in any future agreements or Record of Decision to ensure that no direct or indirect cost impacts are passed onto CVP power customers. Additionally, we recommended that the proposed CWF Water Accounting Process include clear provisions for transparent and regular power accounting to be shared with the Western Area Power Administration for all energy transactions that involve CVP facilities impacted by CWF.

- NCPA staff has been working closely with members to finalize a final package of regulatory filings that are due by the end of this month at the California Energy Commission (CEC) and the California Air Resources Board (CARB). On or before July 1, NCPA members will be submitting reports to the CEC that show full compliance with statewide RPS program targets for the 2014-16 compliance period. At the same time, members will describe to CARB how their respective cap-and-trade auction proceeds are being utilized for investments in clean generation at the local level. Finally, NCPA is developing a final rooftop solar report for all public power utilities, required to be submitted to the CEC under the provisions of Senate Bill 1 (Statutes of 2006).

## **Human Resources**

### **Hires:**

Mary Trigo joined NCPA on June 5, 2017, as Accounting Clerk II at our Headquarters office in Roseville, CA. Mary brings with her over 16 years of accounts payable and payroll experience, with the last two years at Cardinal Mazda Volkswagen. In addition, Mary has a bachelor's degree in Business Management and Human Resources from Golden Gate University.

Derrick Mirikitani joined NCPA on June 5, 2017, as Energy Resource Analyst IV at our Headquarters office in Roseville, CA. Derrick joins the team after employment at JUST Energy as a Power Trading Analyst where he executed strategies to hedge and balance JUST's Energy retail portfolio in ERCOT, PJM and the CAISO. Derrick has a bachelor's degree in Economics from Villanova University, master's degrees in eBusiness Management and Evolutionary and Adaptive Systems from International University of Japan and University of Sussex along with a doctorate in Computer Science from Goldsmith College, University of London.

### **Intern Hires:**

Gordon Loyd was hired on May 22, 2017 as Student Intern IV at our Hydroelectric Operations in Murphys, CA. Gordon is pursuing a Mechanical Engineering degree at University of Nevada Reno.

Kristopher Weber was hired at City of Redding on May 22, 2017 as Student Intern III in Redding, CA. Kristopher is pursuing an Electrical Engineering and Public Administration degree at California State University Chico.

Chatanya Konda was hired at NCPA on May 31, 2017 as Student Intern III at our Headquarters office in Roseville, CA. Chatanya is pursuing a Computer Science and Engineering degree at University of California Merced.

Michael Adian was hired at NCPA on May 31, 2017 as Student Intern II at our Headquarters office in Roseville, CA. Michael is pursuing a Managerial Economics degree at University of California Davis.

Alexander Root was hired at City of Redding on June 5, 2017 as Student Intern III in Redding, CA. Alexander is pursuing an Electrical Engineering and Computer Science degree from Massachusetts Institute of Technology in Cambridge, MA.



Brennan Adams was hired at City of Redding on June 12, 2017 as Student Intern III in Redding, CA. Brennan is pursuing a Civil Engineering degree at California State University Chico.

Stephen Lee was hired at NCPA on June 19, 2017 as Student Intern III at our Lodi Energy Center in Lodi, CA. Stephen is pursuing a Mechanical Engineering degree at University of California Irvine.

Promotions/Position Changes:

None.

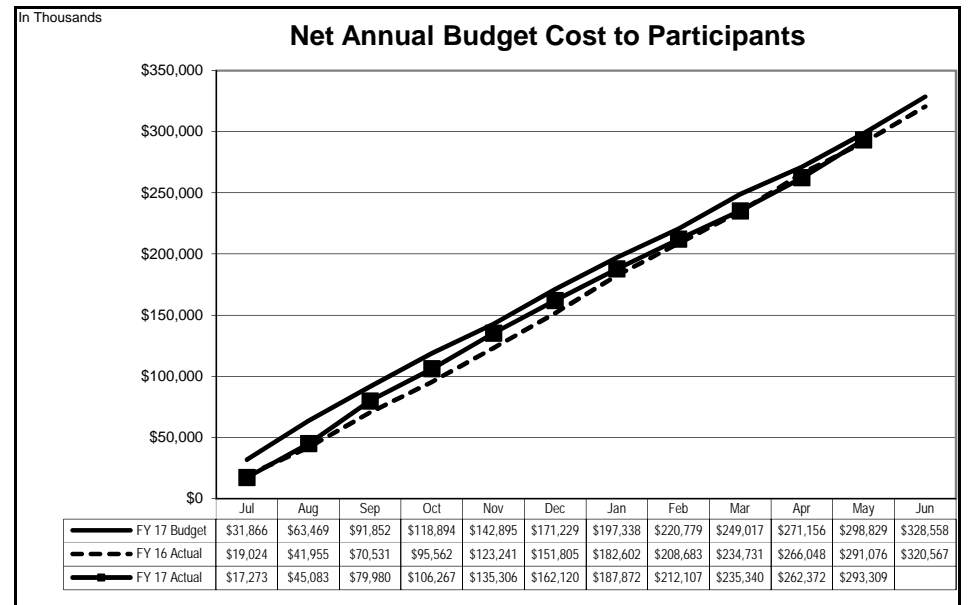
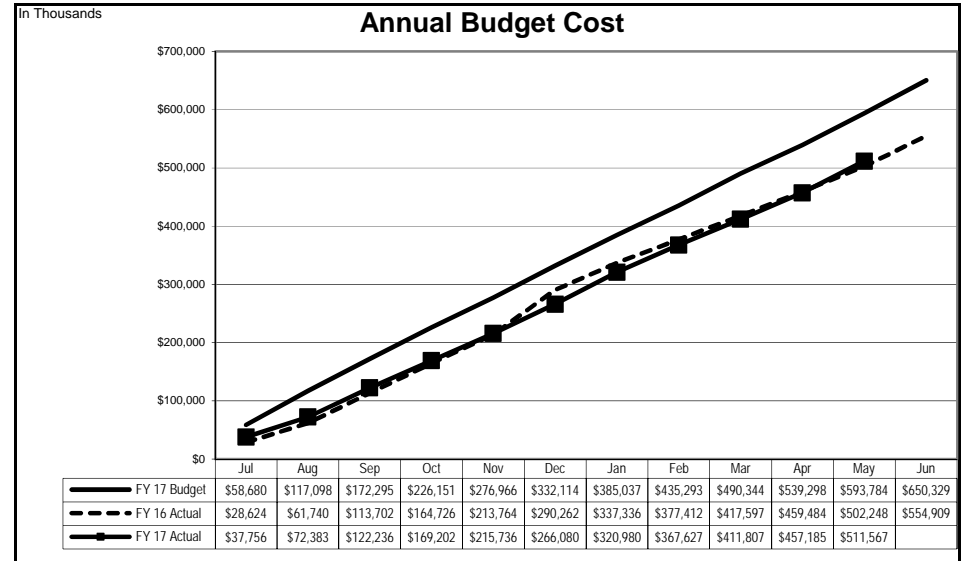
Separations:

Martin Smith, Hydro Tech Operator, retired from his position at our Hydroelectric Operations after 16 years of service.

Hershel Allen, Operator Technician V, retired from his position at our Geothermal Facilities after 30.5 years of service.

**Annual Budget  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**

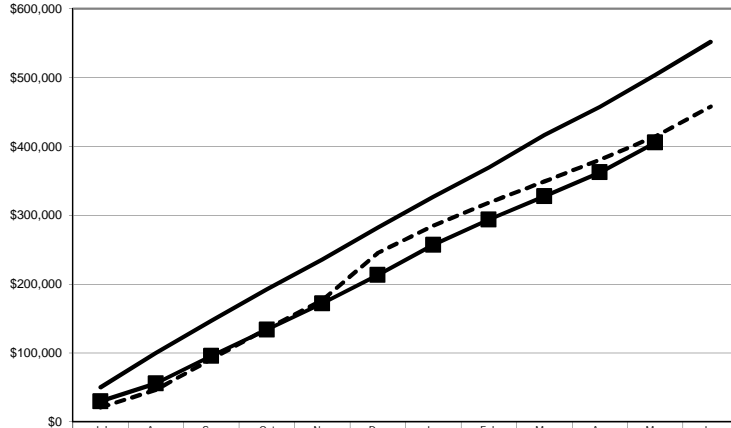
In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
<b>GENERATION RESOURCES</b>				
<b>NCPA Plants</b>				
Hydroelectric	51,854	47,575	\$ 4,279	8%
Geothermal Plant	33,145	27,155	5,990	18%
Combustion Turbine No. 1	2,648	3,193	(544)	-21%
Combustion Turbine No. 2 (STIG)	8,587	7,641	946	11%
Lodi Energy Center	92,991	48,924	44,068	47%
	189,227	134,488	54,739	29%
<b>Member Resources - Energy</b>	45,638	43,689	1,948	4%
<b>Member Resources - Natural Gas</b>	4,878	4,732	146	3%
<b>Western Resource</b>	30,288	25,351	4,938	16%
<b>Market Power Purchases</b>	39,302	28,932	10,370	26%
<b>Load Aggregation Costs - ISO</b>	240,129	167,643	72,486	30%
<b>Net GHG Obligations</b>	2,540	603	1,937	76%
	552,001	405,437	146,564	27%
<b>TRANSMISSION</b>				
Independent System Operator	81,001	92,549	(11,548)	-14%
<b>MANAGEMENT SERVICES</b>				
<b>Legislative &amp; Regulatory</b>				
Legislative Representation	1,897	1,447	449	24%
Regulatory Representation	794	717	77	10%
Western Representation	817	509	308	38%
Member Services	432	342	91	21%
	3,940	3,014	926	23%
<b>Judicial Action</b>	625	607	18	3%
<b>Power Management</b>				
System Control & Load Dispatch	5,622	4,629	993	18%
Forecasting & Prescheduling	2,555	1,940	615	24%
Industry Restructuring	414	277	137	33%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,137	771	365	32%
Green Power Project	18	2	16	90%
Gas Purchase Program	87	57	30	35%
Market Purchase Project	128	75	53	41%
	9,960	7,751	2,209	22%
<b>Energy Risk Management</b>	212	158	54	26%
<b>Settlements</b>	862	453	409	47%
<b>Integrated System Support</b>	311	108	203	65%
<b>Participant Pass Through Costs</b>	1,417	1,273	144	10%
<b>Support Services</b>	-	217	(217)	
	17,326	13,581	3,745	22%
<b>TOTAL ANNUAL BUDGET COST</b>	650,328	511,567	138,761	21%
<b>LESS: THIRD PARTY REVENUE</b>				
Plant ISO Energy Sales	118,943	64,845	54,097	45%
Load Aggregation Energy Sales	184,117	112,739	71,378	39%
Ancillary Services Sales	3,790	3,467	323	9%
Other ISO Revenue	-	16,050	(16,050)	
Transmission Sales	110	101	9	8%
Western Credits, Interest & Other Income	14,811	21,057	(6,246)	-42%
	321,770	218,258	103,512	32%
<b>NET ANNUAL BUDGET COST TO PARTICIPANTS</b>	328,558	293,309	\$ 35,249	11%



**Annual Budget  
Budget vs. Actual By Major Area  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**

In Thousands

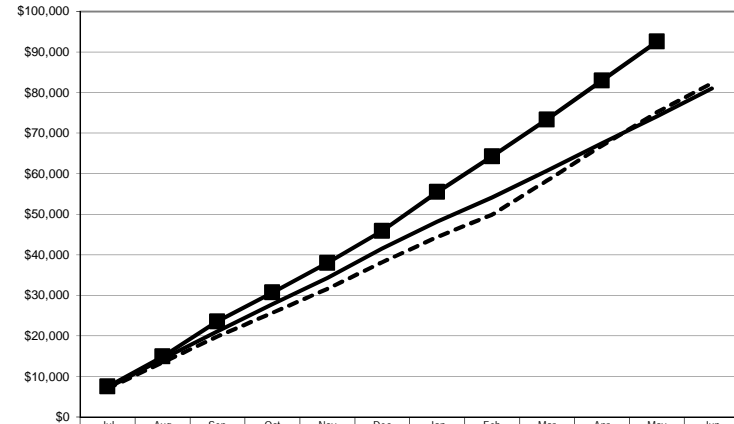
**Generation Resources**



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 17 Budget	\$50,045	\$99,887	\$146,852	\$192,592	\$235,492	\$281,917	\$326,728	\$369,545	\$416,664	\$457,345	\$503,774	\$552,001
FY 16 Actual	\$20,750	\$46,336	\$90,923	\$135,057	\$176,636	\$245,280	\$284,925	\$318,554	\$349,285	\$380,849	\$414,582	\$457,924
FY 17 Actual	\$29,756	\$55,612	\$95,687	\$133,929	\$171,830	\$213,133	\$257,030	\$293,598	\$327,588	\$362,137	\$405,437	

In Thousands

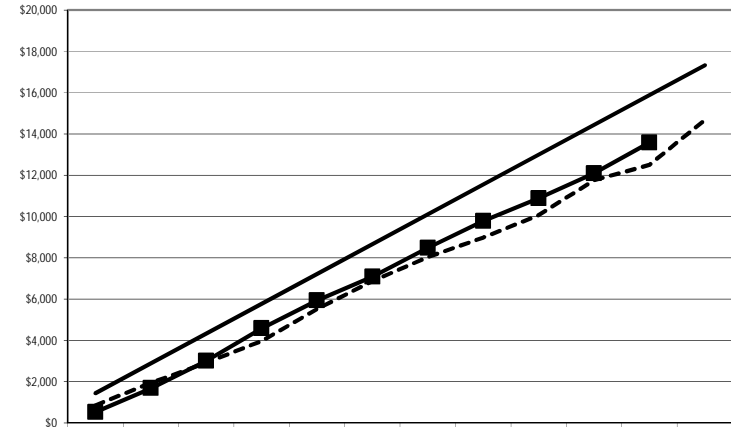
**Transmission-ISO**



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 17 Budget	\$7,191	\$14,323	\$21,111	\$27,784	\$34,255	\$41,534	\$48,202	\$54,197	\$60,686	\$67,514	\$74,128	\$81,001
FY 16 Actual	\$7,011	\$13,458	\$19,856	\$25,694	\$31,604	\$38,115	\$44,379	\$49,884	\$58,245	\$66,873	\$75,169	\$82,307
FY 17 Actual	\$7,476	\$14,883	\$23,532	\$30,689	\$37,966	\$45,861	\$55,469	\$64,245	\$73,335	\$82,951	\$92,549	

In Thousands

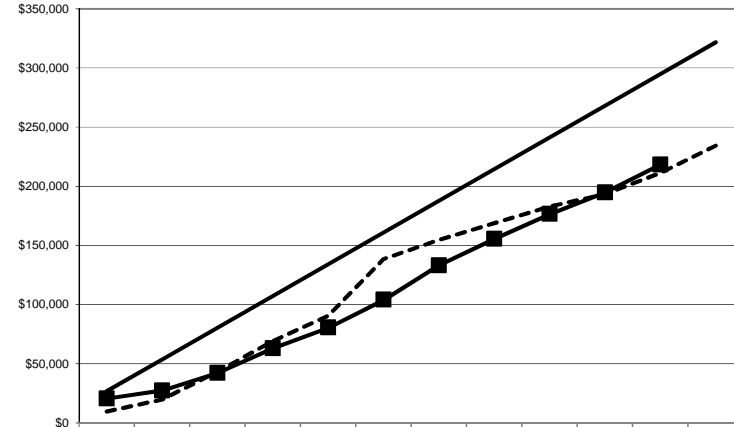
**Management Services**



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 17 Budget	\$1,444	\$2,888	\$4,332	\$5,775	\$7,219	\$8,663	\$10,107	\$11,551	\$12,995	\$14,438	\$15,882	\$17,326
FY 16 Actual	\$862	\$1,946	\$2,923	\$3,974	\$5,524	\$6,867	\$8,031	\$8,974	\$10,068	\$11,761	\$12,497	\$14,678
FY 17 Actual	\$523	\$1,688	\$3,017	\$4,584	\$5,940	\$7,086	\$8,481	\$9,784	\$10,883	\$12,097	\$13,581	

In Thousands

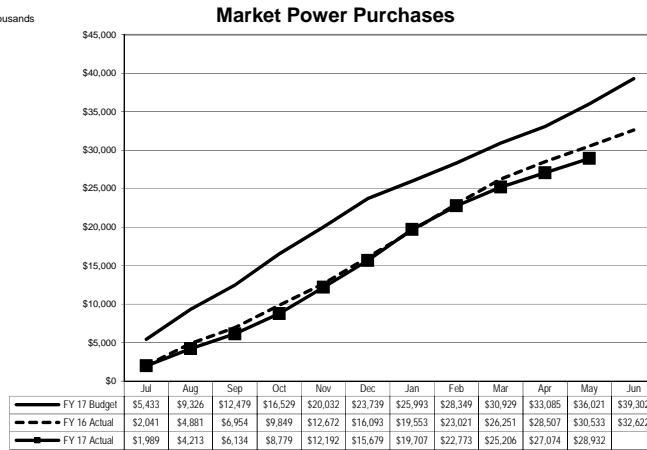
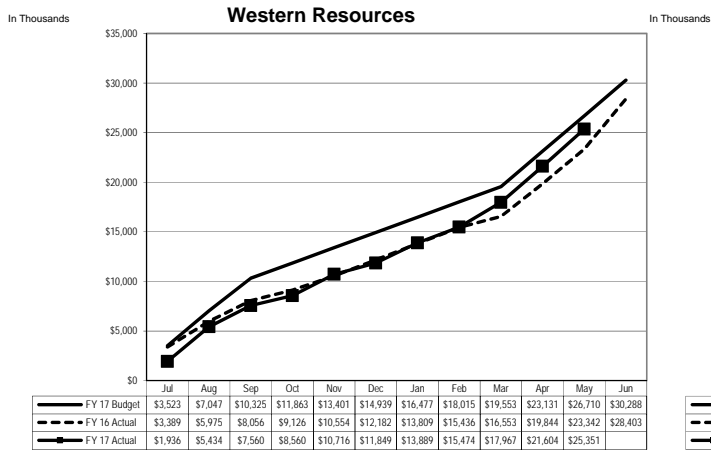
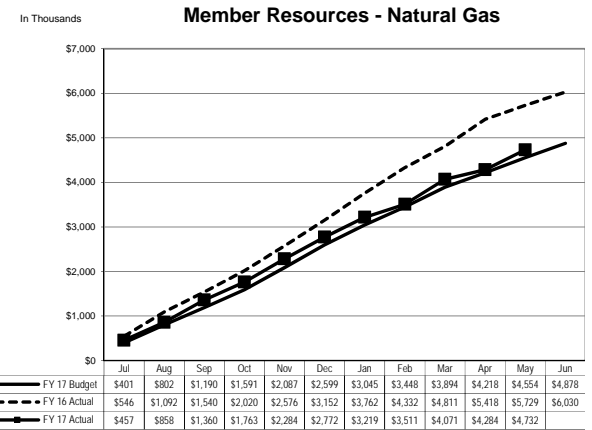
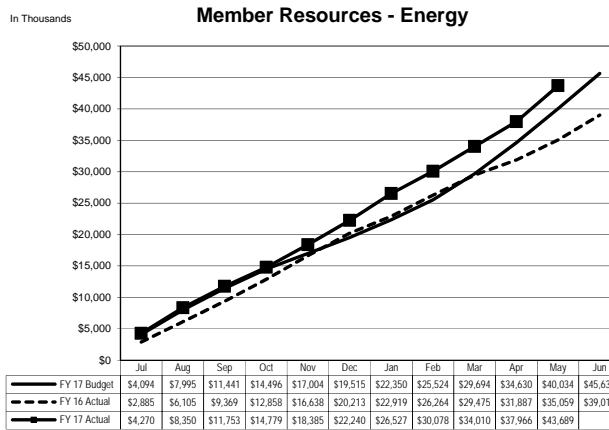
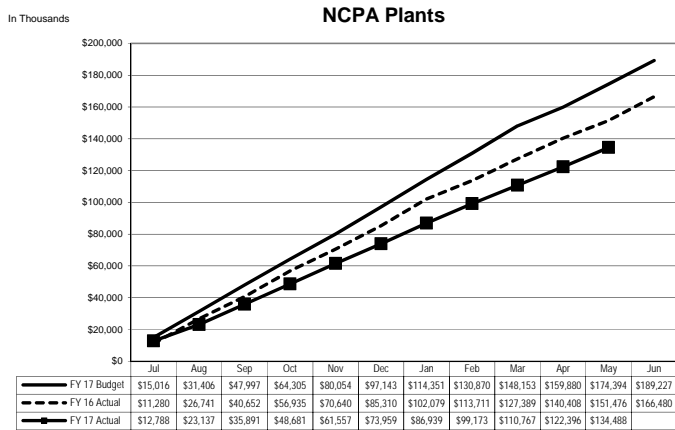
**Third Party Revenue**



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 17 Budget	\$26,814	\$53,628	\$80,443	\$107,257	\$134,071	\$160,885	\$187,699	\$214,513	\$241,328	\$268,142	\$294,956	\$321,770
FY 16 Actual	\$9,599	\$19,785	\$43,171	\$69,164	\$90,523	\$138,457	\$154,734	\$168,729	\$182,867	\$193,436	\$211,172	\$234,342
FY 17 Actual	\$20,482	\$27,301	\$42,255	\$62,934	\$80,430	\$103,960	\$133,108	\$155,520	\$176,466	\$194,813	\$218,258	

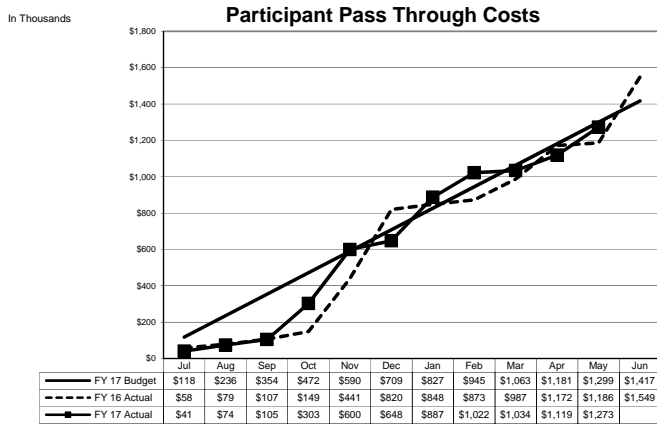
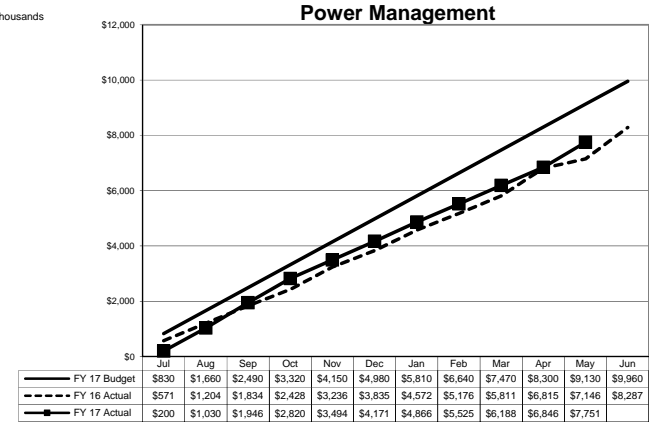
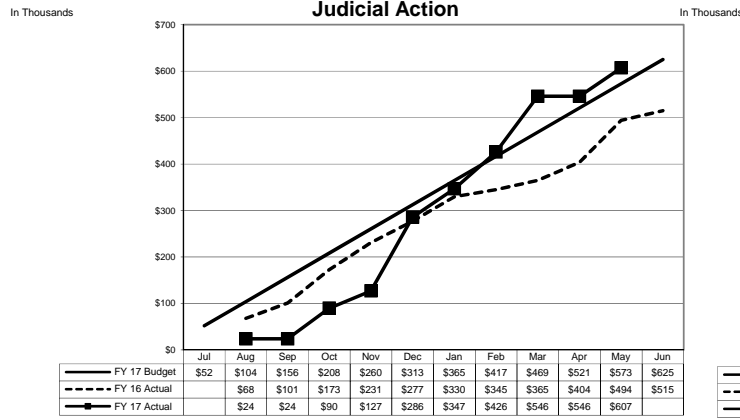
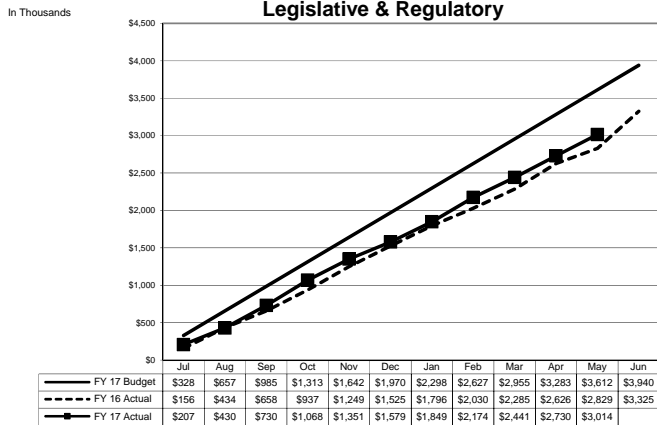
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

**Annual Budget Cost  
Generation Resources Analysis By Source  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**



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

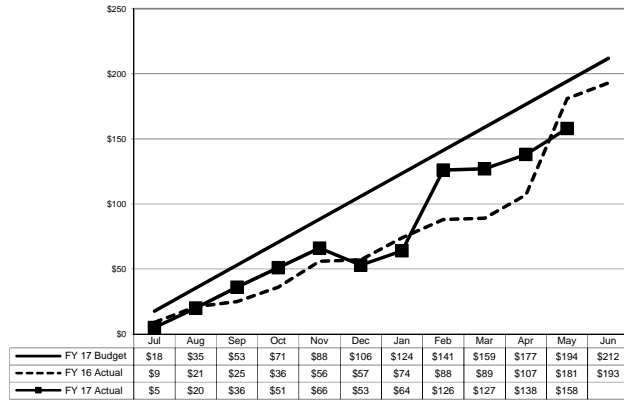
**Annual Budget Cost  
Management Services Analysis By Source  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**



**Annual Budget Cost  
Management Services Analysis By Source  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**

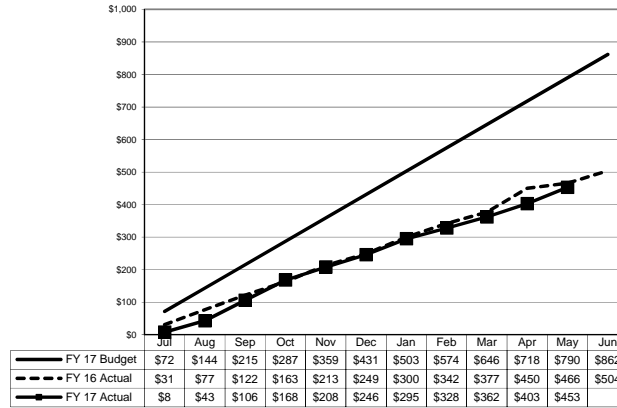
In Thousands

**Energy Risk Management**



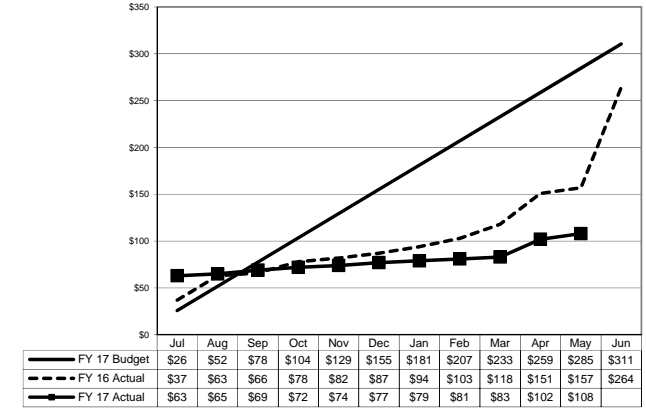
In Thousands

**Settlements**

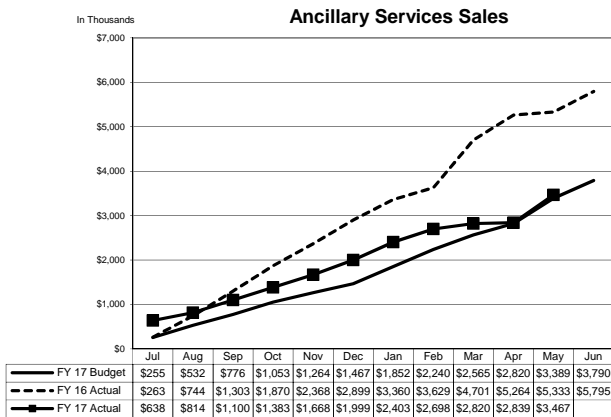
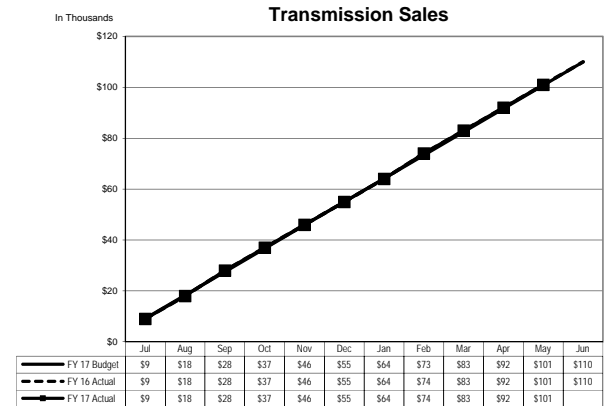
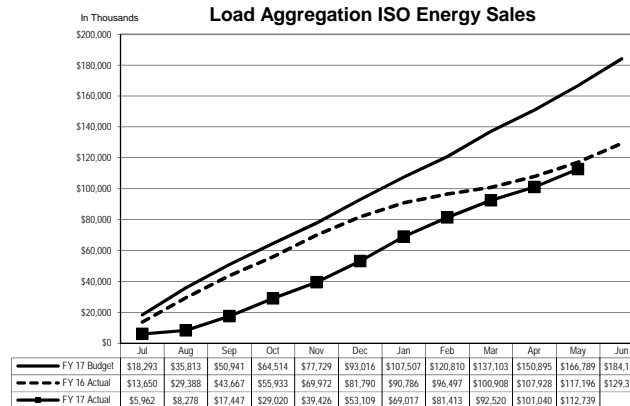
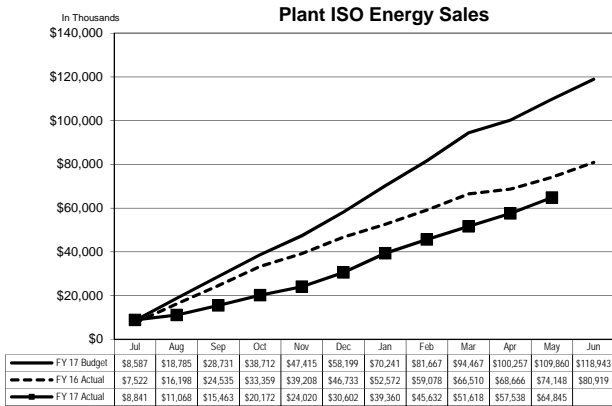


In Thousands

**Integrated Systems Support**



**Annual Budget Cost  
Third Party Revenue Analysis By Source  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**



**Annual Budget  
NCPA Generation Detail Analysis By Plant  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**

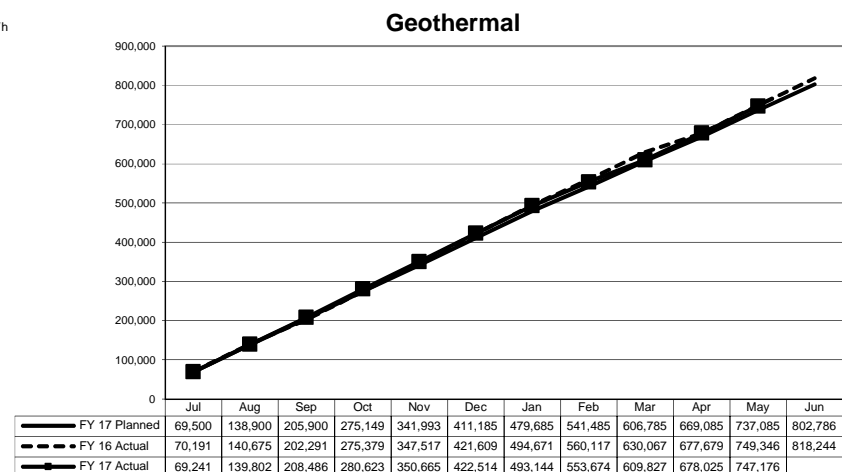
**Generation Cost Analysis**

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh Actual	Under(Ovr) Budget	YTD % Remaining
	Routine O & M	\$ 17,159	\$ 14,321	\$ 19.17	\$ 2,837
Capital Assets/Spare Parts Inventories	2,575	1,447	1.94	1,128	44%
Other Costs	7,994	6,314	8.45	1,680	21%
CA ISO Charges	308	690	0.92	(382)	-124%
Debt Service	5,110	4,383	5.87	727	14%
Annual Budget	33,145	27,155	36.34	5,990	18%
Less: Third Party Revenue					
Interest Income	32	189	0.25	(157)	-484%
ISO Energy Sales	30,113	24,152	32.32	5,961	20%
Ancillary Services Sales	-	5	0.01	(5)	
Effluent Revenues	700	494	0.66	206	29%
Misc	110	883	1.18	(773)	
	30,955	25,723	34.43	5,232	17%
Net Annual Budget Cost to Participants	\$ 2,190	\$ 1,432	\$ 1.92	\$ 758	35%
Net Generation--MWh @ Meter	802,786	747,176			
\$/MWh (A)	\$ (3.64)	\$ (3.95)			

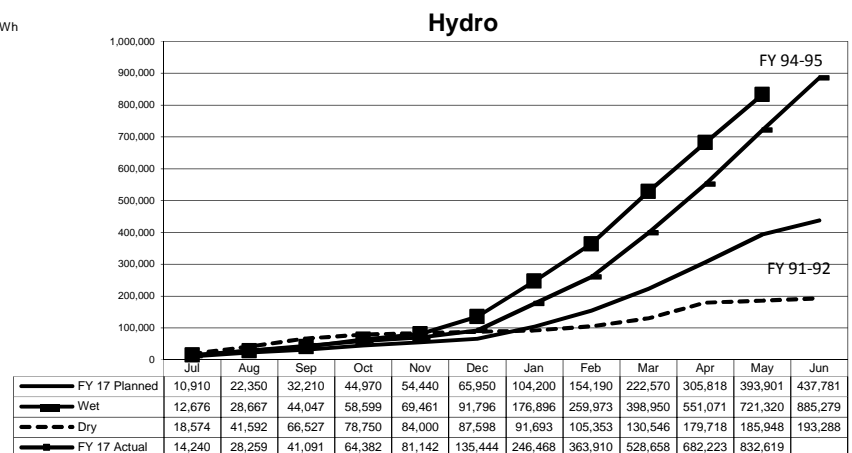
**MWhs Generated**

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh Actual	Under(Ovr) Budget	YTD % Remaining
	Routine O & M	\$ 8,369	\$ 6,104	\$ 7.33	\$ 2,265
Capital Assets/Spare Parts Inventories	2,135	1,854	2.23	281	13%
Other Costs	2,861	2,096	2.52	765	27%
CA ISO Charges	237	2,457	2.95	(2,220)	-937%
Debt Service	38,253	35,065	42.11	3,188	8%
Annual Budget	51,854	47,575	57.14	4,279	8%
Less: Third Party Revenue					
Interest Income	91	321	0.39	(230)	-254%
ISO Energy Sales	19,542	27,124	32.58	(7,582)	-39%
Ancillary Services Sales	2,487	2,396	2.88	92	4%
Misc	-	27	0.03	(27)	
	22,120	29,868	35.87	(7,748)	-35%
Net Annual Budget Cost to Participants	\$ 29,734	\$ 17,708	\$ 21.27	\$ 12,027	40%
Net Generation--MWh @ Meter	437,781	832,619			
\$/MWh (A)	\$ (19.46)	\$ (20.85)			

In MWh



Footnotes:

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

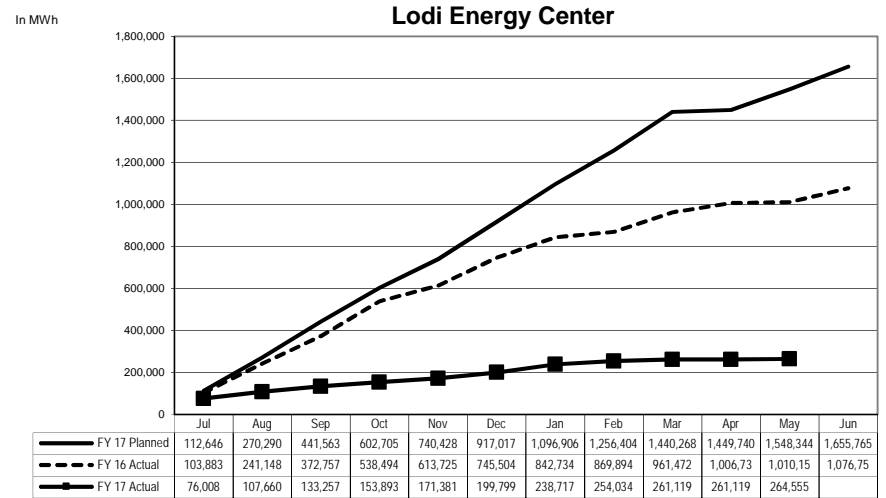


**Annual Budget  
NCPA Generation Detail Analysis By Plant  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**

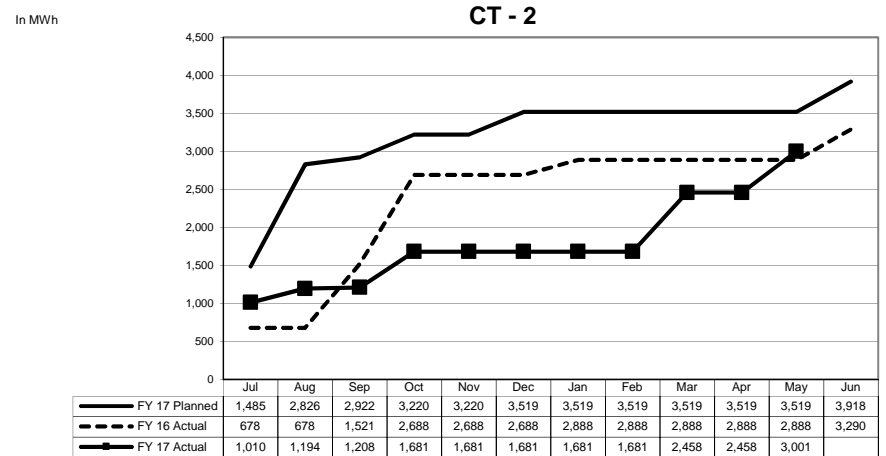
**Generation Cost Analysis**

Lodi Energy Center					
	Budget	Actual	\$/MWh Actual	Under(Ovr) Budget	YTD % Remaining
Routine O & M	\$ 14,041	\$ 9,583	\$ 36.22	\$ 4,458	32%
Fuel	44,101	8,078	30.53	36,023	82%
AB 32 GHG Offset	-	-	-	-	-
CA ISO Charges and Energy Purchases	2,374	3,031	11.46	(657)	-28%
Capital Assets/Spare Parts Inventories	2,805	1,630	6.16	1,175	42%
Other Costs	3,233	2,386	9.02	847	26%
Debt Service	26,437	24,215	91.53	2,222	8%
Annual Budget	92,991	48,924	184.93	44,068	47%
Less: Third Party Revenue					
Interest Income	44	180	0.68	(136)	-305%
ISO Energy Sales	68,846	12,424	46.96	56,422	82%
Ancillary Services Sales	1,303	578	2.19	725	56%
Transfer Gas Credit	-	-	-	-	0%
Misc	3	4,361	16.49	(4,358)	0%
	70,197	17,544	66.31	52,653	75%
Net Annual Budget Cost to Participants	\$ 22,795	\$ 31,380	\$ 118.61	\$ (8,586)	-38%
Net Generation--MWh @ Meter	1,655,765	264,555			
\$/MWh (A)	\$ (2.20)	\$ 27.08			

**MWhs Generated**



Combustion Turbine No. 2 (STIG)					
	Budget	Actual	\$/MWh Actual	Under(Ovr) Budget	YTD % Remaining
Routine O & M	\$ 1,413	\$ 1,195	\$ 398.09	\$ 218	15%
Fuel and Pipeline Transport Charges	936	746	248.45	190	20%
Capital Assets/Spare Parts Inventories	133	121	40.40	12	9%
Other Costs	477	358	119.13	120	25%
CA ISO Charges	2	65	21.68	(63)	-2743%
Debt Service	5,626	5,157	1,718.20	469	8%
Annual Budget	8,587	7,641	2,545.96	946	11%
Less: Third Party Revenue					
Interest Income	19	55	18.23	(36)	-192%
ISO Energy Sales	282	212	70.54	70	25%
Ancillary Service Sales	-	0	0.01	(0)	0%
Fuel and Pipeline Transport Credits	415	1,081	360.08	(666)	-160%
Misc	-	-	-	-	0%
	715	1,347	448.85	(632)	-88%
Net Annual Budget Cost to Participants	\$ 7,872	\$ 6,294	\$ 2,097.10	\$ 1,578	20%
Net Generation--MWh @ Meter	3,918	3,001			
\$/MWh (A)	\$ 573.32	\$ 378.90			



**Footnotes:**

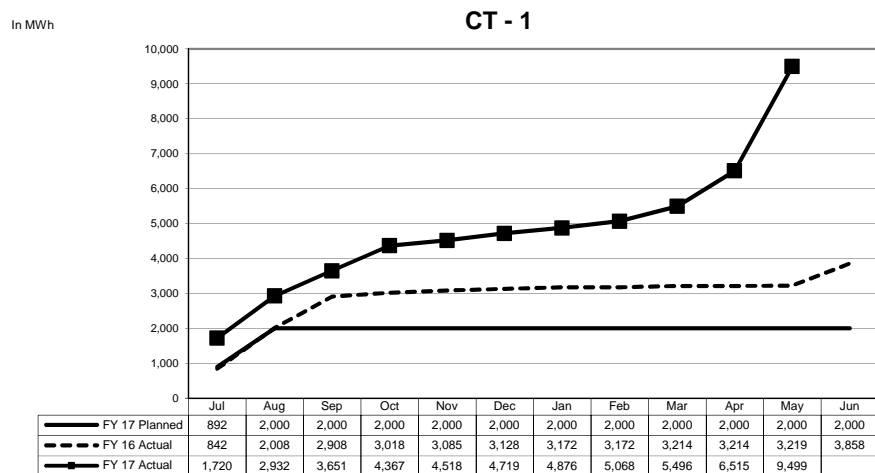
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

**Annual Budget  
NCPA Generation Detail Analysis By Plant  
2016-2017 Fiscal Year To Date  
As of May 31, 2017**

**Generation Cost Analysis**

	<b>Combustion Turbine No. 1</b>				
	Budget	Actual	\$/MWh Actual	Under(Ovr) Budget	YTD % Remaining
Routine O & M	\$ 1,459	\$ 1,667	\$ 175.54	\$ (208)	-14%
Fuel and Pipeline Transport Charges	174	454	47.84	(281)	-161%
Capital Assets/Spare Parts Inventories	525	493	51.95	32	6%
Other Costs	489	419	44.10	70	14%
CA ISO Charges	1	159	16.69	(157)	-15290%
Debt Service	-	-	-	-	-
<b>Annual Budget</b>	<b>2,648</b>	<b>3,193</b>	<b>336.12</b>	<b>(544)</b>	<b>-21%</b>
Less: Third Party Revenue					
Interest Income	0	-	-	0	-
ISO Energy Sales	160	934	98.36	(774)	0%
Ancillary Services Sales	-	0	0.01	(0)	0%
Misc	-	16	1.65	(16)	0%
	161	950	100.02	(790)	-492%
<b>Net Annual Budget Cost to Participants</b>	<b>\$ 2,488</b>	<b>\$ 2,243</b>	<b>\$ 236.10</b>	<b>\$ 245</b>	<b>10%</b>
Net Generation--MWh @ Meter	2,000	9,499			
<b>\$/MWh (A)</b>	<b>\$ 1,243.89</b>	<b>\$ 236.10</b>			

**MWhs Generated**



Footnotes:

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