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A photograph of a winter landscape with snow-covered evergreen trees and mountains under a bright sun with rays. The image is partially obscured by a large green arrow graphic pointing right.

# BUSINESS PROGRESS REPORT

**JANUARY 2017**

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# Generation Costs & Reliability

## Combustion Turbine Project

### Availability/Production for December

Unit	Availability		Production		Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	43.7 MWhr	CAISO / CAISO
	98.38%	100.00%	Unit 2	89.2	
Curtailments & Outages		12/7/16 - Failed to Start / None.			
CT1 Lodi	100.00%		70.7 MWhr		CAISO
Curtailments & Outages		None.			
CT2 STIG	100.00%		0.0 MWhr		None.
Curtailments & Outages		None.			
LEC	100.00%		0.0 MWhr		None.

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

## Geothermal Facilities

### Availability/Production for December

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
<b>Unit 1</b>	100 %	20,176 MWh	Unit 1 had no outages for the month of December.
<b>Unit 2</b>	100 %	20,158 MWh	Unit 2 had no outages for the month of December.
<b>Unit 3</b>	N/A %	N/A	Unit 3 remains out of service for the month of December.
<b>Unit 4</b>	100 %	31,518 MWh	Unit 4 had no outages for the month of December.
<b>Southeast Geysers Effluent Pipeline</b>	100 %	233.6 mgallons	Average flow rate: 5,363.4 gpm
<b>Southeast Solar Plant</b>	N/A	64,198 KWh	Year-to-date KWh: 1,598,889
<b>Bear Canyon Pump Station Zero Solar</b>	N/A	76,584 KWh	Year-to-date KWh: 2,135,923

## Hydroelectric Project

### Availability/Production for December

Units	Availability	Net Electricity Generated	Out-of-Service
<b>Collierville Unit 1</b>	99.61 %	26,292 MWh	CV #1 unit was out of service on 12/16/16 at 0245 through 0536 due to high tailwater level.
<b>Collierville Unit 2</b>	99.57 %	26,700 MWh	CV #2 unit was out of service on 12/16/16 at 0245 through 0554 due to high tailwater level.
<b>Spicer Unit 1</b>	100.00 %	797 MWh	NSM #1 unit no reportable outages.
<b>Spicer Unit 2</b>	96.37 %	311 MWh	NSM #2 unit was out of service on 12/13/16 at 1430 through 12/14/16 at 1727 due to governor power supply failure.
<b>Spicer Unit 3</b>	100.00 %	201 MWh	NSM #3 unit no reportable outages.

### Operations & Maintenance Activities:

- Monthly CMMS work orders
- Collierville/Bellota 230kv transmission line corona/vegetation patrol
- USGS 2015/2016 water year review

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

### Incident Reports

- There were no vehicle accidents, no lost time incidents, and no recordable incidents in December.
- 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 December 24, 2016.
- 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.

### December Generation Services Safety Report

	Hydro	GEO	CT Group *	NCPA HQ **
CalOSHA Recordable (this month)	0	0	0	0
CalOSHA Recordable (calendar year)	0	0	0	0
Days since Recordable	738	491	628	5696
Work Hours Since Last Recordable	62,948	103,468	92,895	2,050,154
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	3,354	2,935	4,482	4,625
Work Hours without LTA	308,513	672,625	534,259	1,672,173
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 December 24, 2016.

# **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 2016 Data**

	<b>December 2016</b>		<b>Calendar Year 2016</b>	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	351.07 12/7 @1800	204,677	449.75 7/27 @1700	2,369,410
SVP	452.28 12/9 @1400	299,549	534.21 9/26 @ 1700	3,559,212
MSSA	797.44 12/7 @ 1800	504,226	968.73 7/27 @ 1600	5,928,622

### **Last Year 2015 Data\***

	<b>December 2015</b>		<b>Calendar Year 2015</b>	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	352.18 12/14 @1900	204,646	460.41 6/30 @ 1700	2,404,404
SVP	439.36 12/09 @ 1400	286,672	523.69 9/21 @ 1600	3,355,175
MSSA	778.87 12/15 @ 1900	491,318	975.16 9/9 @ 1700	5,759,579

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

### **System Peak Data**

	<b>All Time Peak Demand</b>	<b>2016 Peak Demand</b>
NCPA Pool	517.83 MW on 7/24/2006 @ 1500	449.75 7/27 @ 1700
SVP	534.21 MW on 9/26/16 @ 1700	534.21 9/26 @ 1700
MSSA	988.56 MW on 7/08/2008 @ 1500	968.73 7/27 @ 1600

- 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.

<b>NCPA Deviation Band Performance</b>		
	<b>December 2016</b>	<b>Calendar Year 2016</b>
MSSA % Within the Band	99.51%	99.10%

- December 10 @ 2215 – December 11 @ 1115, and December 15 @ 2120 – December 16 @ 1830 McKay's spilled due to high natural flows.
- Avery Gauge flow exceeded 11,000cfs on 12/16 about 0300; peak spill 8600cfs
- Spicer Meadows:
  - December 13 @ 1430 – December 14 @ 1727 Unit 2 o/s due to a failed governor power supply
- Geothermal Units:
  - No curtailments
- Lodi Energy Center:
  - No curtailments
- Alameda CTs:
  - December 7 @ 1700 – December 8 @ 1215, Unit 1 o/s due to trouble with gas compressor pressure switch
- Lodi CT:
  - No curtailments
- Collierville Units:
  - December 16 @ 0245 - 0554, Units 1 & 2 shutdown due to issues associated with high tail water levels and spill conditions
- STIG:
  - No curtailments

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

- Actual NCPA Pool load of 204.7 GWh in November equaled 99% of the pre-month forecast of 206.5 GWh – temperatures were very mild.
- Pool load, at 52.3 GWh through the 8<sup>th</sup> is on pace to total 202.7 GWh in December compared to the forecast of 202.5 GWh. Loads at or slightly above the forecast for the month come despite a slightly warmer (and wetter) start to January.
- The Lodi Energy Center (LEC) generated 5.1 of the forecasted 5.9 GWh in November for the pool as power values in the CAISO markets remained low and strong renewable generation continues.
- For the month of December there was 10.38 inches of rain recorded at Big Trees gage. The December average Big Trees precipitation is 9.20 inches.
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) has been reduced to \$40/MWh from \$50/MWh.



- NSMR storage as of December 31 was at 114,695 ac-ft. The historical average NSMR storage at the end of December is 80,633 ac-ft. As of January 10, NSMR storage is 130,065 ac-ft. The NCPA Pool share of NSMR storage is 67,061 ac-ft.
- Combined Calaveras Project generation for the Pool in December totaled 21.5 GWh, up from 9.3 GWh in November. The Pool's 21.5 GWh in December was more than the pre-month forecast of 10.7 GWh. Through January 10<sup>th</sup>, Calaveras generation for the Pool (9.5 GWh) is running above the month's forecast of 25.3 GWh.
- Western Base Resource (BR) delivery to the Pool in December was 21.7 GWh compared to the forecast of just 10.8 GWh. Through January 8<sup>th</sup>, BR pool allocations at 11.8 GWh are already ahead of the January forecast of 9.9 GWh.
- PG&E City-Gate gas index most recently traded at \$3.35/MMBtu for January 10<sup>th</sup> delivery - compared to an average of \$3.78/MMBtu with a high of \$3.975/MMBtu for the month of December. Prices rose sharply during December due to expected colder weather across most of the nation. While the PG&E Bidweek price for January gas averaged \$3.95, daily Platt's prices have been lower due to the warmer-than-anticipated weather so far this month.
- Day-ahead HLH (on-peak) NP15 electricity remains relatively low on average with spikes occurring on days with highest load. The HLH and LLH day-ahead average LMPs for January 10<sup>th</sup> delivery were \$38.33 and \$25.18/MWh, respectively.

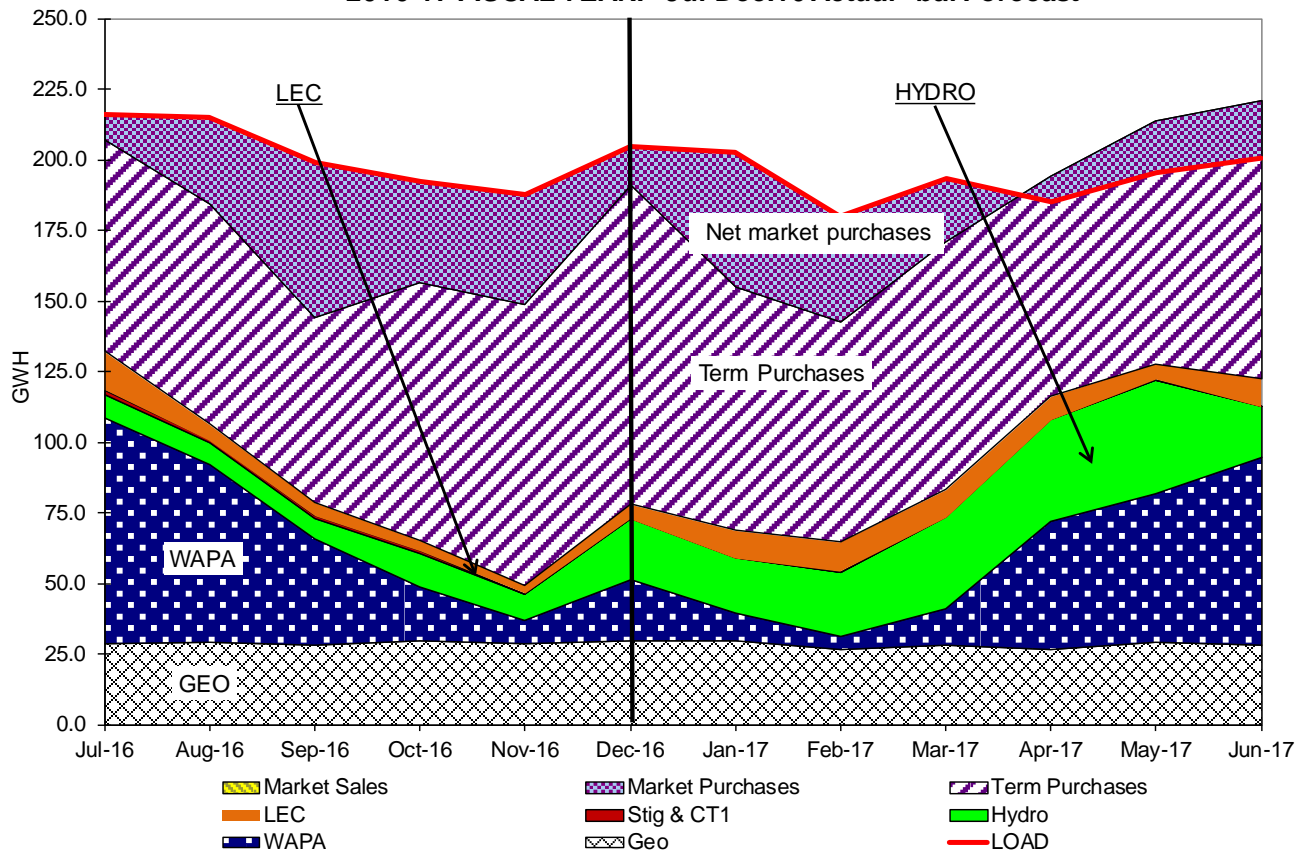
NCPA Pool Loads & Resources Value Summary								
Peak and Energy Summary December 2016					Estimated Production Costs		Cost of Serving Demand	
Demand	Coincident Peak (MW)	Total MWh	Forecast Values	Avg. MW	NCPA Pool		Total	Avg (\$/MWh)
	12-07-16 at HE 18 (MW)				Cost/Revenue (Estimate)	Variable Cost (\$/MWh)		
	351.1	204,668	206,548	275.1	N/A	N/A		
							<b>Market Clearing Price</b>	
WAPA	85.0	21,742	10,819	29.2	\$ 1,135,902	\$ 1,135,902	\$ 5,819,329	\$ 38.29
Geothermal	40.4	29,743	29,844	40.0	\$ 565,112	\$ 19,000		
Hydro	46.5	21,500	14,325	28.9	\$ 129,000	\$ 6,000		
Stig & CTs	26.4	117	-	0.2	\$ 9,322	\$ 79,400		
LEC	50.2	5,110	10,798	6.9	\$ 185,499	\$ 36,300		
Contracts	147.5	112,831	112,913	151.7	\$ 5,441,968	\$ 48,220	\$ 7,999,313	\$ 39.08
Market - Net	(44.9)	13,625	27,849	18.3	\$ 521,689	\$ 38,290		
(Positive = Negative)								
<b>Net Total</b>	<b>351.1</b>	<b>204,668</b>	<b>206,548</b>	<b>275.1</b>	<b>\$ 7,988,490</b>	<b>\$ 39.03</b>		

Monthly Market Summary						
Month	Pool Energy (MWh)	HLH Avg MCP (\$/MWh)	Avg Variable Cost of Pool Generation (\$/MWh)	Forward Prices (EOX NP15 HLH Ask Prices)		
				NP15 12/1/2016 (\$/MWh)	1/10/2017 (\$/MWh)	
Jan-16	199,166	\$ 31.55	\$ 41.44	Jan-17	\$ 42.18	\$ 35.84
Feb-16	179,772	\$ 28.62	\$ 41.82	Feb-17	40.27	33.86
Mar-16	188,186	\$ 22.30	\$ 30.76	Mar-17	36.49	30.61
Apr-16	181,509	\$ 23.62	\$ 34.47	Q1 2017	\$ 38.31	\$ 33.38
May-16	193,649	\$ 24.24	\$ 33.65	Q2 2017	33.05	28.86
Jun-16	206,891	\$ 33.50	\$ 39.68	Q3 2017	41.26	39.86
Jul-16	216,048	\$ 38.16	\$ 38.15	CY2017	\$ 38.86	\$ 35.67
Aug-16	215,004	\$ 39.94	\$ 41.27	CY2018	38.88	38.20
Sep-16	199,227	\$ 37.34	\$ 45.69	CY2019	37.78	38.74
Oct-16	204,863	\$ 32.43	\$ 39.08	CY2020	\$ 40.48	\$ 39.38
Nov-16	204,863	\$ 32.43	\$ 39.08	CY2021	42.18	40.86
Dec-16	204,868	\$ 38.29	\$ 39.03	CY2022	43.80	41.42

NOTES TO SUMMARY TABLE:

Peak and Energy Summary:  
 \* Monthly generation summary of Coincident 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 Collenille and Sycamore 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 \$0.40 and \$1.40/MWh variable O&M costs per 6-1206 G&C.  
**Cost of Serving Demand:**  
 Compare 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-Dec.16 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 March 2017:
  - Monthly System Resource Adequacy Demonstration (filed February 13, 2017)
  - Monthly Supply Plan (filed February 13, 2017)

**Industry Restructuring**

NCPA is actively participating on behalf of the members in the following CAISO stakeholder initiatives:

Commitment Costs and Bidding Enhancements

- This CAISO stakeholder initiative is focused on refining the method used to calculate minimum load and start-up costs (otherwise known as “Commitment Costs”) that are incorporated into a generating facilities Bid. The outcome of this stakeholder initiative will impact how NCPA manages the member resources; therefore, NCPA has a strong interest in this process.

## Reliability Services 2

- Through the Reliability Services Initiative 2, CAISO is exploring certain enhancements to the current Resource Adequacy program, including, but not limited to, defining substitution requirements for flexible capacity on planned outages, address RAIM exemptions, separate local and system RA for purposes of forced outage substitution, and clarify LRA interactions and process alignment. In this initiative, NCPA will focus on limiting the applicability of new Resource Adequacy requirements to the NCPA members. NCPA is actively participating in this stakeholder process and market simulation.

## FRAC MOO 2

- CAISO has initiated the second phase of the Flexible Resource Adequacy Capacity and Must Offer Obligation initiative (otherwise known as “FRAC MOO 2”). In the FRAC MOO 2 initiative CAISO is planning to address the following issues: (i) assess the need to create a separate downward flexible capacity attribute, (ii) determine eligibility of 15-minute dispatchable intertie resources to provide flexible RA; (iii) access flexible capacity eligibility from storage resources who do not fit within the NGR model, (iv) flexible capacity impacts of uncontracted/merchant Variable Energy Resources, and (v) review of the need to develop a ‘regulation based’ and ‘load-following based’ flexible capacity product. NCPA will actively participate in this effort and will represent the members’ interests as they may appear.

## 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. Transmission costs are a major component of the members’ costs; therefore NCPA will closely monitor the development of this initiative.

## 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.

## 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	-	-	0	\$1,135,901	\$ -	\$ -	\$ 48.45
Feb-17	13,801	-	(13,801)	\$1,135,901	\$ 82.30	\$ -	\$ 47.04
Mar-17	47,259	-	(47,259)	\$1,135,901	\$ 24.04	\$ -	\$ 45.02
Apr-17	52,011	-	(52,011)	\$2,279,529	\$ 43.83	\$ -	\$ 43.73
May-17	76,515	-	(76,515)	\$2,279,529	\$ 29.79	\$ -	\$ 42.30
Jun-17	76,360	-	(76,360)	\$2,279,529	\$ 29.85	\$ -	\$ 41.66
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 \$2,600 for the Pool in December. The Displacement Program has been suspended until Spring 2017.

## **Debt and Financial Management**

- Member filings of annual disclosure information related to NCPA bonds were made by each major Project Participant in early January 2017.
- Staff continues preparation of the FY2018 NCPA Budget and review sessions will occur in various Committees starting in February.
- The NCPA Finance Committee reviewed and recommended approval of the framework for a Long-Term Funding Plan for NCPA's Employee Pension Plan. The plan proposes bringing the funding levels up over a shorter period of time to achieve a goal of a minimum 80% funding as soon as possible. The Committee will discuss the plan and recommend the funding level for fiscal year 2018 after reviewing the 2018 budget in April.
- In December, the Federal Reserve raised interest rates for the second time in almost a decade by 25 bps. The yield curve remains somewhat flat as long-term rates remain relatively low. Analysts are forecasting long-term tax-exempt yields to rise by the end of 2017.

## **Schedule Coordination Goals**

### **Software Development**

- Testing of the ReQLogic Expense module is on-going. Go live has been rescheduled for February 2017. The new system will streamline the expense submission and reporting capabilities of NCPA staff.
- BART's new scheduling coordination database and supporting bid-to-bill systems (referred to as BRT1) were successfully implemented effective for operating day 01/01/2017.
- The OMAR (Online Meter Analysis and Reporting) application replacement, Market Results Interface – Settlements (MRI-S), went live in October as scheduled. NCPA is currently running both old and new systems in parallel as there are some issues discovered from the CAISO's end. NCPA staff is working with CAISO staff to resolve the variances.

### **Network**

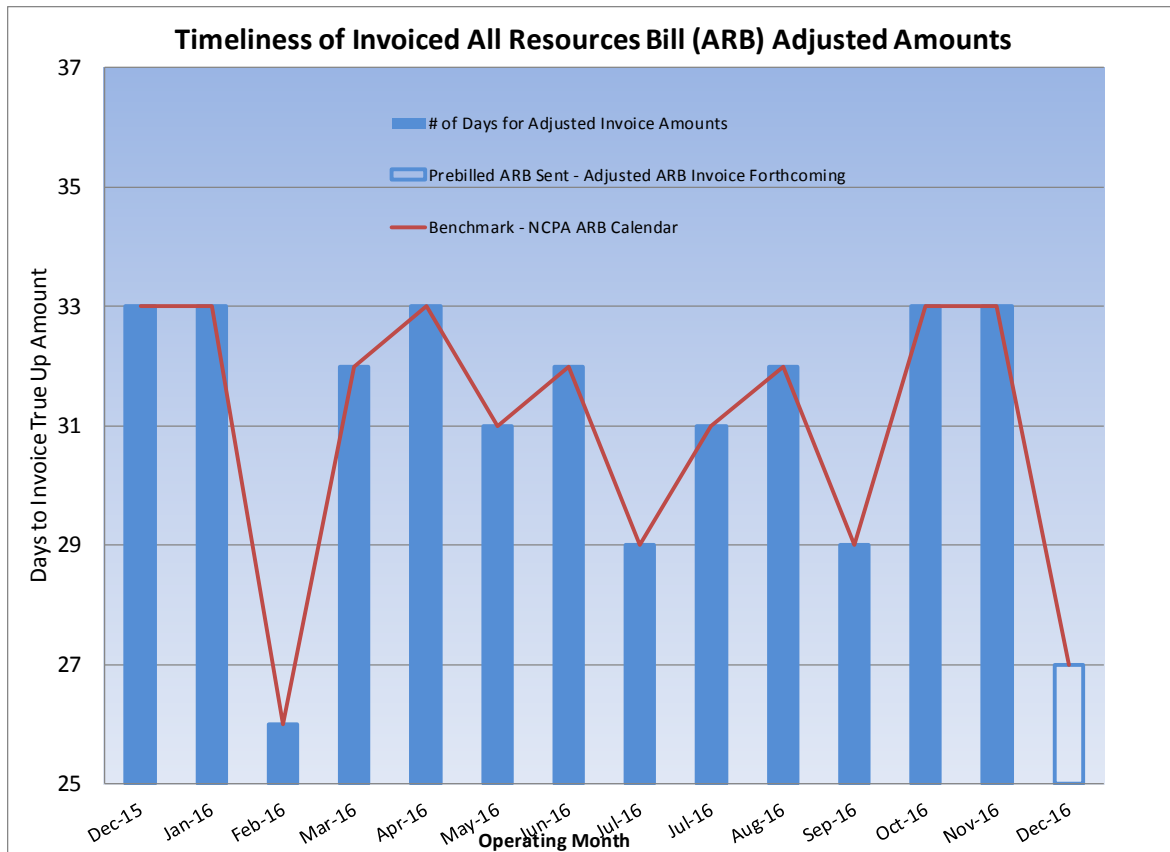
- Work continues on preparing to migrate e-mail from on-premise to Office 365. Ops and Support are working with vendors to strategize a plan for extracting old legacy archive mail. Plan to be completed with the migration in the coming months.
- "NCPA Connect" Extranet work continues through the month of December, including the creation of a new publishing tool that will synchronize internal documents to the Extranet. Member user testing was also completed with several cities participating in a survey to provide feedback on content accessibility. We are anticipating a Go Live date of January 23<sup>rd</sup>, 2017.

- About 85% of the Agency has been upgraded from Office 2010 to Office 2016 in the month of December. The additional 15% will be completed by the end of January 2017.
- Information Services continues to be involved with the ongoing CIP version 6 compliance efforts and recently participated in a security assessment of both the HQ and DRC control centers with Utility Services. Currently, we have a draft of the assessment and are working through the preliminary observations and recommendations.
- The Operation and Support group has been working with the Generation Services department to further expand wireless capability at both the Hydro and CT plants. Equipment was purchased and configured to expand wireless coverage at Alameda and Lodi CTs. Anticipated install date will be in January 2017.
- The Operation and Support group held interviews in November for the recently vacant SCADA Analyst III position. The top candidate was selected and accepted the offer with a start date of January 17<sup>th</sup>, 2017.

## **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 January 2017 NCPA All Resources Bill (ARB) monthly invoice sent to members on December 23, 2016 contains:
  - January 2017 monthly pre-billed budget/forecast amounts;
  - November 2016 (1<sup>st</sup> Adjustment) NCPA Project and CAISO Initial settlement true-ups;
  - October 2016 (2<sup>nd</sup> Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
  - August 2016 (3<sup>rd</sup> Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
  - February 2016 (4<sup>th</sup> Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
  - April 2015 (5<sup>th</sup> Adjustment) T+18 month recalculated CAISO settlement true-up allocations;
  - November 2013 (6<sup>th</sup> Adjustment) T+35 month CAISO settlement true-up



## **Legislative & Regulatory**

### **Political Arena State/Federal/Western Programs**

- The NCPA Electric Vehicle Working Group (EVWG) joined with SCPPA’s EVWG for a joint meeting on December 14th, hosted at the headquarters of Alameda Municipal Power. The joint meeting featured two panels of guest speakers. The morning panel focused on state policies supporting utility investments in electric vehicle charging. The afternoon panel brought together industry experts who shared their perspective on market trends and customer behavior.
- NCPA has been organizing the program for the January 30th Capitol Day. The NCPA program will begin with a breakfast briefing at 8:00 a.m. at Mayahuel (1200 K Street), which includes speakers from the Senate pro Tem’s office and the Assembly Utilities and Energy Committee. The breakfast policy briefing will conclude at approximately 10:00 a.m. in time for CMUA’s morning and lunch program. NCPA is working with its members to set up meetings with legislators, and key energy staff in the Legislature and relevant state agencies throughout the day. NCPA will conclude the day by hosting a dinner for its members and legislators (after the CMUA evening reception) at the Esquire Grill (1213 K Street). NCPA is also developing Capitol Day issue papers that will cover topics such as cap and trade, regionalization, and net energy metering.

## **Human Resources**

### Hires:

None

### Intern Hires:

None

### Promotions/Position Changes:

None

### Terminations:

Donna Stevener, Assistant General Manager, retired from her position at our Roseville Headquarters. Donna has accepted the position of Chief Administrative Officer at LADWP in southern California.

John Grimm, Hydro Tech Operator, retired from his position at our Hydroelectric Operations after 14 years of service.

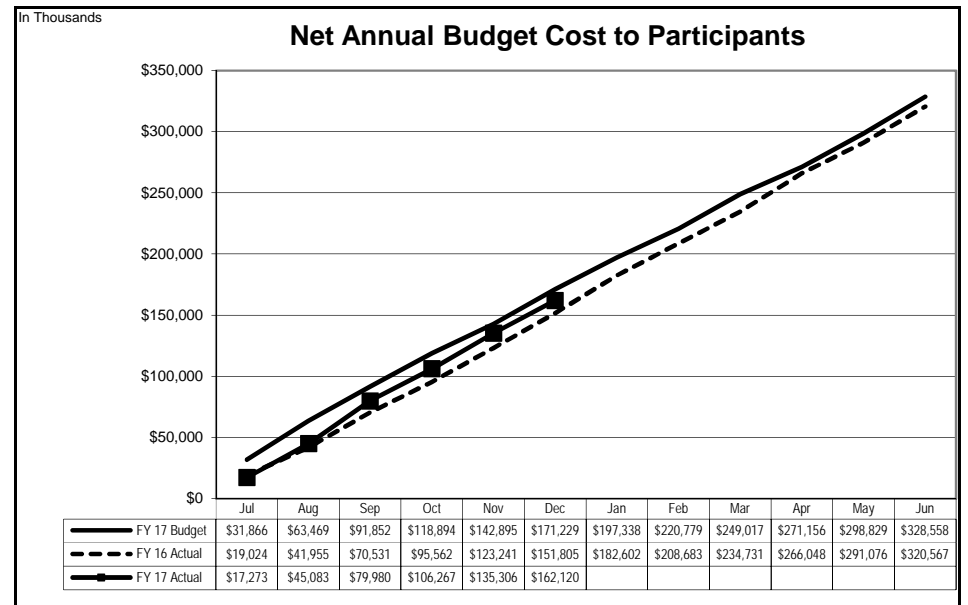
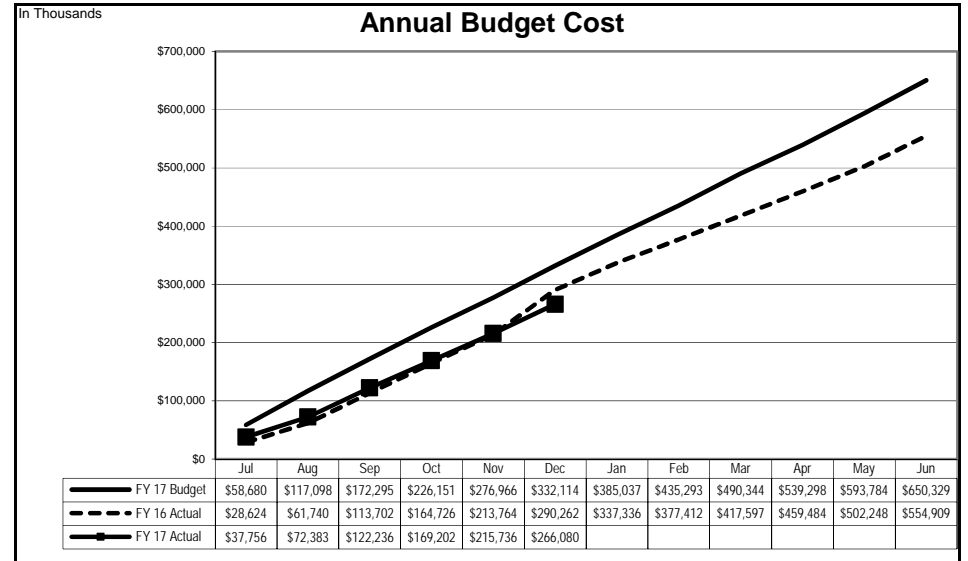
Jeffery Furst, Supervisor I, retired from his position at our Geothermal Facilities after 30 years of service.

Richie Tolentino, Student Assistant (Casual) separated from his position at City of Lompoc.



## Annual Budget 2016-2017 Fiscal Year To Date As of December 31, 2016

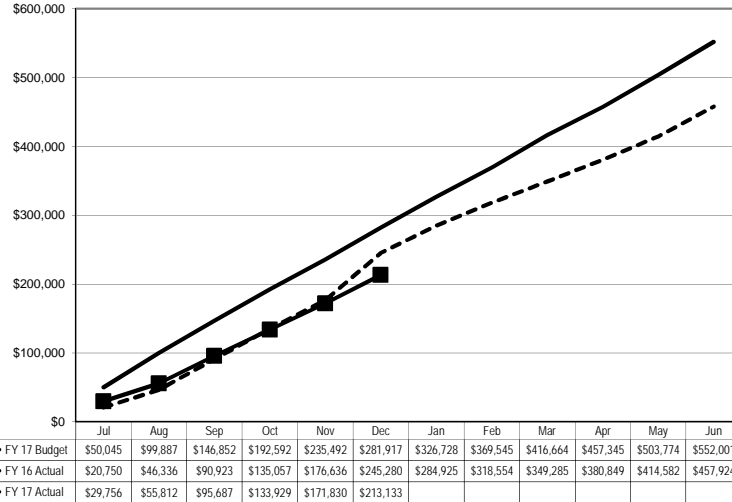
In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
<b>GENERATION RESOURCES</b>				
<b>NCPA Plants</b>				
Hydroelectric	51,854	25,147	\$ 26,708	52%
Geothermal Plant	33,145	14,380	18,765	57%
Combustion Turbine No. 1	2,648	1,688	960	36%
Combustion Turbine No. 2 (STIG)	8,587	4,125	4,463	52%
Lodi Energy Center	92,991	28,620	64,371	69%
	189,227	73,959	115,268	61%
<b>Member Resources - Energy</b>	45,638	22,240	23,398	51%
<b>Member Resources - Natural Gas</b>	4,878	2,772	2,106	43%
<b>Western Resource</b>	30,288	11,849	18,439	61%
<b>Market Power Purchases</b>	39,302	15,679	23,623	60%
<b>Load Aggregation Costs - ISO</b>	240,129	86,099	154,029	64%
<b>Net GHG Obligations</b>	2,540	535	2,005	79%
	552,001	213,133	338,868	61%
<b>TRANSMISSION</b>				
Independent System Operator	81,001	45,861	35,141	43%
<b>MANAGEMENT SERVICES</b>				
<b>Legislative &amp; Regulatory</b>				
Legislative Representation	1,897	720	1,177	62%
Regulatory Representation	794	403	392	49%
Western Representation	817	278	539	66%
Member Services	432	179	253	59%
	3,940	1,579	2,361	60%
<b>Judicial Action</b>	625	286	339	54%
<b>Power Management</b>				
System Control & Load Dispatch	5,622	2,502	3,120	55%
Forecasting & Prescheduling	2,555	1,042	1,513	59%
Industry Restructuring	414	149	265	64%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,137	409	728	64%
Green Power Project	18	1	17	95%
Gas Purchase Program	87	29	57	66%
Market Purchase Project	128	40	88	69%
	9,960	4,171	5,788	58%
<b>Energy Risk Management</b>	212	53	159	75%
<b>Settlements</b>	862	246	616	71%
<b>Integrated System Support</b>	311	77	233	75%
<b>Participant Pass Through Costs</b>	1,417	648	769	54%
<b>Support Services</b>	-	26	(26)	
	17,326	7,086	10,240	59%
<b>TOTAL ANNUAL BUDGET COST</b>	650,328	266,080	384,249	59%
<b>LESS: THIRD PARTY REVENUE</b>				
Plant ISO Energy Sales	118,943	30,602	88,341	74%
Load Aggregation Energy Sales	184,117	53,109	131,008	71%
Ancillary Services Sales	3,790	1,999	1,791	47%
Other ISO Revenue	-	6,642	(6,642)	
Transmission Sales	110	55	55	50%
Western Credits, Interest & Other Income	14,811	11,553	3,257	22%
	321,770	103,960	217,810	68%
<b>NET ANNUAL BUDGET COST TO PARTICIPANTS</b>	328,558	162,120	\$ 166,438	51%



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

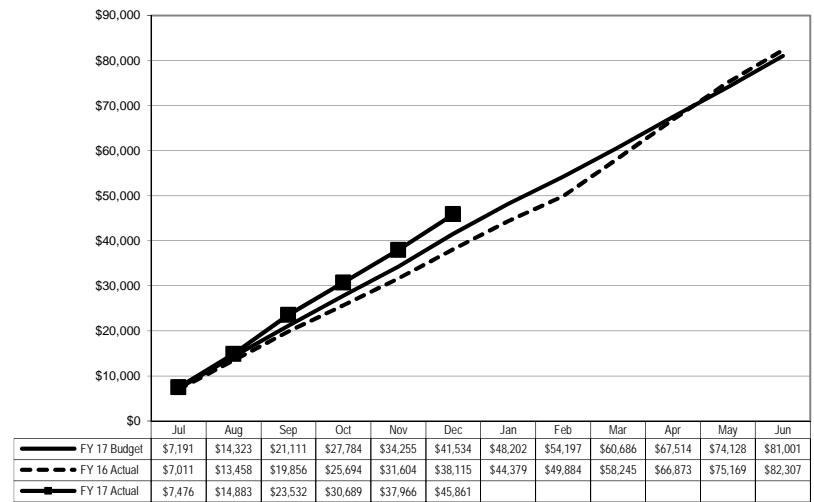
In Thousands

**Generation Resources**



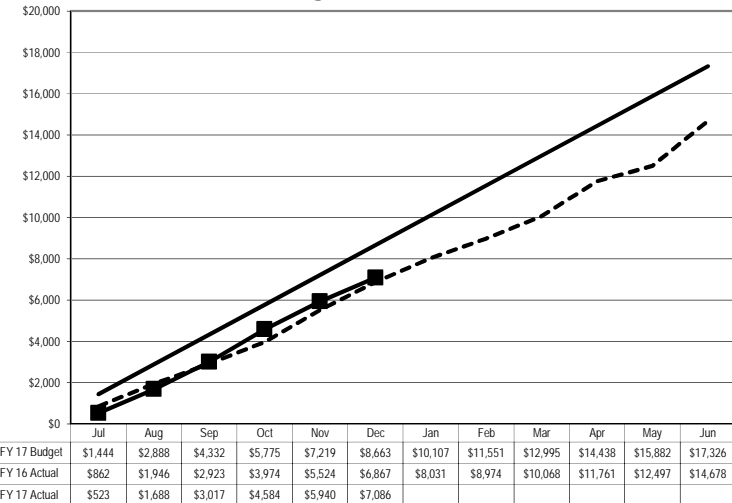
In Thousands

**Transmission-ISO**



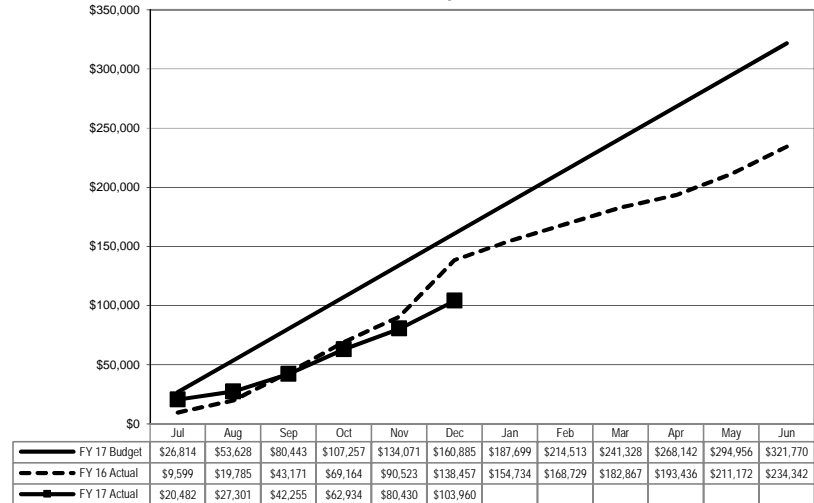
In Thousands

**Management Services**



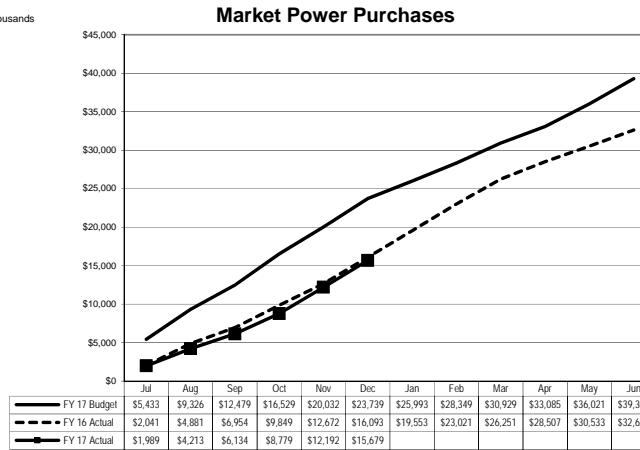
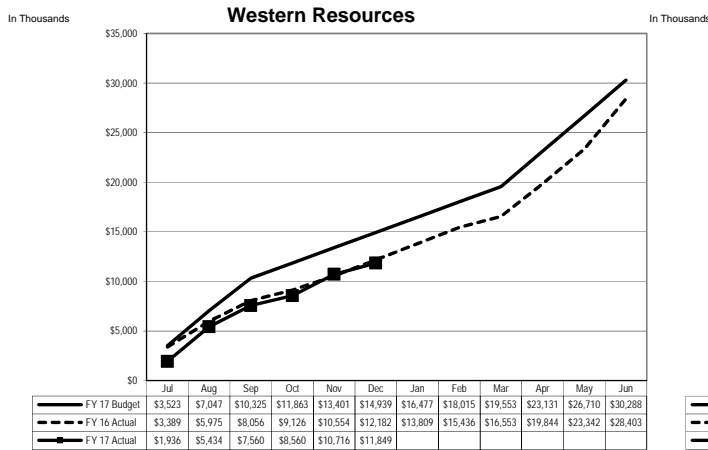
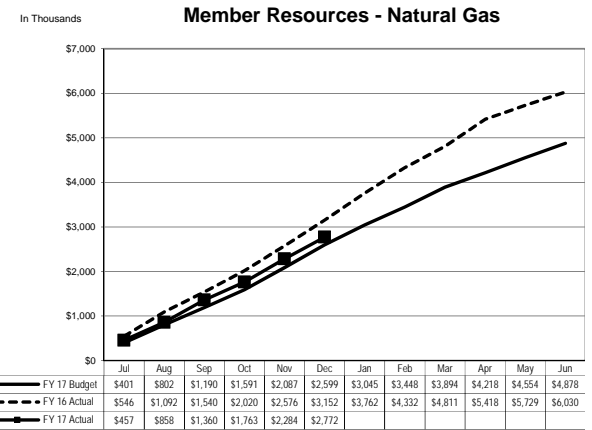
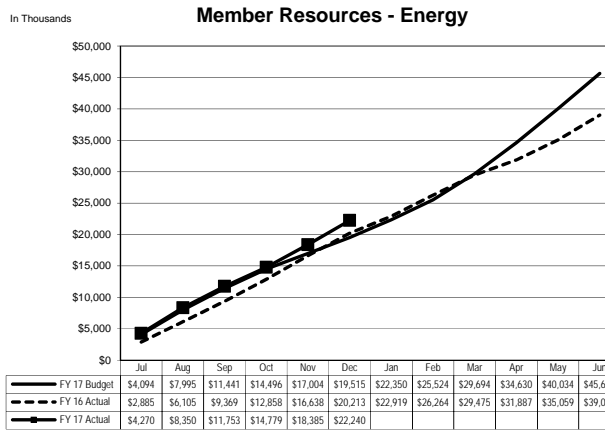
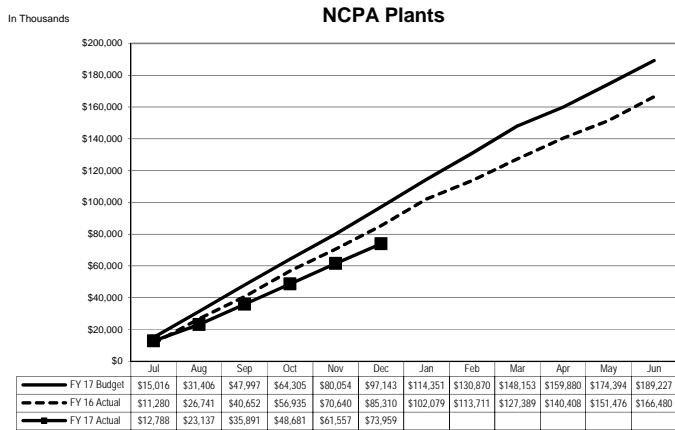
In Thousands

**Third Party Revenue**



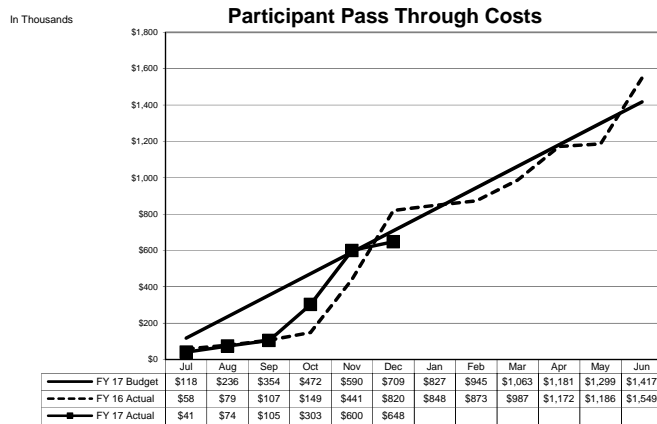
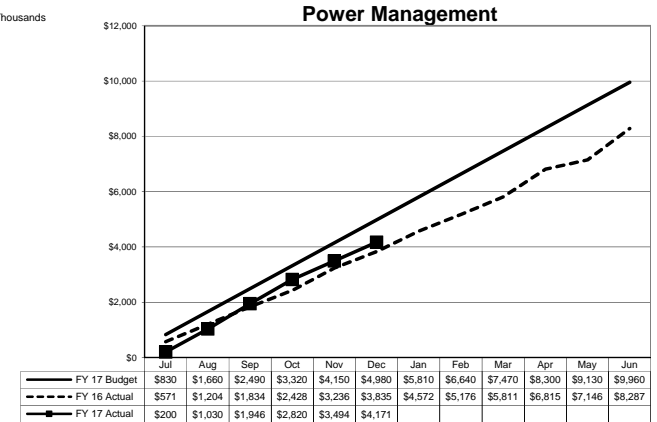
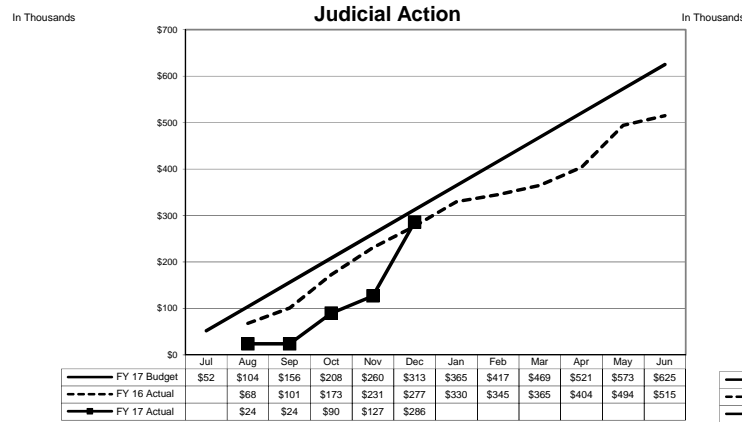
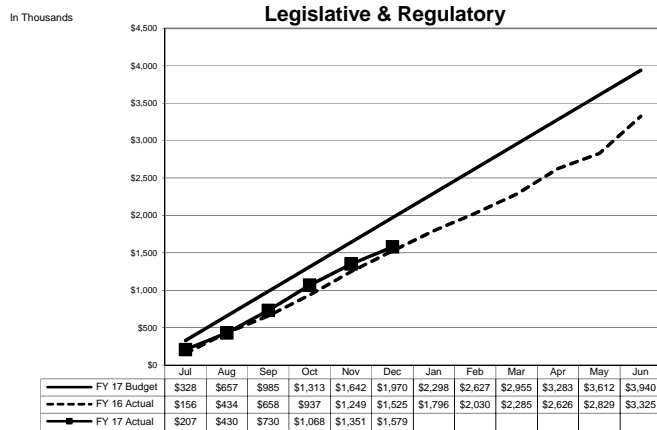
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

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



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

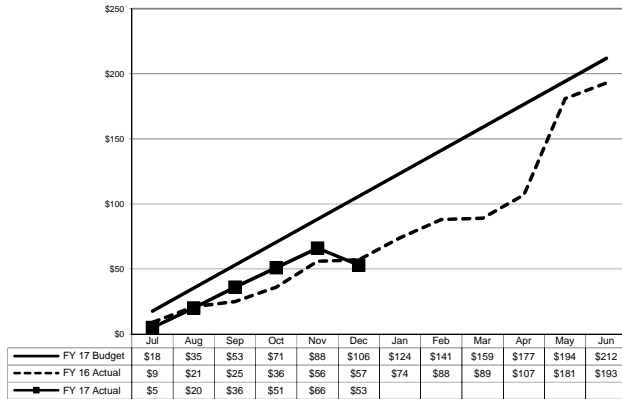
**Annual Budget Cost  
Management Services Analysis By Source  
2016-2017 Fiscal Year To Date  
As of December 31, 2016**



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

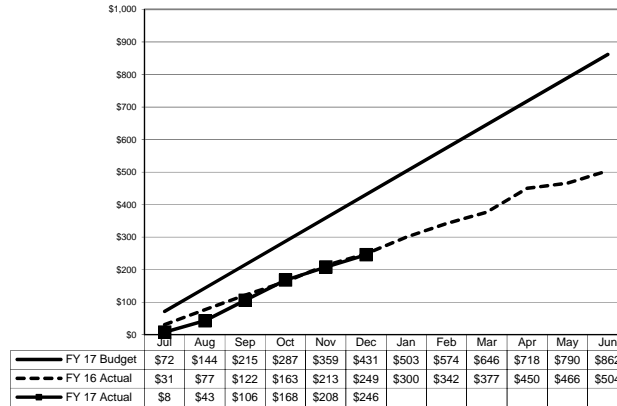
In Thousands

**Energy Risk Management**



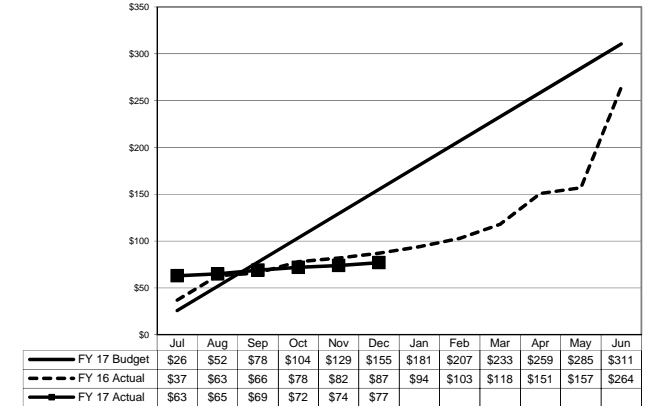
In Thousands

**Settlements**

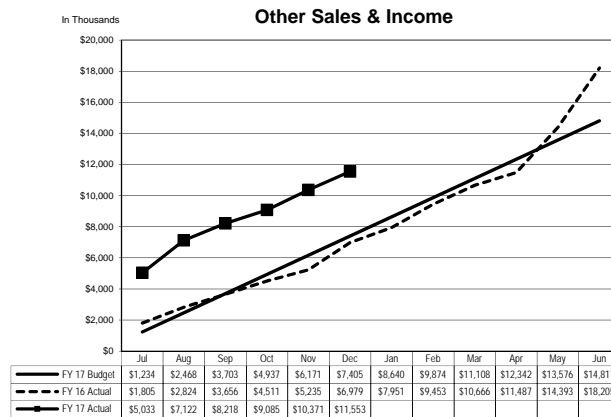
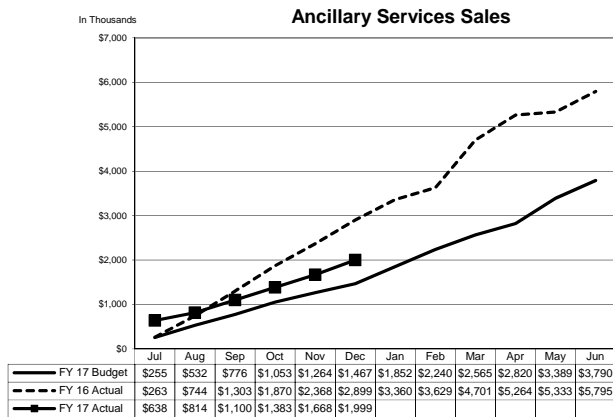
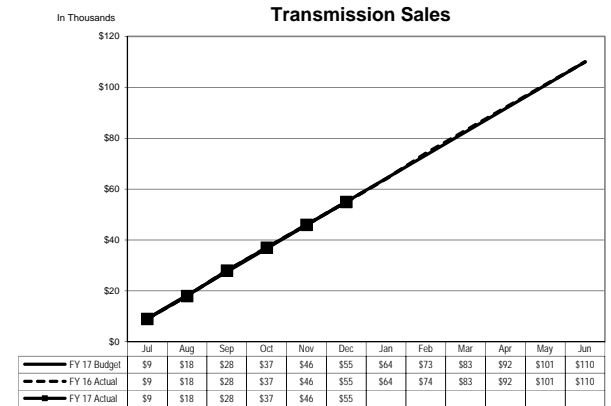
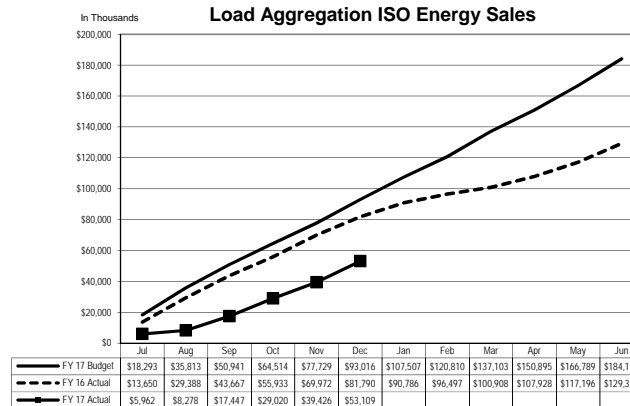
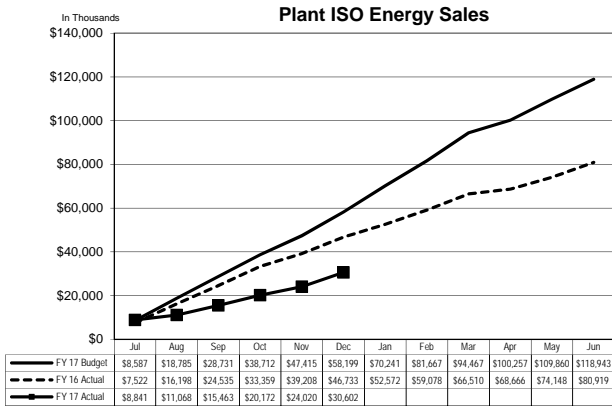


In Thousands

**Integrated Systems Support**



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



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

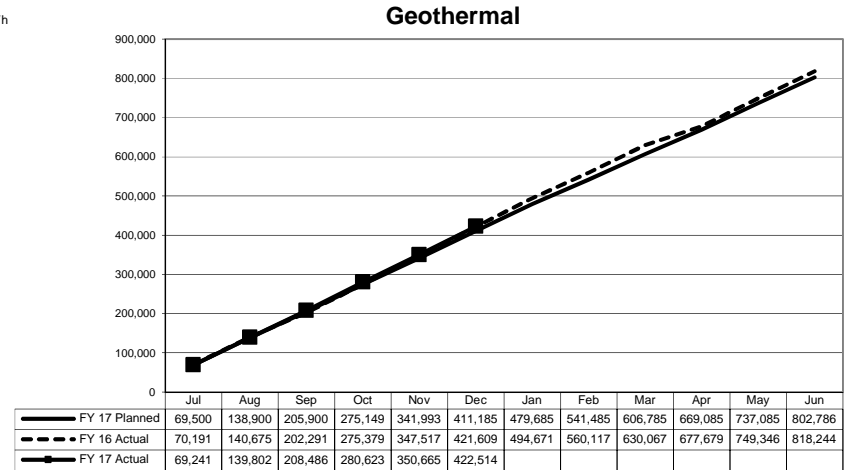
**Generation Cost Analysis**

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh Actual	Under(Ovr) Budget	YTD % Remaining
	Routine O & M	\$ 17,159	\$ 7,855	\$ 18.59	\$ 9,304
Capital Assets/Spare Parts Inventories	2,575	364	0.86	2,211	86%
Other Costs	7,994	3,327	7.87	4,667	58%
CA ISO Charges	308	330	0.78	(22)	-7%
Debt Service	5,110	2,505	5.93	2,605	51%
Annual Budget	33,145	14,380	34.03	18,765	57%
Less: Third Party Revenue					
Interest Income	32	89	0.21	(57)	-175%
ISO Energy Sales	30,113	14,574	34.49	15,539	52%
Ancillary Services Sales	-	1	0.00	(1)	
Effluent Revenues	700	299	0.71	401	57%
Misc	110	345	0.82	(235)	
	30,955	15,308	36.23	15,647	51%
Net Annual Budget Cost to Participants	\$ 2,190	\$ (928)	\$ (2.20)	\$ 3,118	142%
Net Generation--MWh @ Meter	802,786	422,514			
\$/MWh (A)	\$ (3.64)	\$ (8.12)			

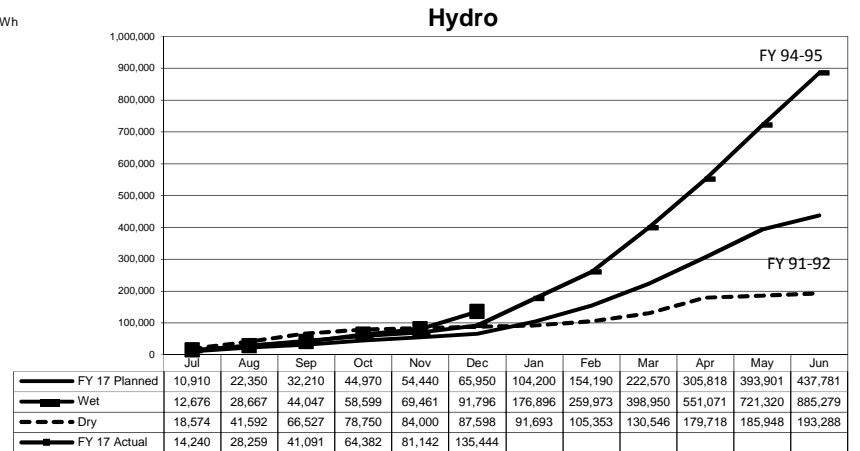
**MWhs Generated**

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh Actual	Under(Ovr) Budget	YTD % Remaining
	Routine O & M	\$ 8,369	\$ 3,363	\$ 24.83	\$ 5,006
Capital Assets/Spare Parts Inventories	2,135	1,006	7.42	1,129	53%
Other Costs	2,861	1,088	8.04	1,773	62%
CA ISO Charges	237	564	4.16	(327)	-138%
Debt Service	38,253	19,126	141.21	19,126	50%
Annual Budget	51,854	25,147	185.66	26,708	52%
Less: Third Party Revenue					
Interest Income	91	148	1.09	(57)	-63%
ISO Energy Sales	19,542	5,968	44.06	13,575	69%
Ancillary Services Sales	2,487	1,537	11.35	950	38%
Misc	-	27	0.20	(27)	
	22,120	7,680	56.70	14,440	65%
Net Annual Budget Cost to Participants	\$ 29,734	\$ 17,467	\$ 128.96	\$ 12,268	41%
Net Generation--MWh @ Meter	437,781	135,444			
\$/MWh (A)	\$ (19.46)	\$ (12.25)			

In MWh



Footnotes:

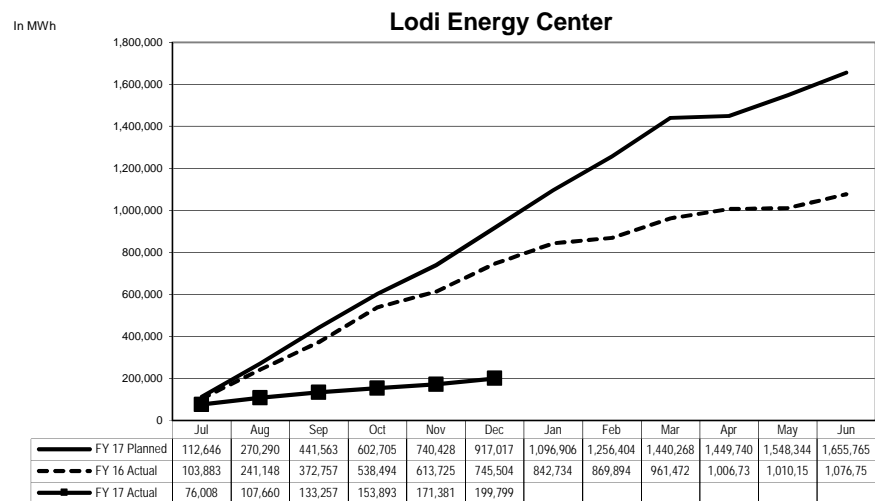
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

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

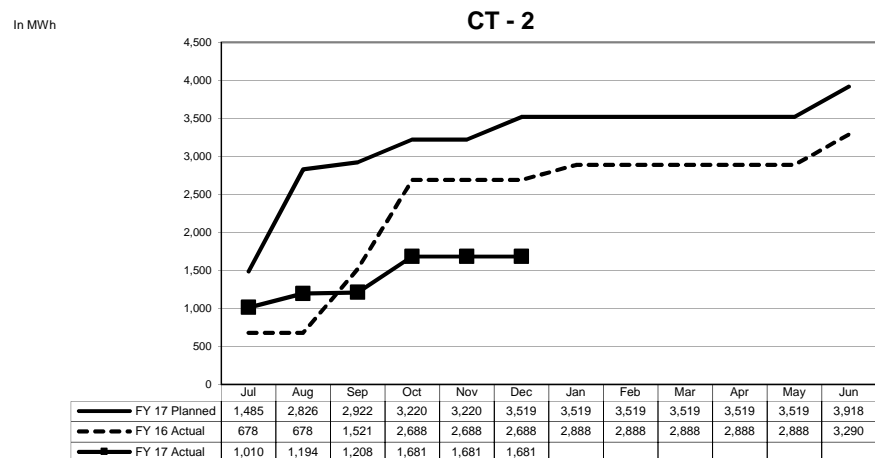
**Generation Cost Analysis**

<b>Lodi Energy Center</b>					
	<b>Budget</b>	<b>Actual</b>	<b>\$/MWh Actual</b>	<b>Under(Ovr) Budget</b>	<b>YTD % Remaining</b>
Routine O & M	\$ 14,041	\$ 5,375	\$ 26.90	\$ 8,666	62%
Fuel	44,101	5,799	29.02	38,302	87%
AB 32 GHG Offset	-	-	-	-	-
CA ISO Charges and Energy Purchases	2,374	1,858	9.30	516	22%
Capital Assets/Spare Parts Inventories	2,805	960	4.80	1,845	66%
Other Costs	3,233	1,425	7.13	1,809	56%
Debt Service	26,437	13,204	66.08	13,234	50%
<b>Annual Budget</b>	<b>92,991</b>	<b>28,620</b>	<b>143.24</b>	<b>64,371</b>	<b>69%</b>
Less: Third Party Revenue					
Interest Income	44	94	0.47	(49)	-110%
ISO Energy Sales	68,846	9,494	47.52	59,353	86%
Ancillary Services Sales	1,303	230	1.15	1,072	82%
Transfer Gas Credit	-	-	-	-	0%
Misc	3	4,361	21.83	(4,358)	0%
	70,197	14,179	70.96	56,018	80%
<b>Net Annual Budget Cost to Participants</b>	<b>\$ 22,795</b>	<b>\$ 14,441</b>	<b>\$ 72.28</b>	<b>\$ 8,353</b>	<b>37%</b>
<b>Net Generation--MWh @ Meter</b>	<b>1,655,765</b>	<b>199,799</b>			
<b>\$/MWh (A)</b>	<b>\$ (2.20)</b>	<b>\$ 6.19</b>			

**MWhs Generated**



<b>Combustion Turbine No. 2 (STIG)</b>					
	<b>Budget</b>	<b>Actual</b>	<b>\$/MWh Actual</b>	<b>Under(Ovr) Budget</b>	<b>YTD % Remaining</b>
Routine O & M	\$ 1,413	\$ 638	\$ 379.42	\$ 775	55%
Fuel and Pipeline Transport Charges	936	418	248.48	518	55%
Capital Assets/Spare Parts Inventories	133	25	14.85	108	81%
Other Costs	477	186	110.35	292	61%
CA ISO Charges	2	46	27.20	(43)	-1898%
Debt Service	5,626	2,813	1,673.22	2,813	50%
<b>Annual Budget</b>	<b>8,587</b>	<b>4,125</b>	<b>2,453.52</b>	<b>4,463</b>	<b>52%</b>
Less: Third Party Revenue					
Interest Income	19	26	15.43	(7)	-39%
ISO Energy Sales	282	123	73.44	158	56%
Ancillary Service Sales	-	0	0.01	(0)	0%
Fuel and Pipeline Transport Credits	415	591	351.36	(176)	-42%
Misc	-	-	-	-	0%
	715	740	440.24	(25)	-3%
<b>Net Annual Budget Cost to Participants</b>	<b>\$ 7,872</b>	<b>\$ 3,384</b>	<b>\$ 2,013.28</b>	<b>\$ 4,487</b>	<b>57%</b>
<b>Net Generation--MWh @ Meter</b>	<b>3,918</b>	<b>1,681</b>			
<b>\$/MWh (A)</b>	<b>\$ 573.32</b>	<b>\$ 340.06</b>			



**Footnotes:**

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

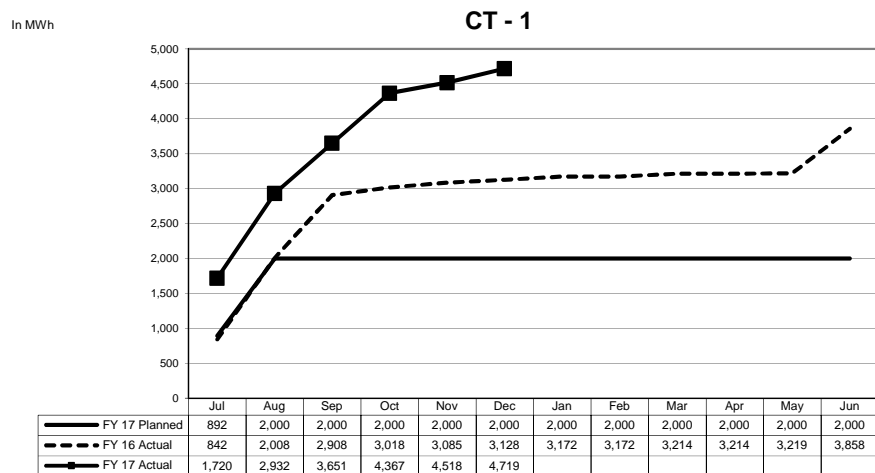


**Annual Budget  
NCPA Generation Detail Analysis By Plant  
2016-2017 Fiscal Year To Date  
As of December 31, 2016**

**Generation Cost Analysis**

	<b>Combustion Turbine No. 1</b>				
	Budget	Actual	\$/MWh Actual	Under(Ovr) Budget	YTD % Remaining
Routine O & M	\$ 1,459	\$ 812	\$ 172.00	\$ 648	44%
Fuel and Pipeline Transport Charges	174	335	71.01	(161)	-93%
Capital Assets/Spare Parts Inventories	525	275	58.21	250	48%
Other Costs	489	184	39.03	305	62%
CA ISO Charges	1	82	17.43	(81)	-7885%
Debt Service	-	-	-	-	-
<b>Annual Budget</b>	<b>2,648</b>	<b>1,688</b>	<b>357.68</b>	<b>960</b>	<b>36%</b>
Less: Third Party Revenue					
Interest Income	0	-	-	0	-
ISO Energy Sales	160	443	93.89	(283)	0%
Ancillary Services Sales	-	0	0.03	(0)	0%
Misc	-	16	3.31	(16)	0%
	161	459	97.23	(298)	-186%
<b>Net Annual Budget Cost to Participants</b>	<b>\$ 2,488</b>	<b>\$ 1,229</b>	<b>\$ 260.45</b>	<b>\$ 1,259</b>	<b>51%</b>
Net Generation--MWh @ Meter	2,000	4,719			
<b>\$/MWh (A)</b>	<b>\$ 1,243.89</b>	<b>\$ 260.45</b>			

**MWhs Generated**



Footnotes:

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