



# BUSINESS PROGRESS REPORT

## JULY 2018



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# Generation Costs & Reliability

## Combustion Turbine Project

### Unit Operation for June 2018

Unit	Availability		Production			Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	CT1 Alameda	Unit 1	Unit 2
	100.0%	100.0%	Unit 2	230.4	100.0%	
Curtailements, Outages, and Comments:						
Alameda CT U1 o/s for compressor blade repair, ETR 08/31 OMS 6125777 Alameda CT U1 o/s due to transmission outage, 6/30 at 2300 through 7/1 at 0900, OMS 6120958 / Alameda CT U2 o/s, 1500-1523 OMS 6101618 Alameda Unit #2 unit trip 1419 - 1820 OMS 6125779 Alameda U2 tripped during startup 1400-1450 OMS 6138012 Alameda U2 tripped on high exhaust temp 1622-2359 OMS 6138596 Alameda U2 tripped on water to fuel ratio issue, 1425-1730 OMS 6140823 Alameda CT U2 o/s due to transmission outage, 6/30 at 2300 through 7/1 at 0900, OMS 6120960						
Unit	Availability		Production			Reason for Run
CT1 Lodi	0.8%		129.8	CT1 Lodi	0.8%	
Curtailements, Outages, and Comments:						
Lodi GT derate PG&E gas line emergency repair 0600 6/20 – 0621 6/21, OMS 6124443 Lodi GT gen breaker failed to close at 1915, ETR 0800 6/22 OMS 6135310 Lodi CT O/S on hydraulic ratchet pump overload alarm, ETR 0900 on 6/24 OMS 6139895 Lodi CT tripped due to voltage control issue 1917-2030 OMS 6146776 Lodi CT o/s due to ratchet motor trip ETR 2100 on 6/29 OMS 6155401 Lodi CT returned to service at 0830. OMS 6155401						
Unit	Availability		Production			Reason for Run
CT2 STIG	100.0%		260.3	CT2 STIG	100.0%	
Curtailements, Outages, and Comments:						
STIG derate PG&E gas line emergency repair 0600 6/20 – 0621 6/21, OMS 6124455						
Unit	Availability		Production			Reason for Run
LEC	100.0%		35,347	LEC	100.0%	
Curtailements, Outages, and Comments:						
LEC curtailed due to PG&E gas line work, 6/20 @ 0600 - 6/21 @ 1700 OMS 6123458 LEC derate PG&E gas line emergency repair 0600 6/20 – 0621 6/21, OMS 6124474						

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

## Geothermal Facilities

### Availability/Production for June 2018

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
<b>Unit 1</b>	100 %	20,800 MWh	U1 had no outages for the month
<b>Unit 2</b>	100 %	*17,784 MWh	U2 had no outages for the month
<b>Unit 3</b>	N/A %	N/A	Unit 3 remains out of service.
<b>Unit 4</b>	99.10 %	30,144 MWh	U4 was OOS 6/15/18 from 0600 until 1300 for PG&E/Calpine line disconnect testing
<b>Southeast Geysers Effluent Pipeline</b>	100 %	242.3 mgallons	Average flow rate: 4,479 gpm
<b>Southeast Solar Plant</b>	N/A	56,697 KWh	Year-to-date KWh: 1,273,247
<b>Bear Canyon Pump Station Zero Solar</b>	N/A	146,766 KWh	Year-to-date KWh: 2,572,191

\* Accounts for an additional 1,764 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

## Hydroelectric Project

### Availability/Production for June 2018

Units	Availability	Net Electricity Generated	Out-of-Service
<b>Collierville Unit 1</b>	100.00 %	8482 MWh	CV #1 unit no reportable outages.
<b>Collierville Unit 2</b>	99.35 %	10162 MWh	CV #2 unit was out of service on, 06/13/18 at 0900 through 1241 due to Andritz pre-rewind walkdown
<b>Spicer Unit 1</b>	100.00 %	1105 MWh	NSM #1 unit no reportable outages.
<b>Spicer Unit 2</b>	99.03 %	595 MWh	NSM #2 unit was out of service on, 06/11/18 at 0911 through 1428 due to wicket gate pilot valve replacement. NSM #2 unit was out of service on, 06/27/18 at 0914 through 1056 due to wicket gate pilot valve replacement
<b>Spicer Unit 3</b>	100.00 %	208 MWh	NSM #3 unit no reportable outages.

#### Operations & Maintenance Activities:

- CMMS work orders
- Planning and Preparation for CV2 Generator rewind
- CV Intake and Fish Flow trash rack ROV inspection
- CV#2 Andritz Pre-rewind stator and facility inspection
- USGS/Stream gaging Semi-annual quality control inspection
- Hydro Facility EH&S inspection
- Mckays Point Diversion Dam Instrumentation Report (DSOD)

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

- No lost time accidents or recordable incidents occurred in June 2018. One vehicle accident occurred at the CT's. An employee's work truck was parked outside his house and a hit and run occurred. The employee was not present at the time, and no injuries were reported. The vehicle is currently being repaired.
- 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 June 23, 2018.
- The "CT Group" column reflects the combined safety numbers of all CT employees. Beginning with the November 2009 report, the CT Group Column also includes Lodi Energy Center staff.

### June 2018 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	1,284	218	1,174	6,242
Work Hours Since Last Recordable	112,047	44,129	172,940	2,253,346
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	3,900	1,037	9,078	5,171
Work Hours without LTA	357,612	210,797	614,304	1,875,364
Vehicle Incident (month)	0	0	1	0
Vehicle Incident (calendar year)	1	0	2	0

\* CT Group: Combines CT-1, CT-2 and LEC Operations

\*\* NCPA HQ: Roseville employees at the Main Office

Data originates from OSHA logs, HR records and payroll information.  
Days and Hours are calculated through pay period ended June 23, 2018.

## 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 2018 Data**

	<b>June 2018</b>		<b>Calendar Year 2018</b>	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	396.04 6/22 @ 1800	193,939	396.04 6/22 @ 1800	1,114,347
SVP	512.9 6/12 @ 1500	307,699	512.9 6/12 @ 1500	1,811,706
MSSA	906.27 6/22 @ 1800	501,638	906.27 6/22 @ 1800	2,926,053

#### **Last Year 2017 Data\***

	<b>June 2017</b>		<b>Calendar Year 2017</b>	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	463.98 6/19 @ 1600	206,460	485.85 9/1 @ 1700	1,153,929
SVP	570.18 6/22 @ 1500	315,170	586.59 9/1 @ 1600	1,736,031
MSSA	1025.83 6/22 @ 1500	521,630	1070.79 9/1 @ 1700	2,889,960

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

#### **System Peak Data**

	<b>All Time Peak Demand</b>	<b>2018 Peak Demand</b>
NCPA Pool	517.83 MW on 7/24/06 @ 1500	396.04 6/22 @ 1800
SVP	586.59 MW on 9/1/17 @ 1600	512.9 6/12 @ 1500
MSSA	1070.79 MW on 9/1/17 @ 1700	906.27 6/22 @ 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.

<b>NCPA Deviation Band Performance</b>		
	<b>June 2018</b>	<b>Calendar Year 2018</b>
MSSA % Within the Band	95.00%	97.18%

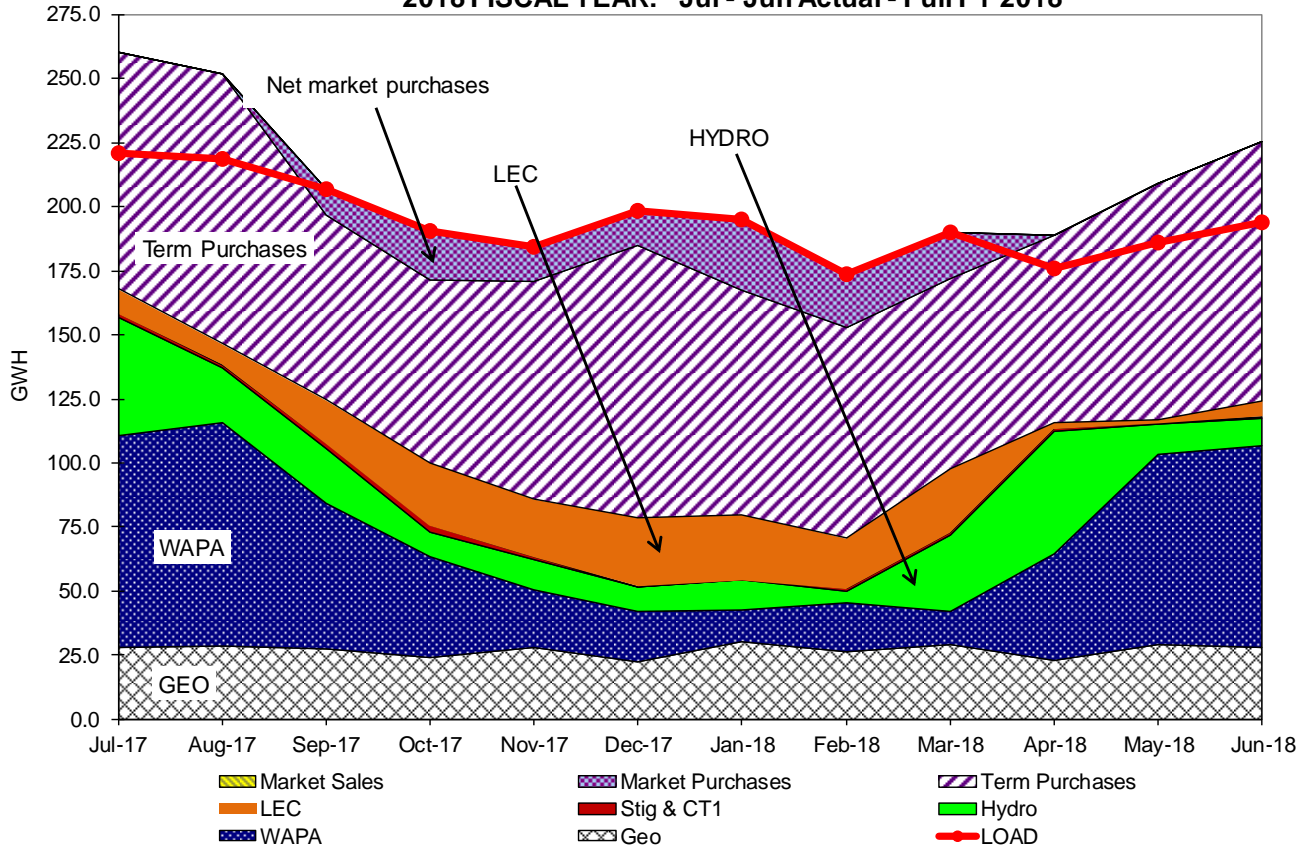
- Spicer Meadows:
  - June 11 @ 0911 – 1428 & June 27 @ 0914 - 1056, Unit 2 o/s for wicket gate pilot valve replacement
  
- Geothermal Units:
  - June 15 @ 0610 – 1300, Unit off line for PG&E Geysers 12 – Fulton 230kV line outage
  
- Lodi Energy Center:
  - June 20 @ 0600 – June 21 @ 0621, plant derated due to PG&E emergency repairs to gas line 108
  
- Alameda CTs:
  - June 12 @ 1500 – 1523, Unit 2 failed start due to IGV trouble
  - June 19 @ 1419 – 1800, Unit 2 trip due to inlet blow-in door position switch
  - June 19 @ 1420, Unit 1 trip due to compressor blade failure. Remains o/s
  - June 22 @ 1400 – 1514, Unit 2 trip on high EGT
  - June 22 @ 1622 – 2359, Unit 2 trip due to water/fuel ratio trouble
  - June 23 @ 1425 – 1730, Unit 2 trip due to water/fuel ratio trouble
  - June 30 @ 2300 – July 1 @ 0806, Unit 1 and 2 unavailable due to PG&E transmission outage
  
- Lodi CT:
  - June 1 @ 0000 – 1141, unit o/s failed start
  - June 20 @ 0600 – June 21 @ 0621, unit o/s due to PG&E emergency repairs to gas line 108
  - June 21 @ 1912 – June 22 @ 1130, unit o/s due to failed start and daily emissions limitation
  - June 23 @ 0120 – June 25 @ 0847, unit o/s due to ratchet trouble
  - June 25 @ 1912 – 2030, unit o/s failed start
  - June 27 @ 2111 – June 29 @ 0830, unit o/s due to ratchet trouble
  
- Collierville Units:
  - June 11 @ 1200 – 1303, Unit 1 & 2 derated for ROV inspection of McKays intake trash rack
  - June 13 @ 0900 – 1241, Unit 2 o/s for pre-rewind walk down by Andritz Hydro
  
- STIG:
  - June 20 @ 0600 – June 21 @ 0621, unit o/s due to PG&E emergency repairs to gas line 108



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

- Actual NCPA Pool load of 193,859 MWh during June 2018 was 94.8% of the pre-month forecast of 204,523 MWh. Pool load, totaling 81,356 MWh through July 12 may not reach the load forecast of 221,327 MWh, even if the current hot spell continues. Last July at this point pool load had reached 83,780 MWh.
- The Lodi Energy Center (LEC) generated 6,365 MWh for the pool in June 2018, which was 95% of the 6,706-MWh forecast. Ongoing supply disruptions in SoCal in addition to high temperatures have brought the pool's share of LEC generation through July 12 to 9,600 MWh, which puts the pre-month forecast of 28,044 MWh in sight if weekend temperatures remain above normal statewide.
- For the month of June 2018, 0.04" of rain was recorded at the Big Trees gage. June Big Trees average precipitation is 0.80".
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) is being maintained at \$50/MWh.
- NSMR storage as of June 30, 2018 was at 157,603 acre feet. The historical average NSMR storage at the end of June is 147,118 acre feet. As of July 17, 2018 NSMR storage is 147,587 acre feet. The current NCPA Pool share of NSMR storage is 75,278 acre feet.
- Combined Calaveras Project generation for the Pool in June 2018 totaled 10.5 GWh, down from 11.5 GWh in May 2018. The Pool's 10.5 GWh in June 2018 was near the pre-month forecast of 10.3 GWh. Through July 17, 2018 Calaveras generation for the Pool is 9.4 GWh.
- Western Base Resource (BR) Pool delivery in June 2018 was 78,807 MWh, or 91.6% of Western's 86-GWh forecast. Through July 12, 2018 BR pool allocations of 49.5 GWh (including 2.5 GWh Displacement) have already reached 60% of Western's most recent 86,004-MWh June 2018 forecast.
- The PG&E Citygate gas index traded at \$2.955/MMBtu for July 13, 2018 delivery, and has traded below the \$3 handle since July 1. Compare to an average of \$2.998/MMBtu (with a high of \$3.10/MMBtu) in June. The July 2018 PG&E Bidweek price is \$2.98, down 12 cents from June's Bidweek price and the only Western hub where the Bidweek price declined.
- Day-ahead NP15 electricity prices averaged \$31.18/MWh (HLH) and \$23.98 (LLH) during June 2018, with the hourly TH\_NP15 maximum at \$93.34/MWh and the minimum a negative \$5.40. So far in July, on-peak prices have averaged \$42.02, with highs reaching over \$100/MWh.

## NCPA POOL RESOURCES 2018 FISCAL YEAR: Jul - Jun Actual - Full FY 2018



NCPA Pool Loads & Resources Value Summary								
	Peak and Energy Summary Jun-18				Estimated Production Costs		Cost of Serving Demand	
	Coincident Peak (MW) Jun-22-18 Hour 18	Total MWh	Forecast Values		NCPA Pool		Totals	Avg (\$/MWh)
				Avg. MW	Cost/Revenue (\$/MWh) (Estimate)	Variable Cost (\$/MWh)		
<b>Demand</b>	393.6	193,859	204,523	269.2	N/A	N/A		
<b>WAPA</b>	192.0	78,807	86,004	109.5	\$ 1,516,215	\$ 19.24	\$ 5,960,568	\$ 30.75
<b>Geothermal</b>	-	27,888	27,242	38.7	529,871	19.00		
<b>Hydro</b>	-	10,500	10,874	14.6	63,000	6.00		
<b>Stig &amp; CTs</b>	-	827	676	1.1	44,423	53.72		
<b>LEC</b>	-	6,365	6,706	8.8	207,701	32.63		
<b>Contracts</b>	152.6	101,093	94,508	140.4	6,276,764	62.09	\$ 7,426,591	\$ 38.31
<b>Market - Net</b> (Net Sales = Negative)	49.0	(31,621)	(21,487)	(43.9)	(929,941)	29.41		
<b>Net Total</b>	393.6	193,859	204,523	269.2	\$ 7,708,033	\$ 38.31		

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 6/1/2018 (\$/MWh)	7/13/2018 (\$/MWh)
Jul-17	221,169	\$ 39.42	\$ 36.21		Jul-18 \$ 50.12	\$ 51.48
Aug-17	223,320	\$ 51.70	\$ 37.30		Aug-18 \$ 54.74	\$ 54.34
Sep-17	206,930	\$ 45.07	\$ 40.69		Sep-18 \$ 50.95	\$ 49.06
Oct-17	190,730	\$ 44.93	\$ 39.05		Q3 2018 \$ 51.94	\$ 51.63
Nov-17	184,467	\$ 38.23	\$ 39.53		Q4 2018 \$ 43.22	\$ 40.76
Dec-17	198,630	\$ 35.89	\$ 40.56		Q1 2019 \$ 38.33	\$ 36.49
Jan-18	195,093	\$ 34.68	\$ 43.74		CY2019 \$ 37.33	\$ 35.34
Feb-18	173,464	\$ 32.12	\$ 43.94		CY2020 \$ 39.67	\$ 37.40
Mar-18	190,023	\$ 31.58	\$ 39.43		CY2021 \$ 42.90	\$ 41.07
Apr-18	175,890	\$ 26.51	\$ 39.05		CY2022 \$ 44.67	\$ 43.18
May-18	185,890	\$ 22.58	\$ 40.72		CY2023 \$ 45.94	\$ 44.71
Jun-18	193,859	\$ 30.75	\$ 38.31		CY2024 \$ 47.16	\$ 45.76

**NOTES TO SUMMARY TABLE:**

**Peak and Energy Summary:**

\* Monthly generation summary of Coincidental Peak (hour in which pool demand peaked), total MWh for the month, and pre-month forecasted values for report period.

\* Generation totals are for POOL SHARE of the projects.

\* Hydro totals include Collierville and Spicer generation.

**Estimated Production Costs:**

\* Fixed project costs not included except for WAPA, where total month's project costs are used to calculate the average unit cost.

\* STIG and CT costs include forward natural gas and basis hedge transactions.

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

**Cost of Serving Demand:**

Compares price of meeting total monthly demand with (1) Hourly pool market clearing price;

(2) Variable cost of pool gen. Pool Gen is sum of estimated costs divided by sum of generation.

## **Industry Restructuring, Contracts and Interconnection Affairs**

### **Resource Adequacy Compliance Filings**

- NCPA made the following Resource Adequacy compliance filings with the CAISO for the compliance period September 2018:
  - Monthly System Resource Adequacy Demonstration (filed July 17, 2018)
  - Monthly Supply Plan (filed July 17, 2018)

### **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 the current active initiatives:

#### **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.

#### **Flexible Resource Adequacy Criteria and Must Offer Obligation (FRAC MOO Phase 2)**

- This initiative will explore further enhancements to flexible capacity requirements to help address generation oversupply and ramps less than three hours. This effort also seeks new rules to allow inertie resources and storage resources' not operating under non-generator resource provisions to provide flexible capacity. Through this effort, CAISO will also assess the impact of merchant variable energy resources on flexible capacity requirements.

#### **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 <sup>1</sup> (MWh)	BR Delivered (MWh)	Difference (MWh)	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-17	71,656	82,819	11,163	\$2,334,679	\$ 28.19	\$ 1.60	\$ 27.59
Aug-17	55,736	79,371	23,635	\$2,334,679	\$ 29.41	\$ 0.08	\$ 27.14
Sep-17	56,044	57,011	967	\$1,979,032	\$ 34.71	\$ 0.12	\$ 26.27
Oct-17	33,604	39,352	5,748	\$833,923	\$ 21.19	\$ 0.79	\$ 25.27
Nov-17	19,601	22,441	2,840	\$833,923	\$ 37.16	\$ 0.27	\$ 24.46
Dec-17	15,404	19,821	4,417	\$833,923	\$ 42.07	\$ 0.25	\$ 24.15
Jan-18	7,358	12,360	5,002	\$833,923	\$ 67.47	\$ 0.08	\$ 25.66
Feb-18	13,359	18,713	5,354	\$833,923	\$ 44.56	\$ 0.05	\$ 27.59
Mar-18	30,216	12,955	(17,261)	\$833,923	\$ 64.37	\$ 0.00	\$ 29.84
Apr-18	50,443	41,280	(9,163)	\$1,955,240	\$ 47.37	\$ 0.02	\$ 31.11
May-18	66,832	74,195	7,363	\$1,516,218	\$ 20.44	\$ 0.10	\$ 32.10
Jun-18	74,030	78,807	4,777	\$1,516,218	\$ 19.24	\$ 0.10	\$ 31.25
1/	As forecasted in NCPA 17/18 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.						

- The Displacement Program continued to perform for Pool Members with April activity of 3,000 MWh for an estimated saving of \$29,000, or about \$9.60/MWh. The program has saved Pool Members over \$1.3 Million in FY18.
- Pool Members' total savings under MEEA pricing is about \$184,000 for FY18 (July-June).

## **Debt and Financial Management**

- Given the strength of the U.S. economy, analysts expect the Fed to hike rates at least once more this year. New tariffs on imported goods could put further pressures on U.S. prices in the short run, thus supporting the Fed's action.
- Despite a rise in the federal funds rate, long-term Treasury yields declined in June, with the 30-year bond ending the month at a yield of 2.99%. Meanwhile, maturities in the one to five year range increased by 4 to 10 bps, furthering the trend toward a flat yield curve.
- NCPA staff continues to receive marketing materials from investment bankers regarding the 2010 Hydroelectric bonds, Series 2010A. While the bonds are not callable until 7/1/2019, current refunding estimates look attractive. Staff will present this analysis to Finance Committee in August looking for direction to issue an RFP for underwriting services.
- The actuarial report regarding NCPA's Other Post-Employment Benefits (OPEB – aka retiree medical) for the period ending June 30, 2017 indicated an improved funded ratio of 78% compared to 60% from the previous valuation. Details of this report will be presented to Finance Committee in August.

## **Schedule Coordination Goals**

### **Software Development**

- NCPA IS Staff in collaboration with Accounting Staff continue to work on the remaining configuration of systems for the Hometown Connection Inc.
- 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. Rollout is anticipated for September 2018.
- NCPA IS Staff is configuring the software applications in preparation for the the new Community Choice Energy (CCE) customer, San Jose CCE, anticipated to go live on September 1<sup>st</sup>.
- Various other software development is underway. The Resource Adequacy Compliance App is a tool to manage RA supply planning and compliance tracking. The Green House Gas (GHG) Accounting App is a tool for the business user to track GHG transactions by Member. The Shared Services App has three modules about Training, Support Services, and Vendor Contracts. It calculates the billable amount for the Member's portion of the Shared Services.

## **Network**

- The IS team is currently testing a new Storage Area Network with the expectation to make a purchase in the near future.
- The Operations and Support group has been working alongside the Generation Services Hydro staff to reroute business, PI and realtime telemetry networks across the new Microwave pathing from Murphys to Collierville. This has improved speed, performance, and reliability from the old circuitry.
- Collabware was selected as the SharePoint solution to provide records retention capabilities for NCPA documents. This software will be implemented immediately after upgrading to SharePoint 2016, which is anticipated to be completed by summer of this year.
- Information Services has continued providing support to the Generation Services business unit to assist expansion of its physical security presence at each of the plant locations. Geothermal is the last site that needs additional networking support.

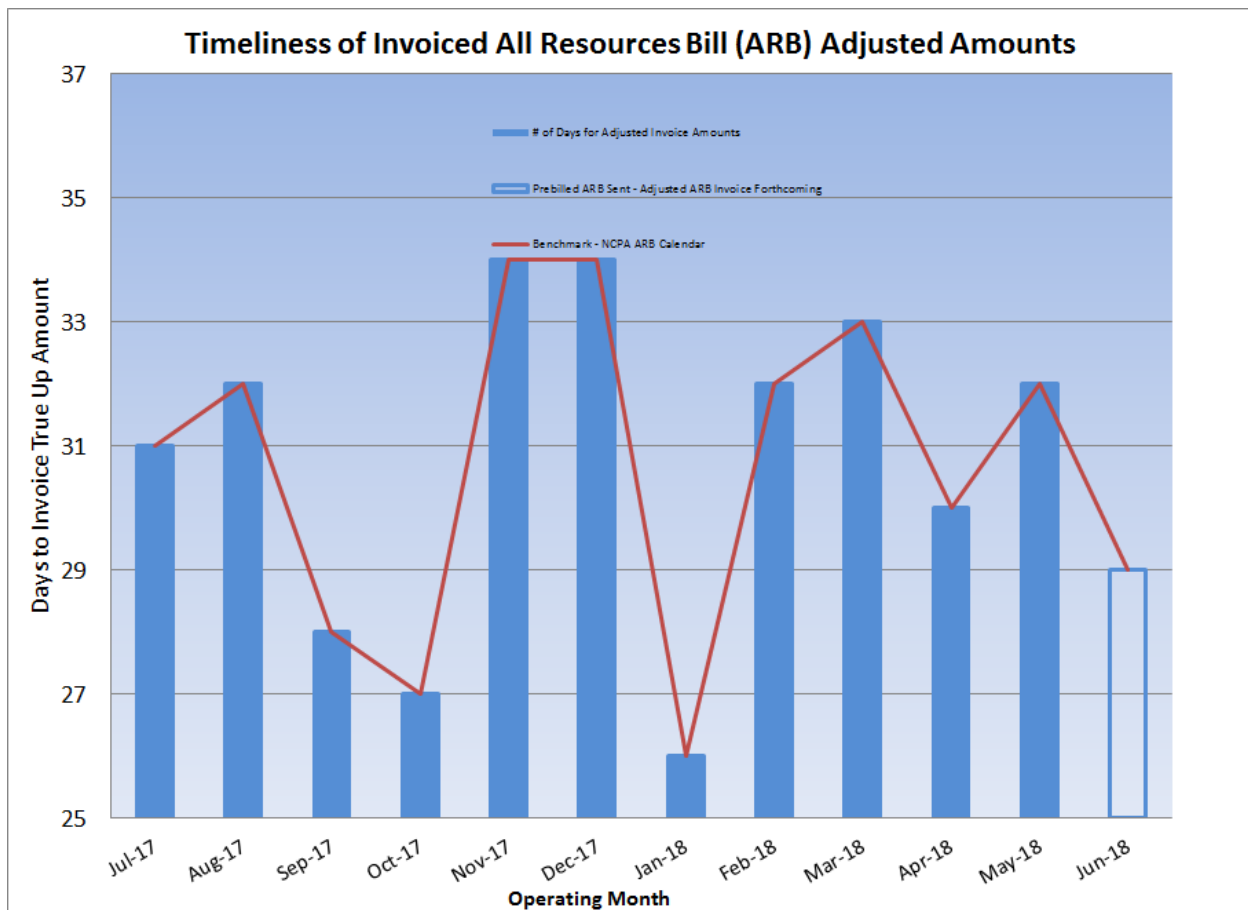
## **NCPA Bills & Settlements**

### **Progress Against the Strategic Plan**

*Adjusted Power bills, which include CAISO transactions, invoiced to members the following month subsequent to the monthly pre-billed ARB month. Timely ARB settlements adjustments help improve members' cash flow and reconciliation of their budget performance.*

The July 2018 NCPA All Resources Bill (ARB) monthly invoice sent to members on June 25, 2018 contains:

- July 2018 monthly pre-billed budget/forecast amounts;
- May 2018 (1st Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- April 2018 (2nd Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
- February 2018 (3rd Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
- August 2017 (4th Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
- October 2016 (5th Adjustment) T+18 month recalculated CAISO settlement true-up allocations;
- July 2015 (6th Adjustment) T+33 month recalculated CAISO settlement true-up;
- April 2015 (7th 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 AB 813 and regionalization of the western electricity grid, SB 100 which establishes a 100% clean energy goal by 2045, and numerous pieces of legislation addressing wildfire issues. NCPA is coordinating with its members and other public power groups to negotiate amendments to SB 100 that provide more flexibility and protections for public power.
- NCPA and a delegation of its members joined more than 1,200 representatives from the public power community to participate in the American Public Power Association (APPA) National Conference held in New Orleans. The spirit of public power and public power's connection to the local community was a dominant theme of the conference. Along those lines, three members of the NCPA family were recognized for their commitment to the public power mission. APPA awarded Santa Clara City Councilmember Pat Kolstad the Spence Vanderlinden Public Official Award which recognizes elected or appointed members of a utility governing board who has

actively participated and made substantial contributions towards APPA goals on behalf of their communities. Tikan Singh, Electric Utility Manager from the city of Lompoc, was recognized for his completion of APPA's Public Power Manager Certificate Program, an educational program designed for new leaders and existing supervisors to equip them to lead their organizations in a constantly evolving and complex industry. And, NCPA's Jane Cirrincione was also honored with the Harold Kramer-John Preston Personal Service Award for service to APPA. Ms. Cirrincione was recognized for more than 20 years of advocacy in the public power arena, helping to shape APPA's agenda in Washington, in addition to organizations NCPA works with, including the National Hydropower Association and the Transmission Access Policy Study Group.

- NCPA participated in the Bureau of Reclamation's most recent "Croffsets" meeting to follow-up on a request made previously by NCPA and other preference power customers to review their historical accounting records to ensure CVPIA costs were not inadvertently booked into CVP accounts and used to determine CVP repayment obligations. Reclamation reported that during their review, they discovered approximately \$9.6 million in CVPIA costs were improperly recorded into CVP power accounts, impacting CVP power customers' repayment obligations. Reclamation announced that they will now reverse those improperly charged CVP costs, which will lead to a credit for power and water users in 2018. Approximately 25% of the credit will go to water customers impacted because of project use requirements, and the remaining credit (about \$7 million) will go to CVP preference power customers. The goal is to provide this credit by October 1, 2018, which is the end of the Federal Fiscal Year. Outstanding requests for the Department of Interior's solicitor's opinion on the Croffsets proposal remain unaddressed by the agency.

## **Human Resources**

### **Hires:**

James Meyer joined NCPA July 9, 2018 as a Combustion Turbine Specialist III at our Lodi Energy Center, in Lodi, CA. James has over 29 years of plant operator experience having previously worked for Calpine King City as an I&C Technician/Operator Technician III.

### **Intern Hires:**

None.

### **Promotions/Position Changes:**

Anthony "Tony" Zimmer was promoted to Assistant General Manager II at our Roseville Headquarters in Roseville, CA effective July 8, 2018. Previously Tony was the Supervisor over Industry Restructuring and Interconnection Affairs.

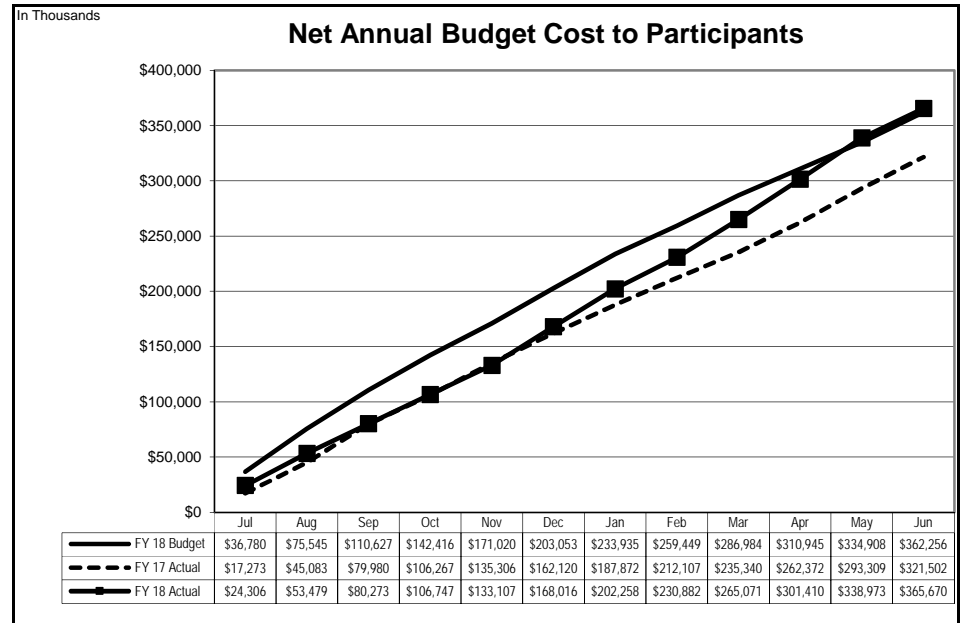
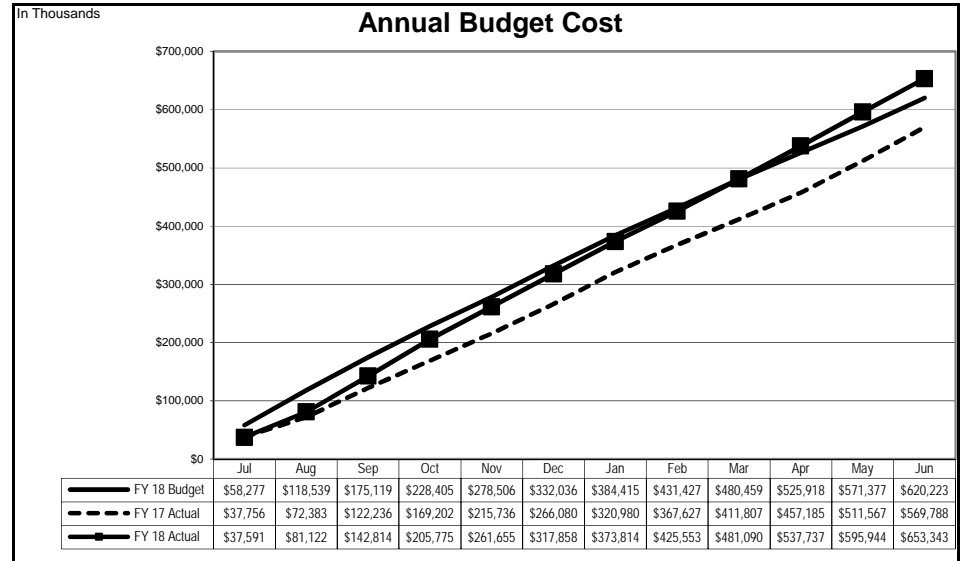


**Separations:**

Gary Herrin, Operator Technician IV, retired from his position at our Geothermal Facilities effective July 13, 2018 after over 29 years of service.

**Annual Budget  
2017-2018 Fiscal Year To Date  
As of June 30, 2018**

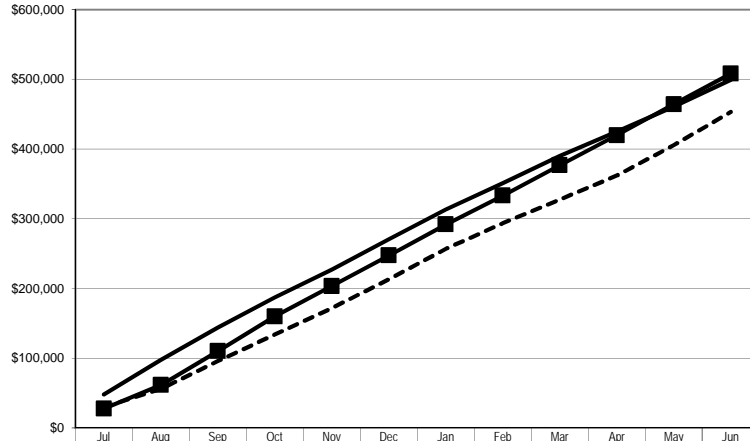
In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
<b>GENERATION RESOURCES</b>				
<b>NCPA Plants</b>				
Hydroelectric	53,862	55,546	\$ (1,684)	-3%
Geothermal Plant	32,120	30,092	2,028	6%
Combustion Turbine No. 1	3,199	5,094	(1,895)	-59%
Combustion Turbine No. 2 (STIG)	8,623	9,096	(473)	-5%
Lodi Energy Center	61,088	77,606	(16,517)	-27%
	158,892	177,434	(18,542)	-12%
<b>Member Resources - Energy</b>	53,389	55,301	(1,912)	-4%
<b>Member Resources - Natural Gas</b>	3,457	3,452	5	0%
<b>Western Resource</b>	30,120	25,319	4,801	16%
<b>Market Power Purchases</b>	19,318	36,441	(17,123)	-89%
<b>Load Aggregation Costs - ISO</b>	233,822	208,915	24,907	11%
<b>Net GHG Obligations</b>	446	1,394	(949)	-213%
	499,444	508,257	(8,813)	-2%
<b>TRANSMISSION</b>				
Independent System Operator	102,925	128,774	(25,849)	-25%
<b>MANAGEMENT SERVICES</b>				
<b>Legislative &amp; Regulatory</b>				
Legislative Representation	1,976	1,731	245	12%
Regulatory Representation	838	714	124	15%
Western Representation	830	555	274	33%
Member Services	436	385	51	12%
	4,079	3,385	694	17%
<b>Judicial Action</b>	625	827	(202)	-32%
<b>Power Management</b>				
System Control & Load Dispatch	5,864	5,681	184	3%
Forecasting & Prescheduling	2,647	2,445	202	8%
Industry Restructuring	424	309	115	27%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,152	869	283	25%
Green Power Project	18	2	15	87%
Gas Purchase Program	88	64	24	28%
Market Purchase Project	130	95	35	27%
	10,323	9,465	859	8%
<b>Energy Risk Management</b>	207	176	31	15%
<b>Settlements</b>	774	584	190	25%
<b>Integrated System Support</b>	319	170	148	47%
<b>Participant Pass Through Costs</b>	1,526	1,220	306	20%
<b>Support Services</b>	-	485	(485)	
	17,854	16,311	1,542	9%
<b>TOTAL ANNUAL BUDGET COST</b>	620,222	653,343	(33,120)	-5%
<b>LESS: THIRD PARTY REVENUE</b>				
Plant ISO Energy Sales	70,367	105,381	(35,014)	-50%
Load Aggregation Energy Sales	151,019	119,643	31,376	21%
Ancillary Services Sales	2,731	5,898	(3,167)	-116%
Western Resource Energy Sales	18,026	23,434	(5,408)	-30%
Other ISO Revenue	-	18,455	(18,455)	N/A
Transmission Sales	110	110	-	0%
Western Credits, Interest & Other Income	15,713	14,751	962	6%
	257,967	287,673	(29,706)	-12%
<b>NET ANNUAL BUDGET COST TO PARTICIPANTS</b>	362,256	365,670	\$ (3,414)	-1%



## Annual Budget Budget vs. Actual By Major Area As of June 30, 2018

In Thousands

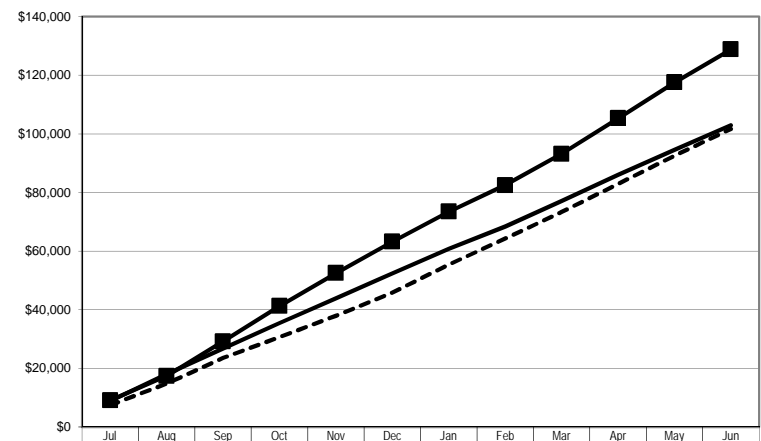
### Generation Resources



FY 18 Budget	\$47,926	\$97,565	\$143,922	\$186,992	\$227,232	\$270,776	\$313,209	\$351,060	\$390,004	\$425,008	\$460,558	\$499,444
FY 17 Actual	\$29,756	\$55,812	\$95,687	\$133,929	\$171,830	\$213,133	\$257,030	\$293,598	\$327,588	\$362,137	\$405,437	\$453,193
FY 18 Actual	\$27,457	\$61,486	\$110,071	\$159,932	\$203,497	\$247,442	\$291,750	\$333,238	\$376,666	\$419,645	\$464,289	\$508,257

In Thousands

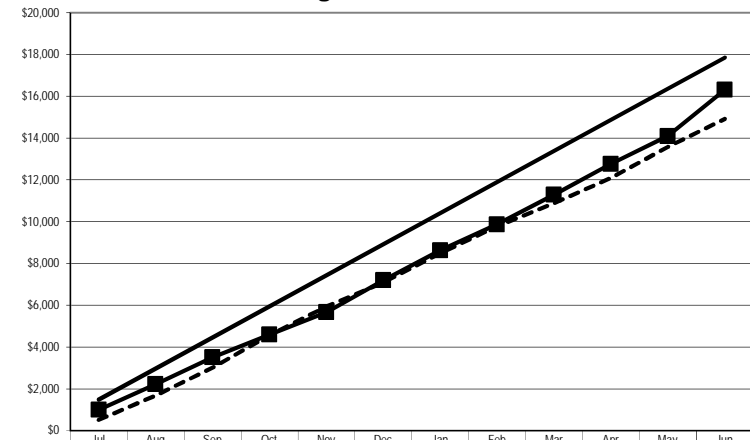
### Transmission-ISO



FY 18 Budget	\$8,863	\$17,999	\$26,733	\$35,462	\$43,835	\$52,333	\$60,791	\$68,465	\$77,065	\$86,031	\$94,453	\$102,925
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	\$101,676
FY 18 Actual	\$9,126	\$17,413	\$29,207	\$41,243	\$52,490	\$63,218	\$73,436	\$82,442	\$93,137	\$105,326	\$117,555	\$128,774

In Thousands

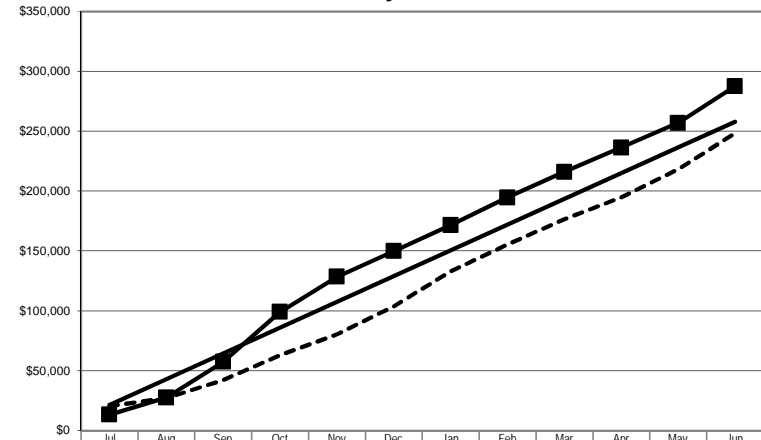
### Management Services



FY 18 Budget	\$1,488	\$2,976	\$4,464	\$5,951	\$7,439	\$8,927	\$10,415	\$11,903	\$13,391	\$14,878	\$16,366	\$17,854
FY 17 Actual	\$523	\$1,688	\$3,017	\$4,584	\$5,940	\$7,086	\$8,481	\$9,784	\$10,883	\$12,097	\$13,581	\$14,919
FY 18 Actual	\$1,008	\$2,223	\$3,516	\$4,600	\$5,667	\$7,198	\$8,628	\$9,873	\$11,287	\$12,766	\$14,100	\$16,311

In Thousands

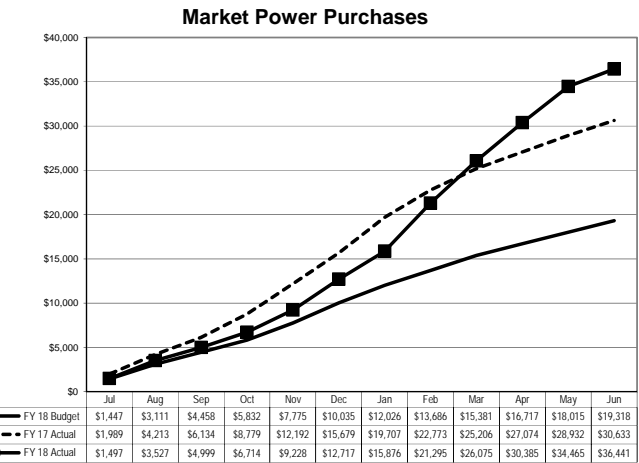
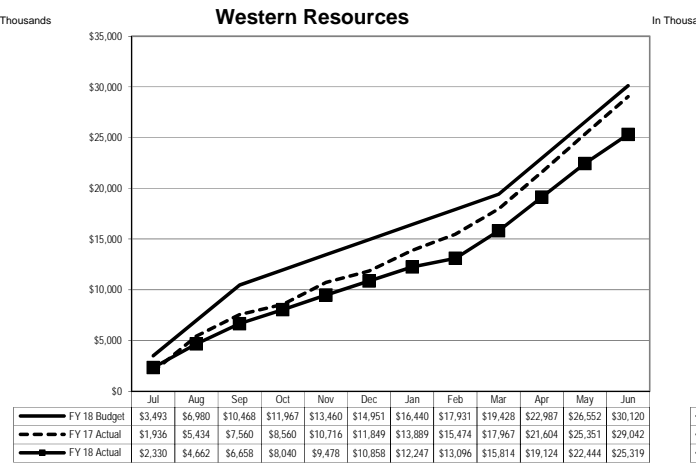
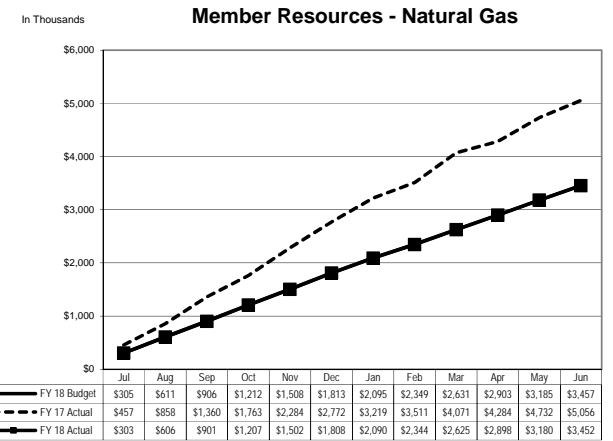
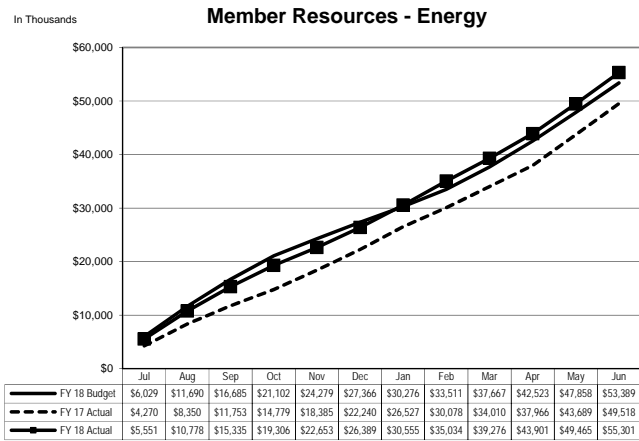
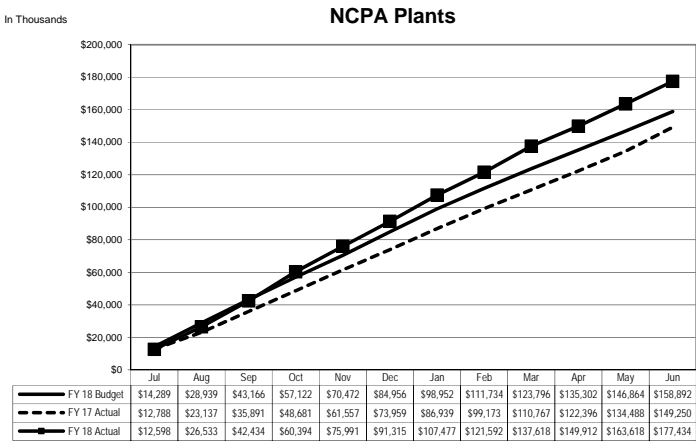
### Third Party Revenue



FY 18 Budget	\$21,497	\$42,995	\$64,492	\$85,989	\$107,486	\$128,984	\$150,481	\$171,978	\$193,475	\$214,973	\$236,470	\$257,967
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	\$248,287
FY 18 Actual	\$13,285	\$27,643	\$57,380	\$99,028	\$128,548	\$149,842	\$171,556	\$194,671	\$216,019	\$236,327	\$256,971	\$287,673

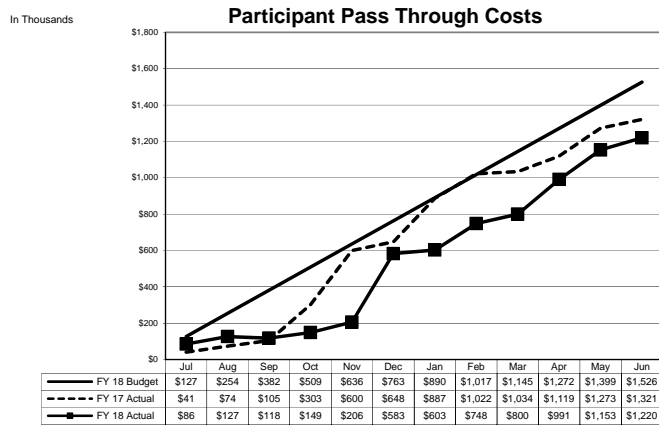
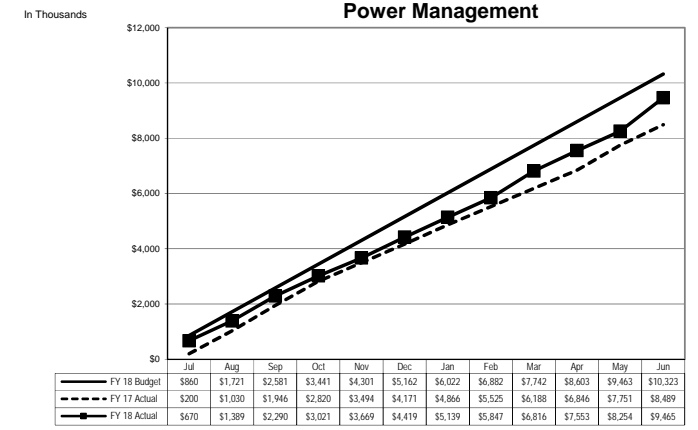
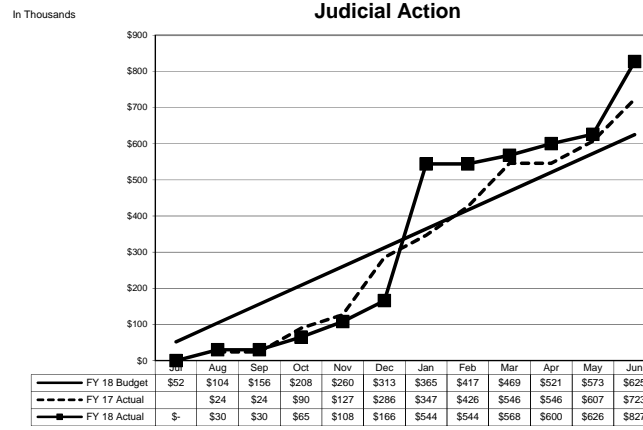
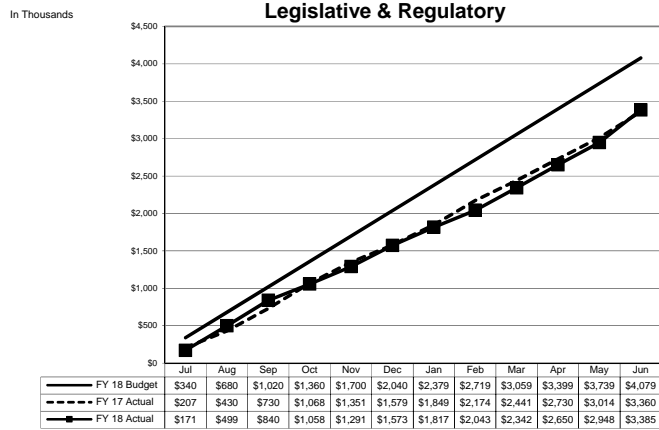
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

## Annual Budget Cost Generation Resources Analysis By Source As of June 30, 2018



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

## Annual Budget Cost Management Services Analysis By Source As of June 30, 2018

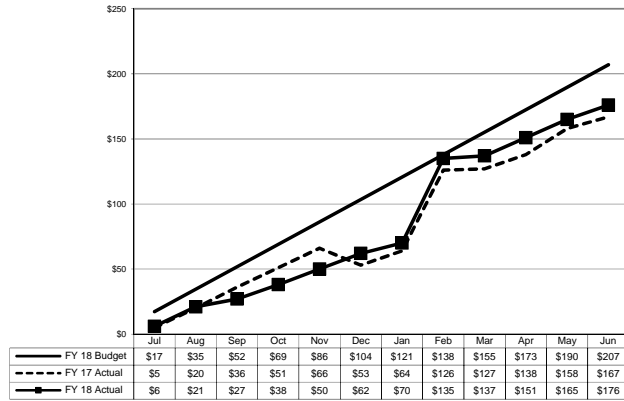


**Annual Budget Cost  
Management Services Analysis By Source  
As of June 30, 2018**

In Thousands

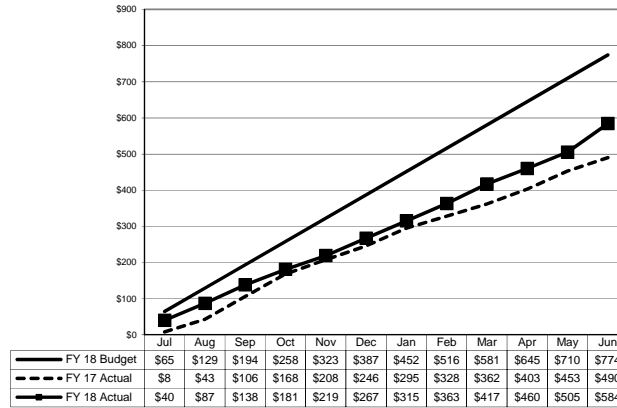
**Energy Risk Management**

In Thousands

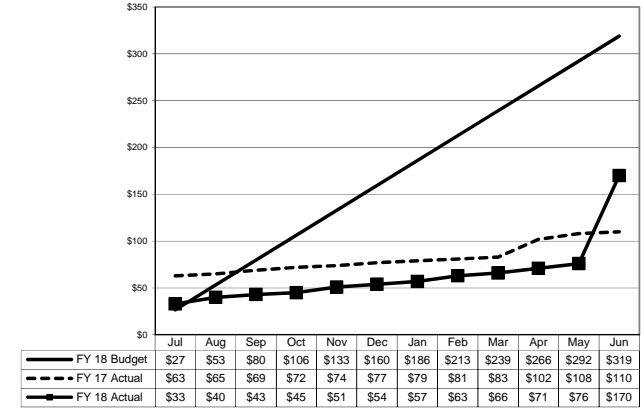


**Settlements**

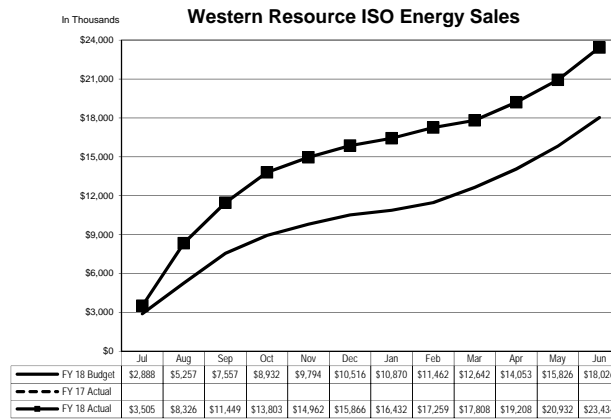
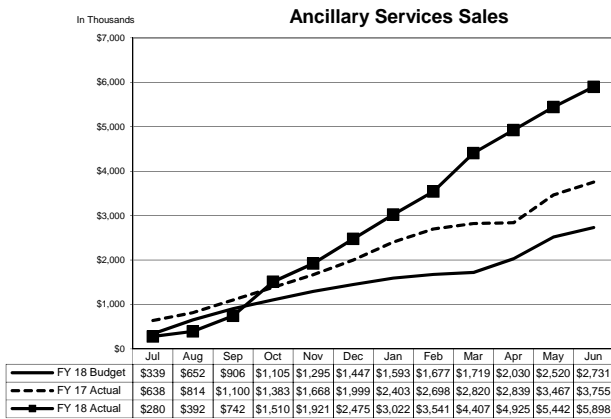
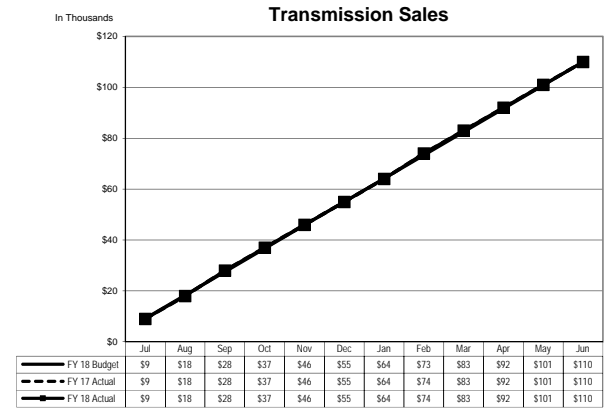
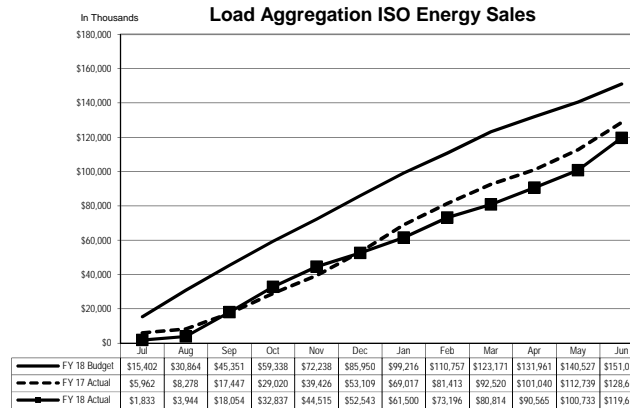
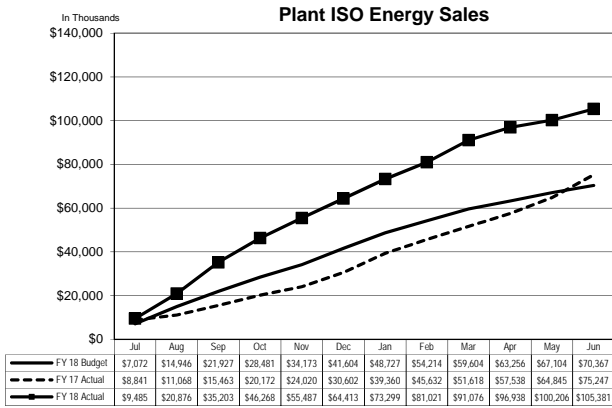
In Thousands



**Integrated Systems Support**



**Annual Budget Cost  
Third Party Revenue Analysis By Source  
As of June 30, 2018**



**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of June 30, 2018**

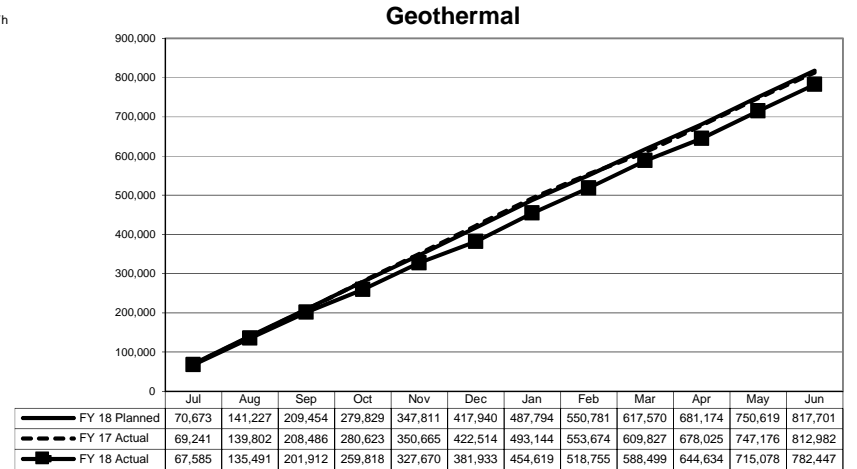
**Generation Cost Analysis**

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 17,564	\$ 16,705	\$ 21.35	\$ 859	5%
Capital Assets/Spare Parts Inventories	1,440	429	0.55	1,011	70%
Other Costs	7,863	7,321	9.36	541	7%
CA ISO Charges	317	701	0.90	(384)	-121%
Debt Service	4,936	4,936	6.31	-	0%
Annual Budget	32,120	30,092	38.46	2,028	6%
Less: Third Party Revenue					
Interest Income	148	261	0.33	(114)	-77%
ISO Energy Sales	28,349	26,592	33.99	1,757	6%
Ancillary Services Sales	-	(4)	(0.01)	4	
Effluent Revenues	700	1,522	1.95	(822)	-117%
Misc	110	134	0.17	(23)	-21%
	29,307	28,505	36.43	802	3%
Net Annual Budget Cost to Participants	\$ 2,813	\$ 1,587	\$ 2.03	\$ 1,226	44%
Net Generation--MWh @ Meter	817,701	782,447			
\$/MWh (A)	\$ (2.60)	\$ (4.28)			

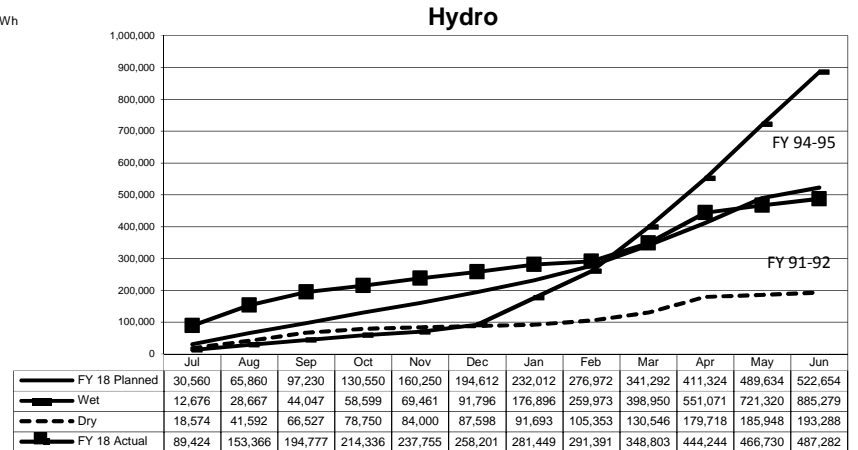
**MWhs Generated**

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 8,465	\$ 7,936	\$ 16.29	\$ 529	6%
Capital Assets/Spare Parts Inventories	2,365	5,197	10.66	(2,832)	-120%
Other Costs	3,093	2,818	5.78	276	9%
CA ISO Charges	1,680	2,809	5.76	(1,129)	-67%
Debt Service	38,258	36,786	75.49	1,472	4%
Annual Budget	53,862	55,546	113.99	(1,684)	-3%
Less: Third Party Revenue					
Interest Income	244	487	1.00	(243)	-99%
ISO Energy Sales	22,050	25,497	52.32	(3,447)	-16%
Ancillary Services Sales	2,222	2,948	6.05	(726)	-33%
Misc	-	3,564	7.31	(3,564)	
	24,516	32,497	66.69	(7,980)	-33%
Net Annual Budget Cost to Participants	\$ 29,346	\$ 23,049	\$ 47.30	\$ 6,297	
Net Generation--MWh @ Meter	522,654	487,282			
\$/MWh (A)	\$ (17.05)	\$ (28.19)			

In MWh



Footnotes:

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

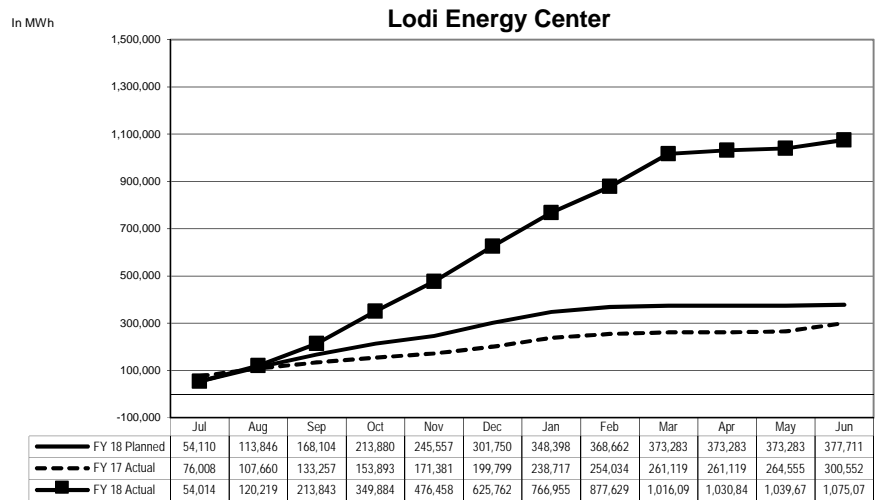


**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of June 30, 2018**

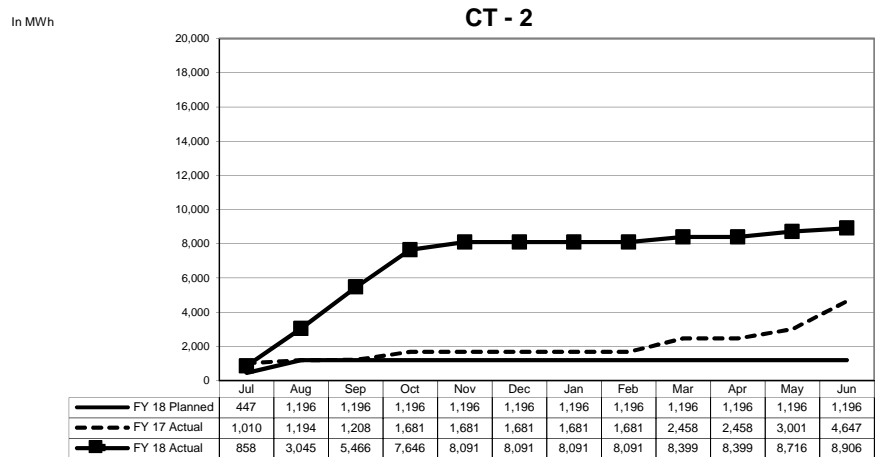
**Generation Cost Analysis**

	Lodi Energy Center				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 10,174	\$ 14,003	\$ 13.02	\$ (3,828)	-38%
Fuel	14,877	26,982	25.10	(12,105)	-81%
AB 32 GHG Offset	-	-	-	-	0%
CA ISO Charges and Energy Purchases	3,921	5,601	5.21	(1,680)	-43%
Capital Assets/Spare Parts Inventories	2,636	2,192	2.04	445	17%
Other Costs	3,063	2,630	2.45	433	14%
Debt Service	26,417	26,198	24.37	218	1%
Annual Budget	61,088	77,606	72.19	(16,517)	-27%
Less: Third Party Revenue					
Interest Income	172	405	0.38	(234)	-136%
ISO Energy Sales	19,760	49,576	46.11	(29,816)	-151%
Ancillary Services Sales	397	1,879	1.75	(1,482)	-373%
Transfer Gas Credit	-	-	-	-	0%
Misc	-	75	0.07	(75)	0%
	20,329	51,935	48.31	(31,606)	-155%
Net Annual Budget Cost to Participants	\$ 40,759	\$ 25,671	\$ 23.88	\$ 15,089	37%
Net Generation--MWh @ Meter	377,711	1,075,077			
\$/MWh (A)	\$ 37.97	\$ (0.49)			

**MWhs Generated**



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,471	\$ 1,521	\$ 170.75	\$ (50)	-3%
Fuel and Pipeline Transport Charges	835	1,083	121.63	(249)	-30%
Capital Assets/Spare Parts Inventories	121	11	1.21	111	91%
Other Costs	502	444	49.85	58	12%
CA ISO Charges	0	344	38.68	(344)	-74299%
Debt Service	5,693	5,693	639.20	-	0%
Annual Budget	8,623	9,096	1,021.31	(473)	-5%
Less: Third Party Revenue					
Interest Income	43	86	9.68	(43)	-101%
ISO Energy Sales	89	1,192	133.89	(1,104)	-1242%
Ancillary Service Sales	-	0	0.00	(0)	0%
Fuel and Pipeline Transport Credits	864	1,425	159.97	(560)	-65%
Misc	-	-	-	-	0%
	996	2,703	303.54	(1,707)	-171%
Net Annual Budget Cost to Participants	\$ 7,627	\$ 6,393	\$ 717.77	\$ 1,234	16%
Net Generation--MWh @ Meter	1,196	8,906			
\$/MWh (A)	\$ 1,616.78	\$ 78.56			



**Footnotes:**

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

**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of June 30, 2018**

**Generation Cost Analysis**

	Combustion Turbine No. 1				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,520	\$ 2,276	\$ 150.23	\$ (756)	-50%
Fuel and Pipeline Transport Charges	172	965	63.73	(793)	-460%
Capital Assets/Spare Parts Inventories	992	970	64.02	22	2%
Other Costs	514	499	32.95	15	3%
CA ISO Charges	1	384	25.33	(383)	-65264%
Debt Service	-	-	-	-	-
Annual Budget	3,199	5,094	336.25	(1,895)	-59%
Less: Third Party Revenue					
Interest Income	-	-	-	-	-
ISO Energy Sales	119	2,523	166.58	(2,404)	-2021%
Ancillary Services Sales	-	0	0.00	(0)	0%
Misc	-	16	1.03	(16)	0%
	119	2,539	167.61	(2,420)	-2034%
Net Annual Budget Cost to Participants	\$ 3,080	\$ 2,555	\$ 168.64	\$ 525	17%
Net Generation--MWh @ Meter	1,514	15,149			
\$/MWh (A)	\$ 2,034.06	\$ 168.64			

**Footnotes:**

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

**MWhs Generated**

In MWh

**CT - 1**

