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# BUSINESS PROGRESS REPORT

## August 2018



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# Generation Costs & Reliability

## Combustion Turbine Project

### Unit Operation for July 2018

Unit	Availability		Production		Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	0.0 MWh	Out of Service / CAISO
	0.0%	98.6%	Unit 2	1,880.6	
Curtailments, Outages, and Comments:					
Alameda CT U1 Compressor Failure ETR 08/31 OMS 6125777 / 01-Jul-18 0:00 8:06 Transmission outage 10-Jul-18 19:00 21:00 High EGT spread					
Unit	Availability		Production		Reason for Run
CT1 Lodi	59.5%		763.7 MWh		CAISO
Curtailments, Outages, and Comments:					
06-Jul-18 20:10 23:59 Starting Means issue 07-Jul-11Jul 0:00 23:59 Starting Means issue 12-Jul-18 0:00 12:00 Starting Means issue 12-Jul-18 20:30 23:59 to 14-Jul-18 0:00 23:59 Starting Means issue 19-Jul-18 16:45 23:59 to 20Jul-22Jul 0:00 23:59 High EGT spread 23-Jul-18 0:00 15:15 High EGT spread 25-Jul-18 13:00 23:59 Failed start/emissions limitation 27-Jul-18 19:00 23:59 Failed start/emissions limitation 29-Jul-18 18:00 19:00 Gas compressor trouble 30-Jul-18 10:41 13:27 Gas compressor trouble					
Unit	Availability		Production		Reason for Run
CT2 STIG	99.6%		4,544.2 MWh		CAISO
Curtailments, Outages, and Comments:					
18-Jul-18 16:00 19:05 Failed start					
Unit	Availability		Production		Reason for Run
LEC	100.0%		172,943 MWh		CAISO
Curtailments, Outages, and Comments:					
No Comment.					

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

## Geothermal Facilities

### Availability/Production for July 2018

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
<b>Unit 1</b>	98.79 %	19,705 MWh	U1 was off line 7/13/18 from 0635 until 1535 due to lightning strike on 230 kv line
<b>Unit 2</b>	98.79 %	*18,409 MWh	U2 was off line 7/13/18 from 0635 until 1535 due to lightning strike on 230 kv line
<b>Unit 3</b>	N/A %	N/A	Unit 3 remains out of service.
<b>Unit 4</b>	100 %	30,130 MWh	U4 had no outages for the month
<b>Southeast Geysers Effluent Pipeline</b>	89.2 %	172.7 mgallons	Average flow rate: 3,899 gpm
<b>Southeast Solar Plant</b>	N/A	94,496 KWh	Year-to-date KWh: 1,367,743
<b>Bear Canyon Pump Station Zero Solar</b>	N/A	134,176 KWh	Year-to-date KWh: 2,706,367

\* Accounts for an additional 1,586 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

## Hydroelectric Project

### Availability/Production for July 2018

Units	Availability	Net Electricity Generated	Out-of-Service
<b>Collierville Unit 1</b>	100.00 %	18583 MWh	CV #1 unit no reportable outages.
<b>Collierville Unit 2</b>	100.00 %	22410 MWh	CV #2 unit no reportable outages.
<b>Spicer Unit 1</b>	100.00 %	1649 MWh	NSM #1 unit no reportable outages.
<b>Spicer Unit 2</b>	100.00 %	1664 MWh	NSM #2 unit no reportable outages.
<b>Spicer Unit 3</b>	70.13 %	206 MWh	NSM #3 unit was out of service on, 07/16/18 at 0938 through 07/25/18 at 1550 due to annual maintenance.

#### Operations & Maintenance Activities:

- CMMS work orders
- Planning and Preparation for CV2 Generator rewind
- Project annual Noxious Weed inspection
- NSM Dam Instrumentation Report
- L&R Project Tour
- NCPA Commission Tour
- FERC Owners Dam Safety Program Audit
- NSM unit 3 annual maintenance

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

- No lost time accidents or vehicle accidents occurred in July. Two recordable incidents occurred at Geo. The first incident occurred in May 2018, but was not noted at that time, and was a recordable injury for a standard threshold shift hearing loss. The Safety Report below has been updated to reflect this recordable. The second recordable incident occurred on July 24, 2018, in which an employee from headquarters was on site and fractured their leg while exiting a vehicle. Since this recordable incident occurred after the end of the payroll period included below, this recordable will not be calculated until the August 2018 EH&S Report.
- 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 July 21, 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.

### July 2018 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	1,312	56	1,202	6,270
Work Hours Since Last Recordable	114,216	10,955	176,910	2,264,255
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	3,928	1,065	9,106	5,199
Work Hours without LTA	359,781	216,351	618,274	1,886,273
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 July 21, 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>July 2018</b>		<b>Calendar Year 2018</b>	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	419.2 7/25 @1700	217,836	419.2 7/25 @1700	1,332,681
SVP	524.94 7/10 @1500	326,638	524.94 7/10 @1500	2,138,338
MSSA	935.28 7/10 @ 1600	544,474	935.28 7/10 @ 1600	3,471,019

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

	<b>July 2017</b>		<b>Calendar Year 2017</b>	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	439.29 7/179 @1700	221,239	485.85 9/1 @1700	1,379,322
SVP	537.3 67/1722 @1500	329,644	586.59 9/1 @1600	2,134,876
MSSA	968.08 7/1722 @ 1700	550,883	1070.79 9/1 @ 1700	3,514,198

\* 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	419.2 7/25 @ 1700
SVP	586.59 MW on 9/1/17 @ 1600	524.94 7/10 @ 1500
MSSA	1070.79 MW on 9/1/17 @ 1700	935.28 7/10 @ 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>July 2018</b>	<b>Calendar Year 2018</b>
MSSA % Within the Band	98.25%	97.64%

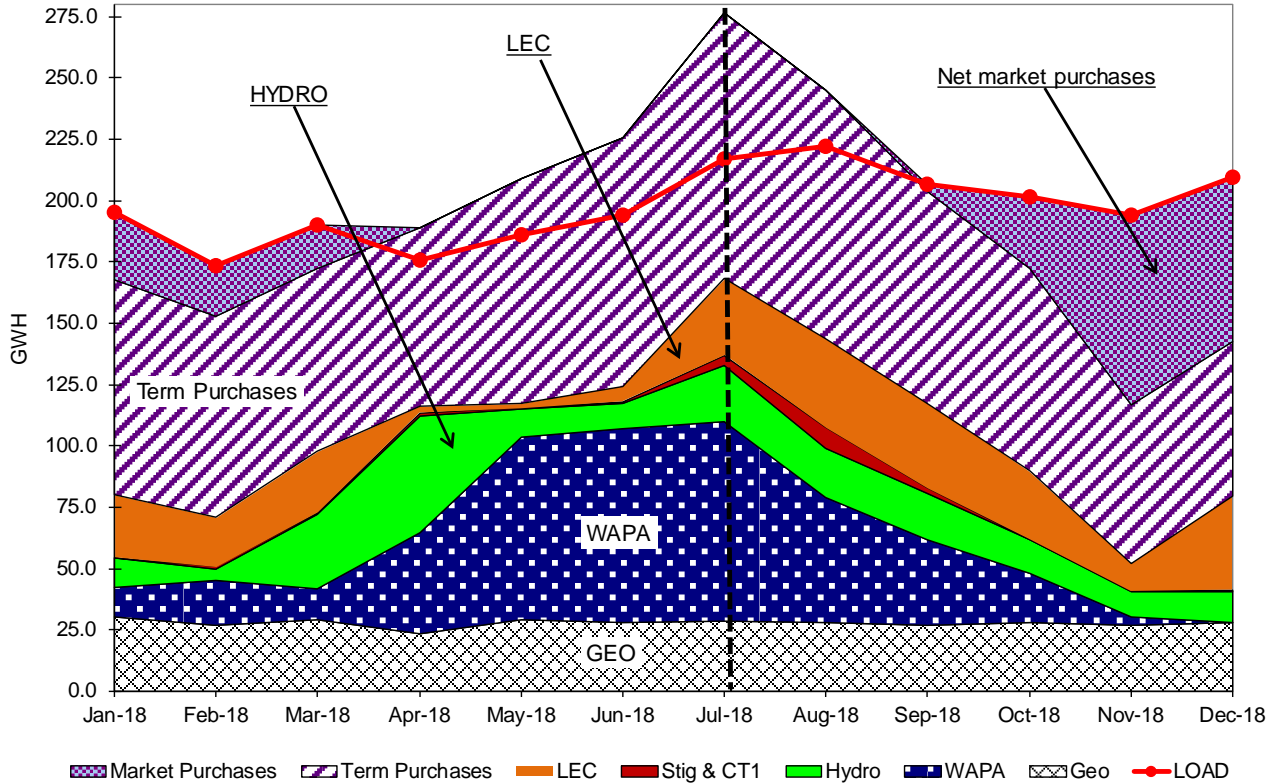
- Spicer Meadows:
  - July 16 – 25, Unit 3 o/s for annual maintenance
- Geothermal Units:
  - July 13 @ 0634 – 1538, Unit 1 & 2 off line due to PG&E Geysers 9 – Lakeville 230kV line outage
- Lodi Energy Center:
  - No curtailments
- Alameda CTs:
  - June 30 @ 2300 – July 1 @ 0806, Unit 1 and 2 unavailable due to PG&E transmission outage
  - July 1 - 31, Unit 1 remains o/s due to compressor blade failure
  - July 10 @ 1900 – 2100, Unit 2 trip on high EGT spread
- Lodi CT:
  - July 6 @ 2010 – July 12 @ 1200, unit o/s due to ratchet trouble
  - July 12 @ 2030 – July 14 @ 2359, unit o/s due to ratchet trouble
  - July 19 @ 1645 – July 23 @ 1515, unit o/s due to high EGT spread
  - July 25 @ 1300 – 2359, unit o/s due to failed start/daily emissions limitation
  - July 27 @ 1900 – 2359, unit o/s due to failed start/daily emissions limitation
  - July 29 @ 1800 – 1900, unit o/s gas compressor trouble
  - July 30 @ 1041 – 1327, unit o/s gas compressor trouble
- Collierville Units:
  - No curtailments
- STIG:
  - July 18 @ 1600 – 1905, unit o/s due to failed start



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

- Actual NCPA Pool load of 217,951 MWh during July 2018 was 98.5% of the pre-month forecast of 221,327 MWh. In July 2017 pool load reached 221,240 MWh, well over forecast. Through August 12, pool load was 83,501 MWh and may not reach the load forecast of 222,297 MWh, even if the current hot spell continues.
- The Lodi Energy Center (LEC) generated 31,100 MWh for the pool in July 2018, or 111% of the 28,044-MWh forecast. Ongoing supply disruptions in SoCal in addition to high temperatures all across the West have kept LEC running steadily. Generation through August 12 was 13,874 MWh, which puts the very high pre-month forecast of 36,316 MWh in sight if weekend temperatures remain above normal statewide.
- For the month of July 2018, 0.00" of rain was recorded at the Big Trees gage. July Big Trees average precipitation is 0.13".
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) has been increased from \$50/MWh to \$60/MWh.
- NSMR storage as of July 31, 2018 was at 134,057 acre feet. The historical average NSMR storage at the end of July is 135,166 acre feet. As of August 14, 2018 NSMR storage is 119,702 acre feet. The current NCPA Pool share of NSMR storage is 61,210 acre feet.
- Combined Calaveras Project generation for the Pool in July 2018 totaled 22.7 GWh, up from 10.5 GWh in June 2018. The Pool's 22.7 GWh in July 2018 was near the pre-month forecast of 21.3 GWh. Through August 14, 2018 Calaveras generation for the Pool is 13.4 GWh.
- Western Base Resource (BR) Pool delivery in July 2018 was 81,285 MWh, or 99.2% of Western's 82-GWh forecast despite the halt of base resource deliveries for the final four days of July. Through August 12, BR pool allocations of 20.6 GWh (including 4.0 GWh Displacement) have reached 40% of our revised Western forecast for August of 50,700/MWh. Western planned to deliver the full base resource beginning Tuesday, August 14.
- The PG&E Citygate gas index traded at \$3.40/MMBtu for August 13, 2018 delivery, and has traded above \$3 since July 21. Compare to an average of \$3.002/MMBtu (with a high of \$3.14/MMBtu) in July. The August 2018 PG&E Bidweek price is \$3.08, up 10 cents from July's Bidweek price but well below the SoCal Citygate August Bidweek price of \$9.50/MMBtu.
- Day-ahead NP15 electricity prices averaged \$74.34/MWh (HLH) during July (more than double the June average) and \$38.30 (LLH), with the hourly TH\_NP15 maximum at \$946.36/MWh and the minimum \$11.13. So far in August, on-peak prices have averaged \$78.01, with highs reaching over \$132.00/MWh.

**NCPA POOL RESOURCES**  
**2018 CALENDAR YEAR: Jan. - July Actual / balance forecasted**



NCPA Pool Loads & Resources Value Summary									
	Peak and Energy Summary Jul-18				Estimated Production Costs		Cost of Serving Demand		
	Coincident Peak (MW)	Total MWh	Forecast Values	Avg. MW	NCPA Pool Cost/Revenue (Estimate)	Variable Cost (\$/MWh)	Totals	Avg (\$/MWh)	
Demand	419.2	217,951	221,327	292.9	N/A	N/A			
WAPA	192.0	81,285	81,911	109.3	\$ 1,516,215	\$ 18.65	\$ 13,873,758	\$ 63.70	
Geothermal	-	28,715	28,088	38.6	545,579	19.00			
Hydro	-	22,700	16,538	30.5	136,200	6.00			
Stig & CTs	-	4,246	2,918	5.7	241,182	56.80			
LEC	-	31,100	28,044	41.8	1,015,716	32.66			
Contracts	207.3	108,304	108,253	145.6	6,460,696	59.65	\$ 7,820,215	\$ 35.88	
Market - Net	19.9	(58,398)	(44,425)	(78.5)	(3,367,911)	57.67			
(Net Sales = Negative)									
<b>Net Total</b>	<b>419.2</b>	<b>217,951</b>	<b>221,327</b>	<b>292.9</b>	<b>\$ 6,547,677</b>	<b>\$ 35.88</b>			

Monthly Market Summary						
	Pool Energy (MWh)	HLH Avg MCP (\$/MWh)	Avg Variable Cost of Pool Generation (\$/MWh)	Forward Prices (EOX NP15 HLH Ask Prices)		
				NP15 7/2/2018 (\$/MWh)	8/10/2018 (\$/MWh)	
Jan-18	195,093	\$ 34.68	\$ 43.74	Aug-18	\$ 50.43	\$ 87.52
Feb-18	173,464	\$ 32.12	\$ 43.94	Sep-18	44.34	56.60
Mar-18	190,023	\$ 31.58	\$ 39.43	Oct-18	40.27	46.56
Apr-18	175,890	\$ 26.51	\$ 39.05	Q4 2018	\$ 40.58	\$ 45.05
May-18	185,890	\$ 22.58	\$ 40.72	Q1 2019	35.33	40.95
Jun-18	193,859	\$ 30.75	\$ 38.31	Q3 2019	43.01	51.93
Jul-18	217,951	\$ 63.70	\$ 35.88	CY2019	\$ 34.90	\$ 39.22
Aug-18				CY2020	37.88	38.83
Sep-18				CY2021	41.49	41.58
Oct-18				CY2022	43.40	42.84
Nov-18				CY2023	44.74	44.53
Dec-18				CY2024	45.94	45.56

**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 October 2018:
  - Monthly System Resource Adequacy Demonstration (filed August 17, 2018)
  - Monthly Supply Plan (filed August 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. Recently, the CAISO indicated that they are considering breaking the DAME initiative into two (2) separate stakeholder initiatives (the details of such have not be made available).

#### **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 intertie 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-18	82,705	81,285	(1,420)	\$1,516,218	\$ 18.65	\$ 0.06	\$ 29.58
Aug-18	69,979	-	(69,979)	\$1,516,218	\$ 21.67	\$ -	\$ 28.67
Sep-18	59,938	-	(59,938)	\$2,179,490	\$ 36.36	\$ -	\$ 28.99
Oct-18	57,292	-	(57,292)	\$1,261,031	\$ 22.01	\$ -	\$ 28.87
Nov-18	29,041	-	(29,041)	\$1,261,031	\$ 43.42	\$ -	\$ 29.34
Dec-18	16,348	-	(16,348)	\$1,261,031	\$ 77.14	\$ -	\$ 30.32
Jan-19	20,573	-	(20,573)	\$1,261,031	\$ 61.30	\$ -	\$ 30.67
Feb-19	37,431	-	(37,431)	\$1,261,031	\$ 33.69	\$ -	\$ 30.48
Mar-19	56,569	-	(56,569)	\$1,261,031	\$ 22.29	\$ -	\$ 29.12
Apr-19	61,298	-	(61,298)	\$2,456,549	\$ 40.08	\$ -	\$ 29.09
May-19	86,402	-	(86,402)	\$2,456,549	\$ 28.43	\$ -	\$ 30.10
Jun-19	83,930	-	(83,930)	\$2,456,549	\$ 29.27	\$ -	\$ 31.41

1/ As forecasted in NCPA 18/19 Budget  
2/ = (Western Cost + Restoration Fund)/BR Delivered, for Pool Participants only.  
3/ = (MEEA LMP - PG&E LAP LMP) using public market information (i.e. not settlement quality).  
4/ Based on BR Delivered (Actual) when available and BR Forecast in all other cases. Includes CAISO LMP impact.

- The Displacement Program continued to perform for Pool Members with July activity of 7,600 MWh for an estimated saving of \$42,000, or about \$5.50/MWh.
- Pool Members' total savings under MEEA pricing (market efficiency enhancement agreement) is about \$38,000 for the Pool in July.
- Pursuant to the Western Base Resource contract, NCPA is required (on behalf of the assigning members) to file a structured Integrated Resource Plan (IRP) with Western every five (5) calendar years, and is subsequently required to file an update to the IRP each year. NCPA recently filed the new five (5) year IRP and annual update with Western, and both the five (5) year IRP and annual update were accepted and approved by Western.

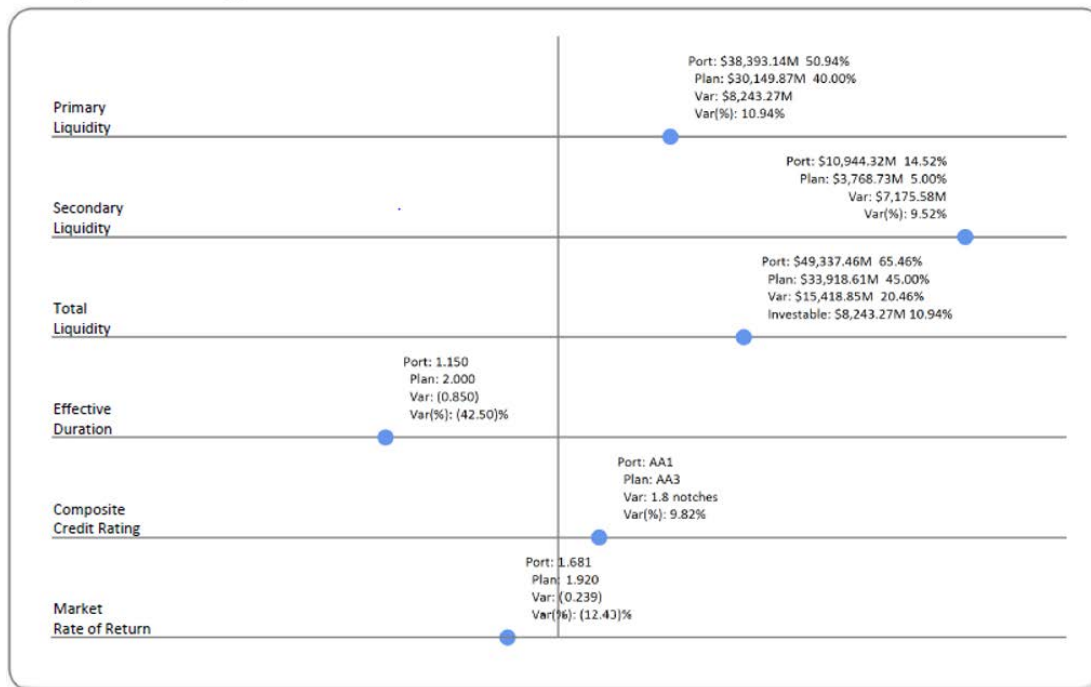
## Debt and Financial Management

- As expected, the Federal Open Market Committee (FOMC) left rates unchanged at its August 1 meeting. However, the post meeting statement confirmed a likely September rate with more hikes to follow. The Fed upgraded its assessment of the U.S. economic activity and household spending to “strong”.
- U.S. Treasury yields kicked off the third quarter by increasing across all maturities. The two-year Treasury rose the most, increasing by 14 basis points (bps) to 2.67% from 2.53% over the month. The yield curve remained near its flattest level in more than a decade.
- NCPA staff received direction from the Finance Committee to issue Request for Proposals for Underwriting Services in connection with the Hydroelectric Bonds, Series 2010A (refunding) and the Solar Project Prepayment Bonds (new issue). Staff anticipates bringing a recommended selection for each transaction to the Finance Committee in November.
- NCPA’s Treasurer/Controller, Sondra Ainsworth, presented to the Finance Committee the Agency’s investment strategy on several of the portfolios under her control. Each one of the portfolios has unique parameters (e.g. liquidity %, duration, rate of return, etc.) assigned to each one that requires a different trading approach (see example below).

	FUND				
	Operating Account	SCPA Balancing Account	Hydro Capital Dev Reserve	GOR	Geo Decom Reserve
Primary Liquidity	40%	5%	19%	25%	0%
Secondary Liquidity	5%	5%	12%	5%	0%
Total Liquidity	45%	10%	31%	30%	0%
Effective Duration	2.00	2.00	2.00	2.00	5.00
Composite Rating	AA3	AA3	AA3	AA3	AA3
Purchase Yield	1.92	1.92	1.92	1.92	2.33
Return Benchmark	2YrTsyCMT	2YrTsyCMT	2YrTsyCMT	2YrTsyCMT	5YrTsyCMT

The next step looks at the positions within each portfolio to show the results against the strategy. This allows her to quickly analyze how to make modifications to each portfolio that maximizes the value based on the given parameters. Listed below is an example of the Operating Fund.

# Operating Fund



In this example, the vertical line in the middle of the chart represents the benchmark across each parameter. The blue dots represents how far above or below the strategy is doing against each parameter. As she makes adjustments to liquidity by purchasing new securities (example shows she has more liquidity than the plan requires), the top blue dots will shift left closer to the benchmark. In addition, buying securities with maturities greater than two years will shift the duration closer to the benchmark as well. Lastly, purchasing bonds with a longer duration will generally have higher yields which will increase the market rate of return. Overall, applying this 'playbook' across the portfolios will allow NCPA to continue to safeguard the principal and maintain adequate liquidity while earning a reasonable rate of return.

## Schedule Coordination Goals

### Software Development

- NCPA IS Staff in collaboration with Accounting Staff continue to work on the remaining configuration of systems for Hometown Connections, 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 completed the configuration of the software applications in preparation for the new Community Choice Energy (CCE) customer, San Jose CCE, scheduled 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 Operations and Support group has successfully installed a new "Nimble" Storage Area Network (SAN) at both the HQ and DRC locations. This new storage solution will allow the Agency to handle data growth over the next several years. Approximately 90% of NCPA's data has been migrated from the old storage array to the new Nimble with plans to be complete by this fall.
- Interviews are being conducted for the vacant SCADA analyst position in anticipation of it being filled by September.
- IS is currently working to perform a migration from SharePoint 2013 to SharePoint 2016, which is part of the larger plan to implement records retention for documents within libraries. The migration is expected to be completed by this fall.
- In adherence to the Agency's records retention policy, new E-mail retention policies have been implemented on 95% of the Agency's mailboxes. The remaining 5% will be completed by this November.
- Progress continues to be made upgrading staff to Windows 10 with about 50% of the Agency on the new Operating System. The goal is to have all workstations moved over before the end of 2020.

## **NCPA Bills & Settlements**

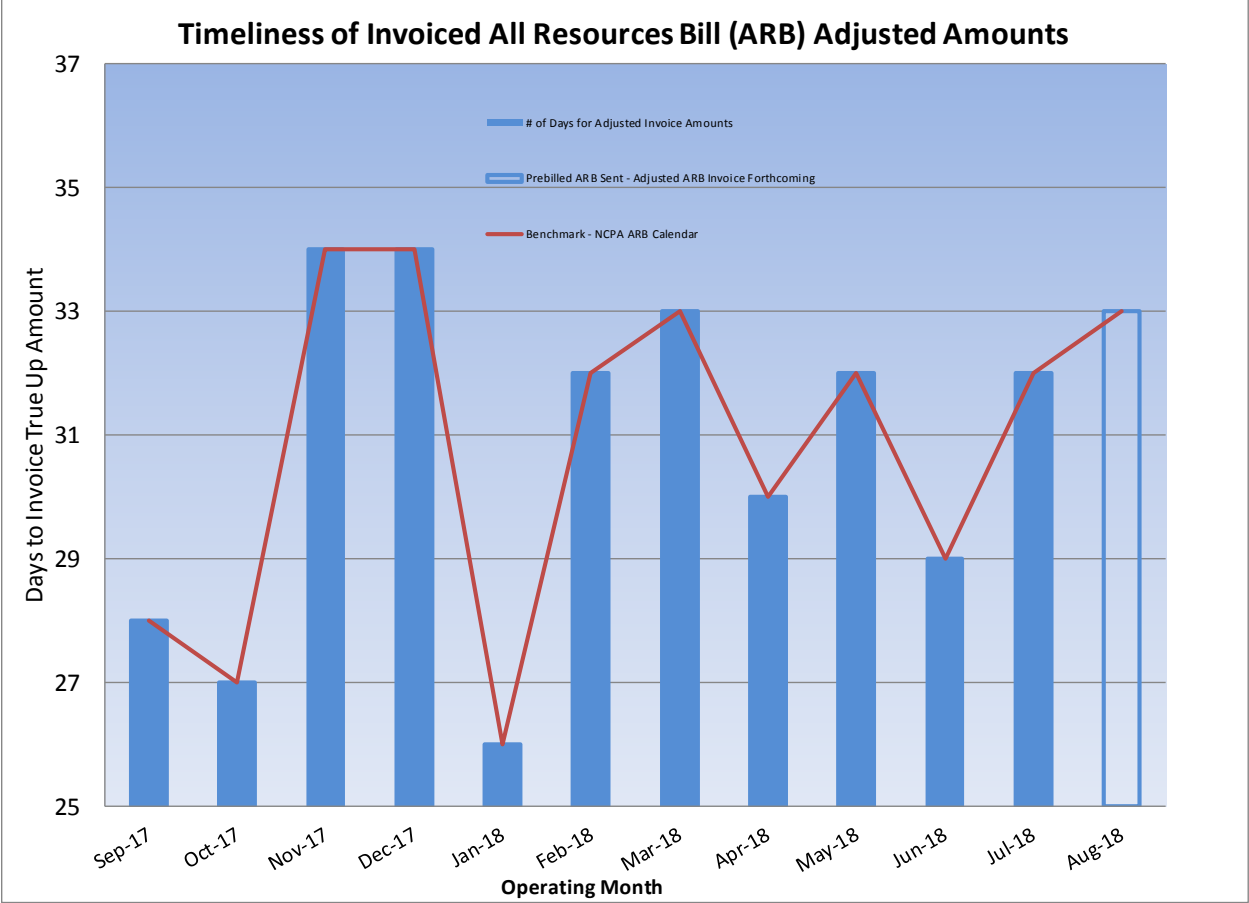
### **Progress Against the Strategic Plan**

*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 August 2018 NCPA All Resources Bill (ARB) monthly invoice sent to members on July 24, 2018 contains:

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

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



**Legislative & Regulatory**

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

- As the legislative session winds down, NCPA continues to actively advocate on a number of bills. The Legislative Conference Committee on SB 901, which is charged with crafting a comprehensive solution to address wildfires, continues to work through developing policies to improve utility wildfire mitigation planning and forest and vegetation management efforts. Contentious legislative discussions on utility liability continue, though it is not clear whether the Legislature will address this matter this session despite calls to action from the utility sector. The legislative session ends on August 31, 2018.



- NCPA hosted its annual State Legislative Staff Tour on July 23-26. The tour focused on the transitional issues related to the proposed 100% RPS, the proposed regionalization of the CAISO, transportation electrification, and state wildfire policies. Our members at the City of Lodi and the City of Roseville hosted the group this year, and the tour also included a visit to both the NCPA Lodi Energy Center as well as our hydroelectric facilities. NCPA members from Silicon Valley Power, Alameda Municipal Power, and Palo Alto Utilities presented to the group. Sincere thanks to our member systems that played such a supportive and key role in the success of the tour, to our members who participated as speakers to help educate staff on NCPA's priority issues, and to the NCPA teams at our generation facilities who delivered outstanding presentations to the group as well.

## **Human Resources**

### **Hires:**

Regina Rieger joined NCPA on August 6, 2018 as the Federal Power Resource Program Manager at our Roseville Headquarters in Roseville, CA. Regina brings almost 20 years of professional experience with the federal power program to this position, and has worked at both the Western Area Power Administration and the US Department of Interior. Regina most recently served as the Rates Manager for the Sierra Nevada Region of the Western Area Power Administration.

Christopher DuBose joined NCPA on August 6, 2018 as a Supervisor II at our Geothermal Facilities in Middletown, CA. Christopher brings over fifteen years of experience within the power industry. Christopher most recently served as the Supervisor of Nuclear Maintenance for Duke Energy, Catawba Nuclear Station. Chris has also held roles as a Nuclear Technician Specialist, Nuclear Auxiliary Operator, Lead Electrical Foreman, and an Electricians mate in the United States Navy.

### **Intern Hires:**

None.

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

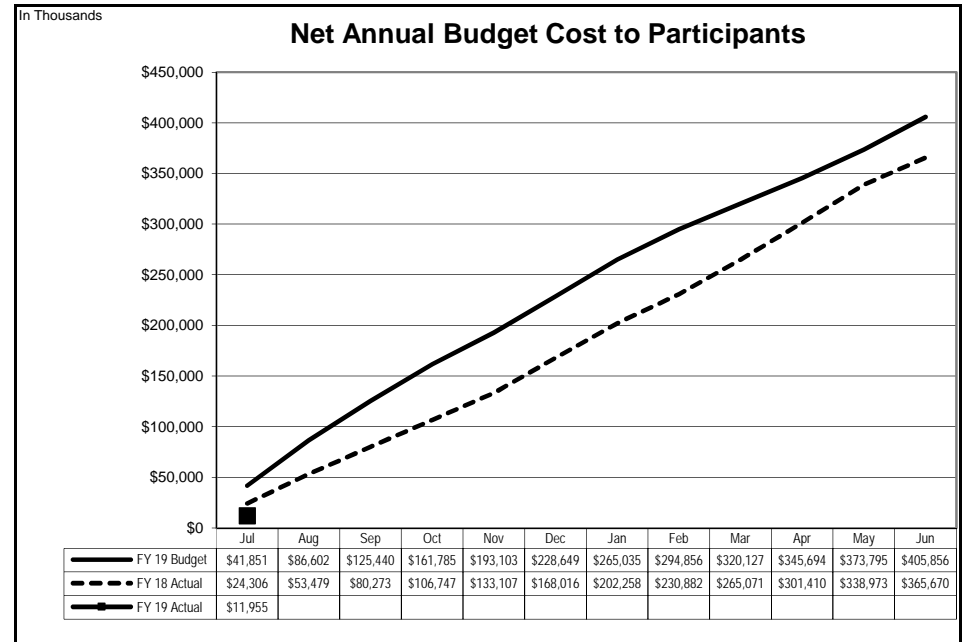
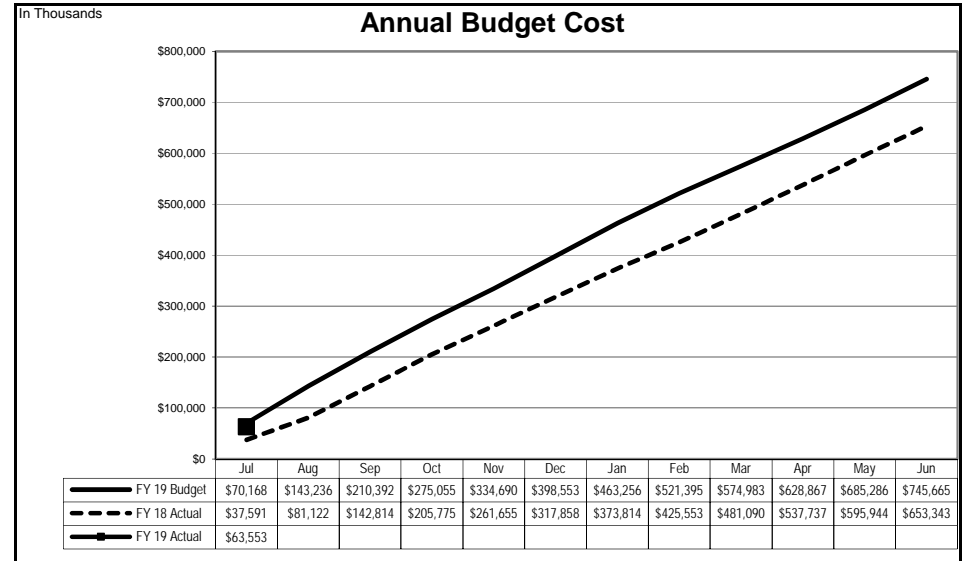
None.

### **Separations:**

None.

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

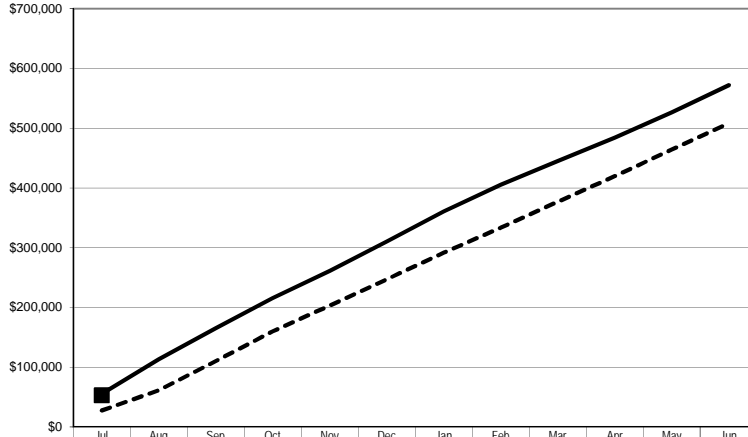
In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
<b>GENERATION RESOURCES</b>				
<b>NCPA Plants</b>				
Hydroelectric	51,857	3,824	\$ 48,033	93%
Geothermal Plant	34,425	2,568	31,858	93%
Combustion Turbine No. 1	3,806	320	3,486	92%
Combustion Turbine No. 2 (STIG)	8,743	690	8,053	92%
Lodi Energy Center	83,717	8,103	75,613	90%
	182,547	15,505	167,042	92%
<b>Member Resources - Energy</b>	64,449	6,833	57,615	89%
<b>Member Resources - Natural Gas</b>	3,098	282	2,817	91%
<b>Western Resource</b>	31,350	1,876	29,473	94%
<b>Market Power Purchases</b>	15,539	1,607	13,932	90%
<b>Load Aggregation Costs - ISO</b>	273,858	26,356	247,502	90%
<b>Net GHG Obligations</b>	1,123	-	1,123	100%
	571,964	52,459	519,505	91%
<b>TRANSMISSION</b>				
Independent System Operator	112,822	10,278	102,544	91%
<b>MANAGEMENT SERVICES</b>				
<b>Legislative &amp; Regulatory</b>				
Legislative Representation	2,023	112	1,911	94%
Regulatory Representation	887	7	879	99%
Western Representation	848	20	828	98%
Member Services	438	27	412	94%
	4,196	165	4,031	96%
<b>Judicial Action</b>	625	1	624	100%
<b>Power Management</b>				
System Control & Load Dispatch	6,107	406	5,701	93%
Forecasting & Prescheduling	2,775	174	2,601	94%
Industry Restructuring	439	24	415	95%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,135	61	1,074	95%
Green Power Project	3	0	3	99%
Gas Purchase Program	78	5	73	94%
Market Purchase Project	112	7	105	94%
	10,649	676	9,973	94%
<b>Energy Risk Management</b>	260	14	246	95%
<b>Settlements</b>	941	56	886	94%
<b>Integrated System Support</b>	273	37	236	86%
<b>Participant Pass Through Costs</b>	1,619	(136)	1,755	108%
<b>Support Services</b>	-	2	(2)	
	18,563	816	17,747	96%
<b>TOTAL ANNUAL BUDGET COST</b>	703,349	63,553	639,796	91%
<b>LESS: THIRD PARTY REVENUE</b>				
Plant ISO Energy Sales	100,456	21,050	79,406	79%
Member Resource ISO Energy Sales	28,187	5,502	22,684	80%
NCPA Contracts ISO Energy Sales	14,720	3,080	11,640	79%
Western Resource ISO Energy Sales	23,183	5,997	17,186	74%
Load Aggregation Energy Sales	131,329	12,705	118,624	90%
Ancillary Services Sales	4,409	558	3,851	87%
Transmission Sales	110	9	101	92%
Western Credits, Interest & Other Income	37,414	2,696	34,718	93%
	339,808	51,598	288,210	85%
<b>NET ANNUAL BUDGET COST TO PARTICIPANTS</b>	363,540	11,955	\$ 351,585	97%



## Annual Budget Budget vs. Actual By Major Area As of July 31, 2018

In Thousands

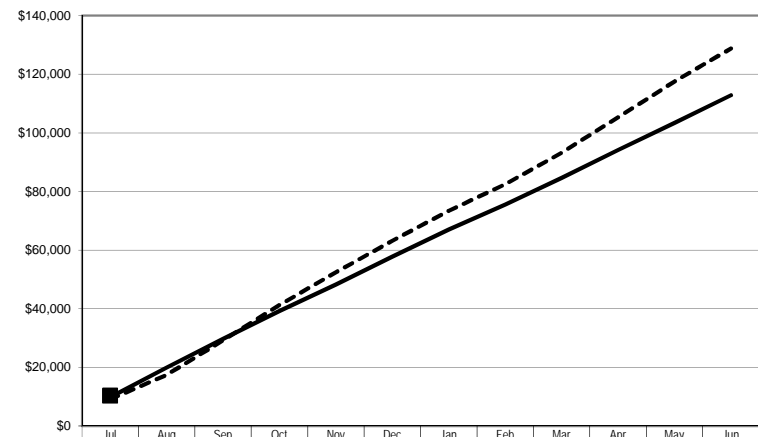
### Generation Resources



FY 19 Budget	\$55,270	\$113,084	\$165,493	\$215,617	\$261,097	\$310,374	\$360,700	\$405,308	\$444,705	\$483,951	\$526,157	\$571,964
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
FY 19 Actual	\$52,459											

In Thousands

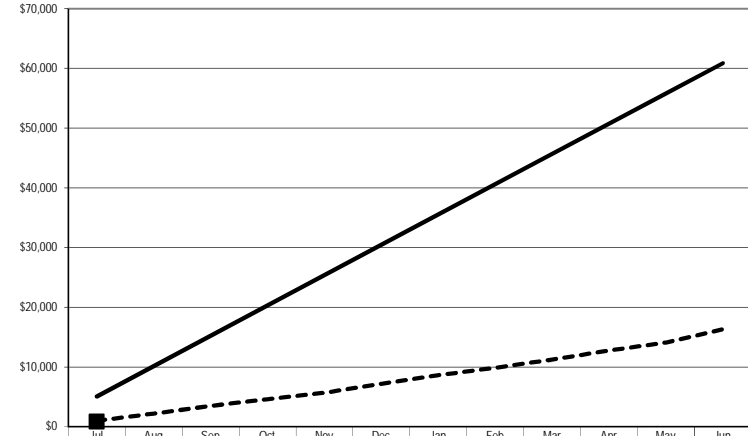
### Transmission-ISO



FY 19 Budget	\$9,825	\$20,006	\$29,679	\$39,145	\$48,226	\$57,739	\$67,044	\$75,501	\$84,619	\$94,184	\$103,323	\$112,822
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
FY 19 Actual	\$10,278											

In Thousands

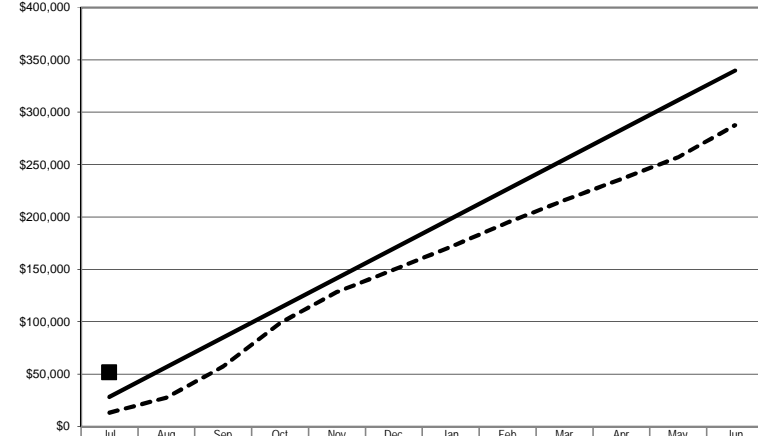
### Management Services



FY 19 Budget	\$5,073	\$10,147	\$15,220	\$20,293	\$25,366	\$30,440	\$35,513	\$40,586	\$45,659	\$50,733	\$55,806	\$60,879
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
FY 19 Actual	\$816											

In Thousands

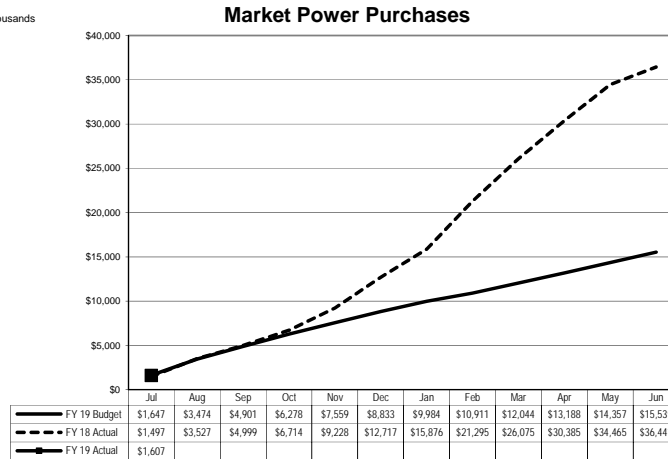
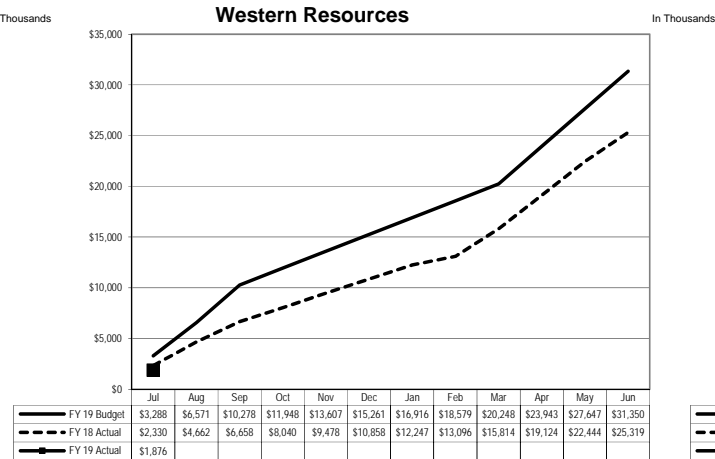
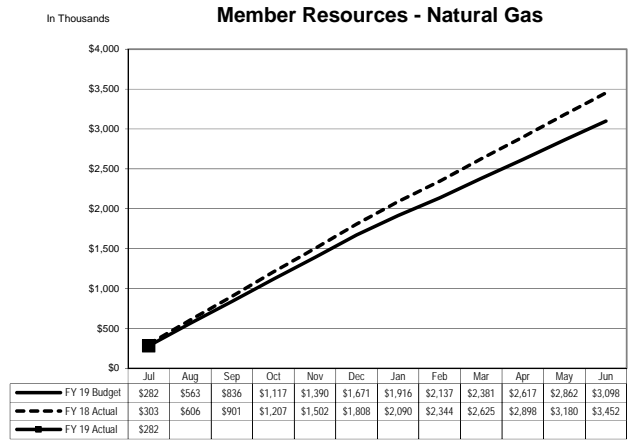
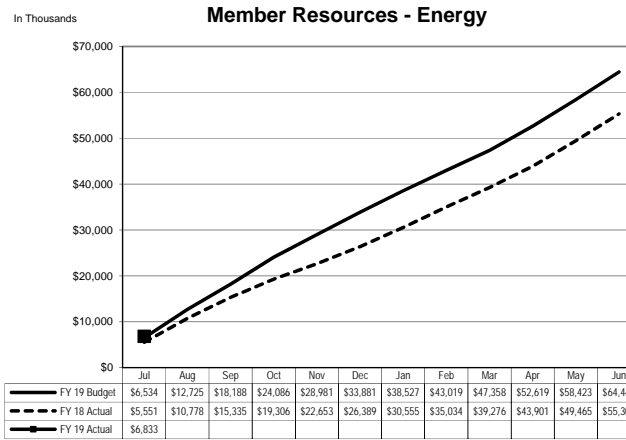
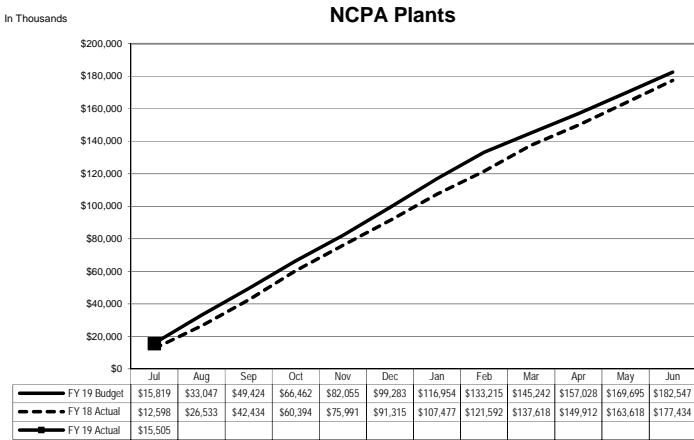
### Third Party Revenue



FY 19 Budget	\$28,317	\$56,635	\$84,952	\$113,269	\$141,587	\$169,904	\$198,221	\$226,539	\$254,856	\$283,173	\$311,491	\$339,808
FY 18 Actual	\$13,285	\$27,643	\$57,380	\$99,028	\$128,548	\$149,842	\$171,856	\$194,671	\$216,019	\$236,327	\$256,971	\$287,673
FY 19 Actual	\$51,598											

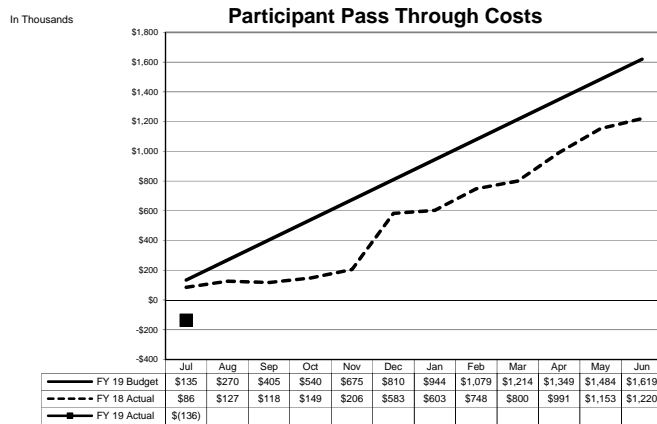
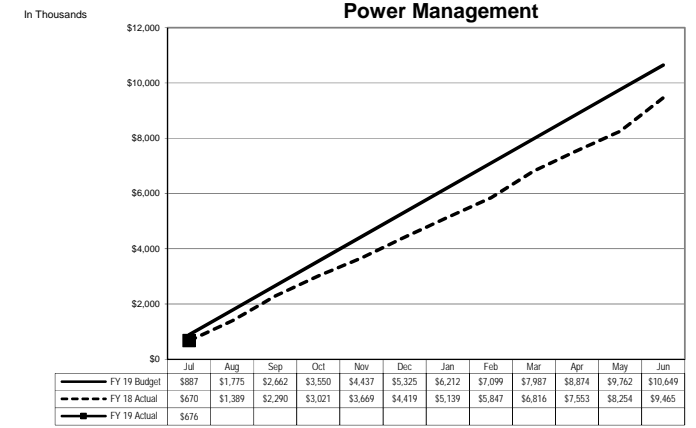
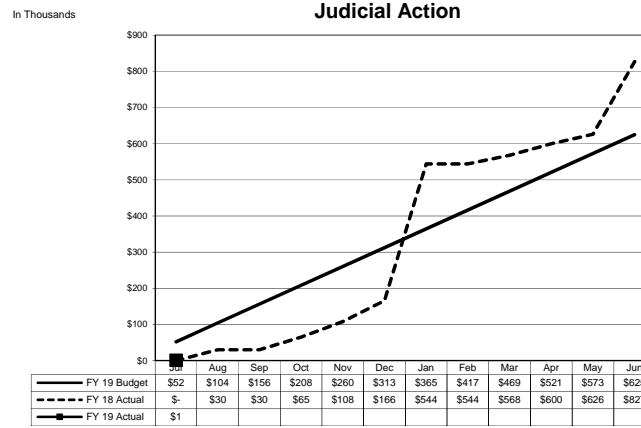
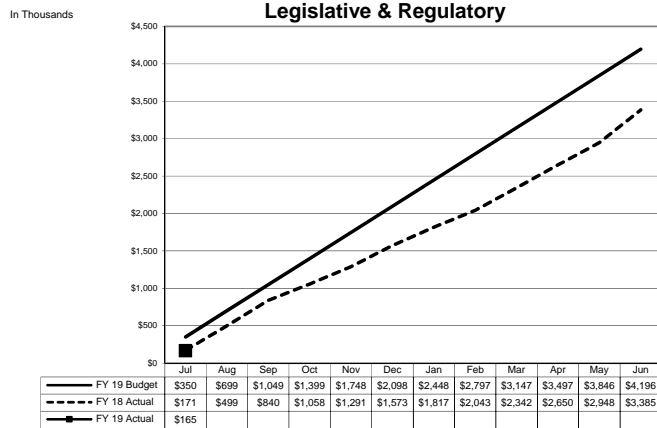
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

**Annual Budget Cost  
Generation Resources Analysis By Source  
As of July 31, 2018**



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

## Annual Budget Cost Management Services Analysis By Source As of July 31, 2018

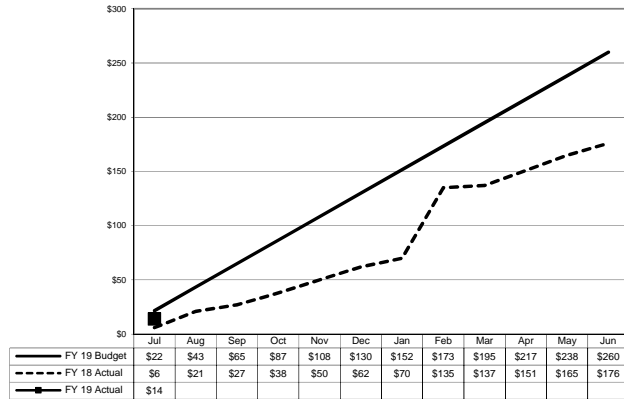


**Annual Budget Cost  
Management Services Analysis By Source  
As of July 31, 2018**

In Thousands

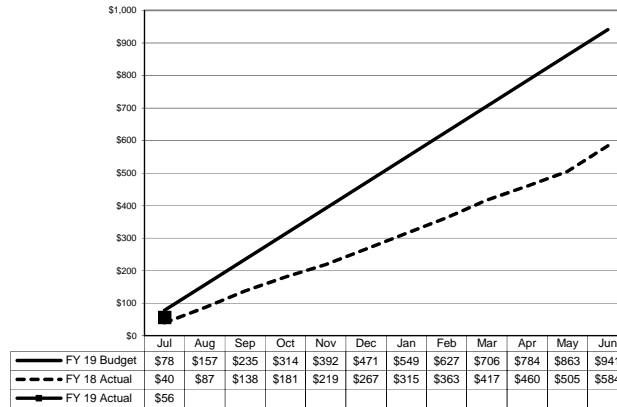
**Energy Risk Management**

In Thousands

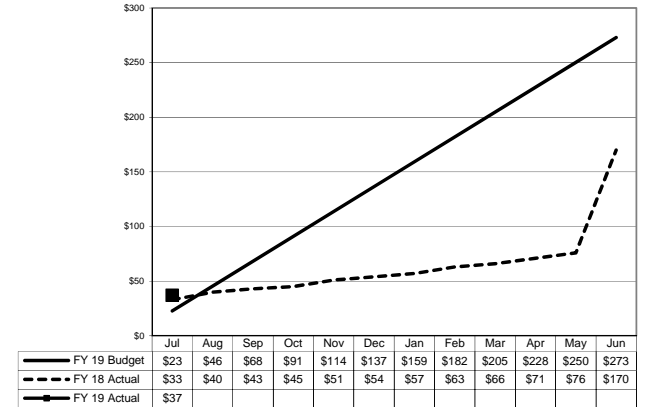


**Settlements**

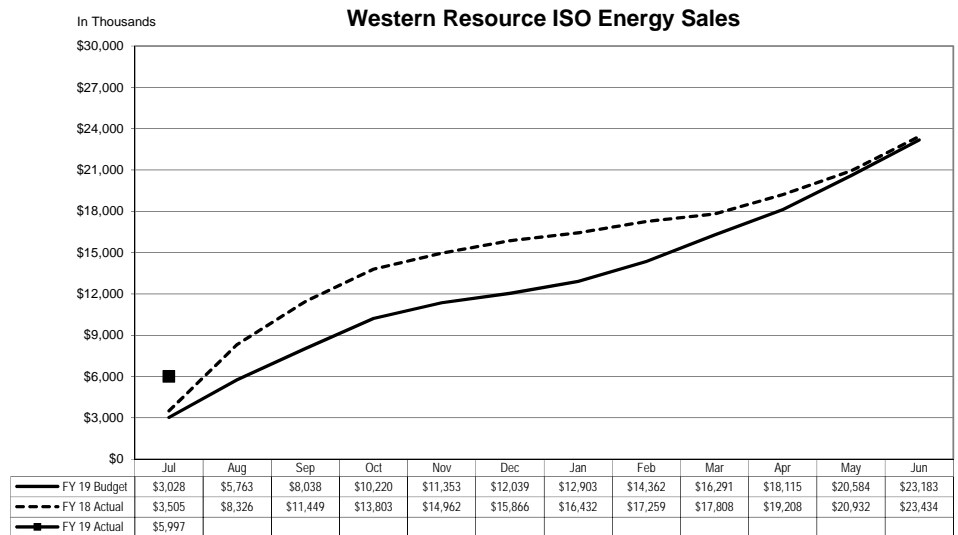
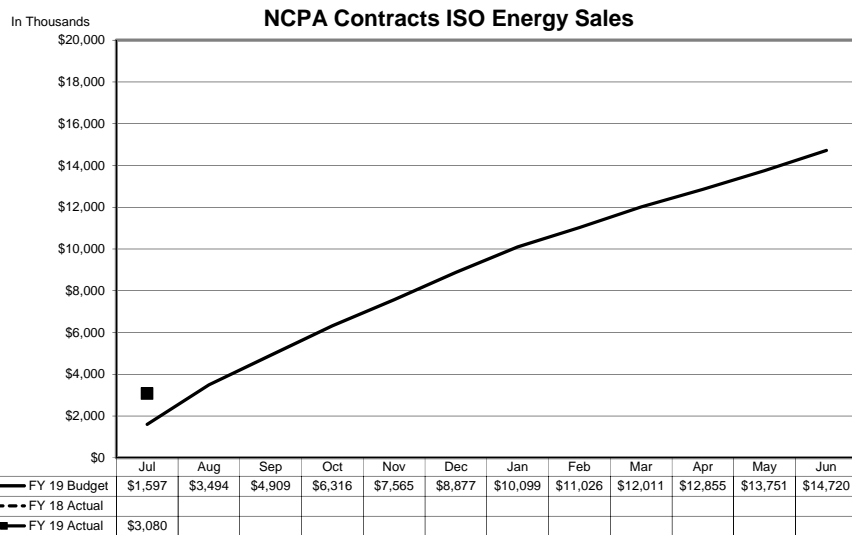
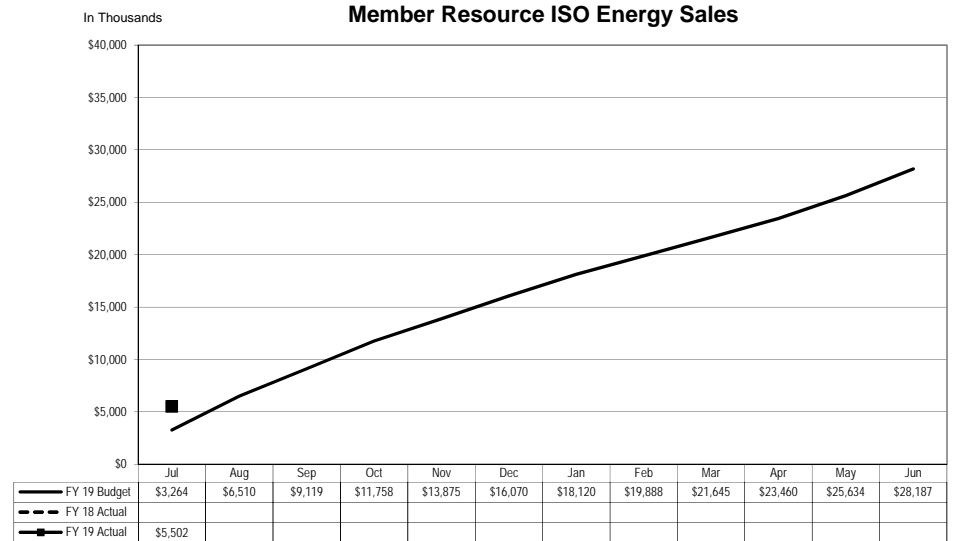
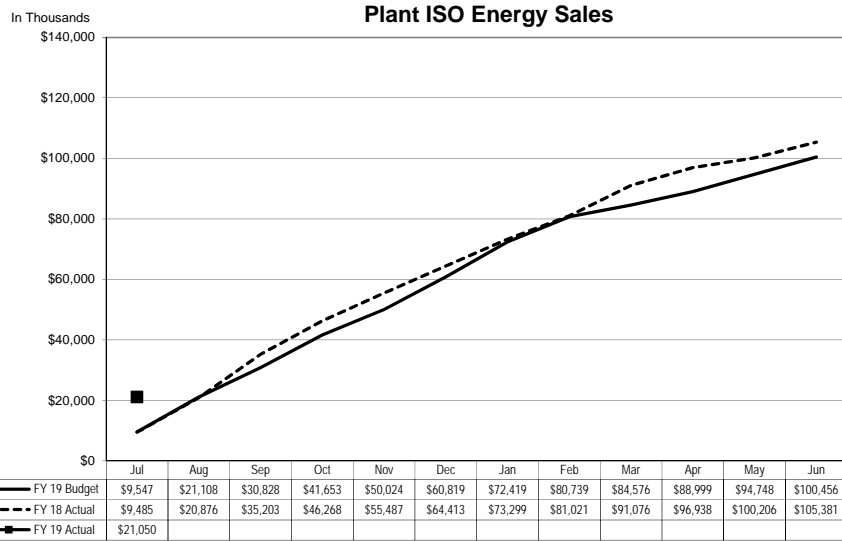
In Thousands



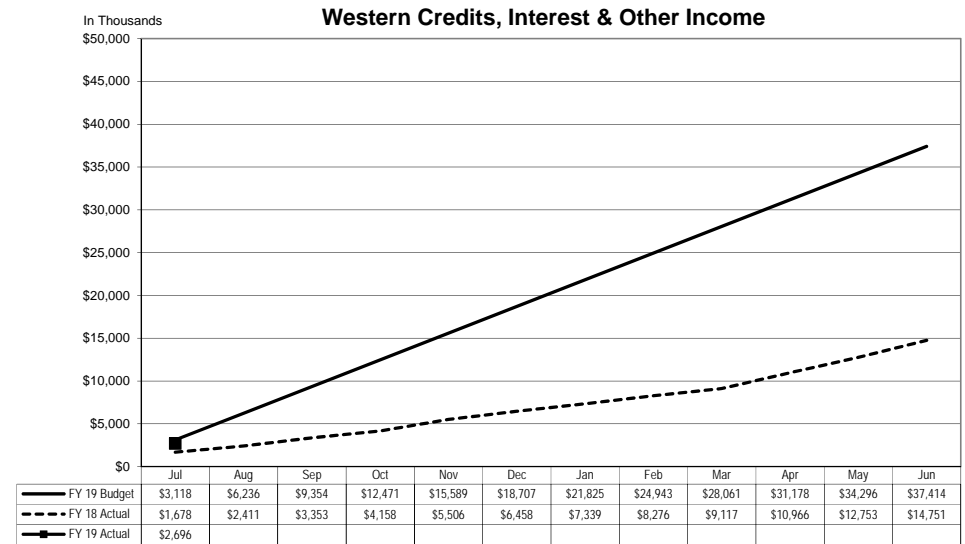
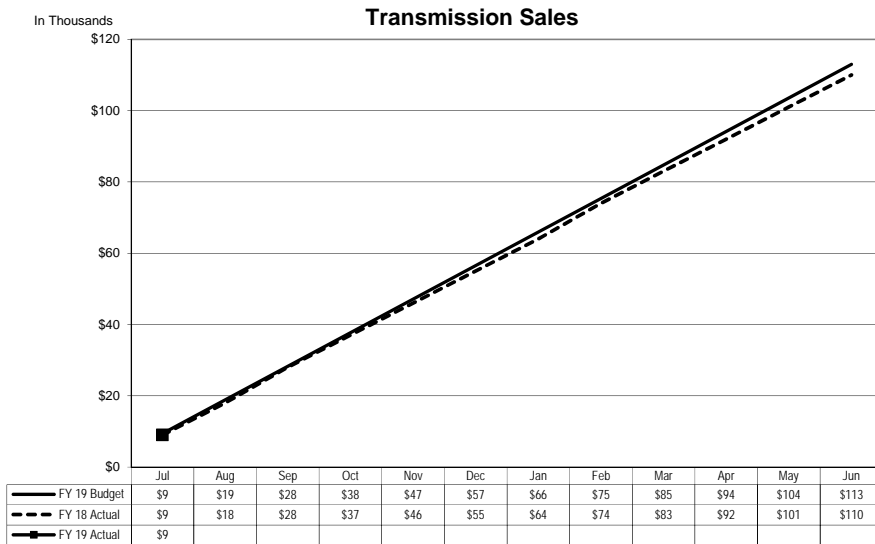
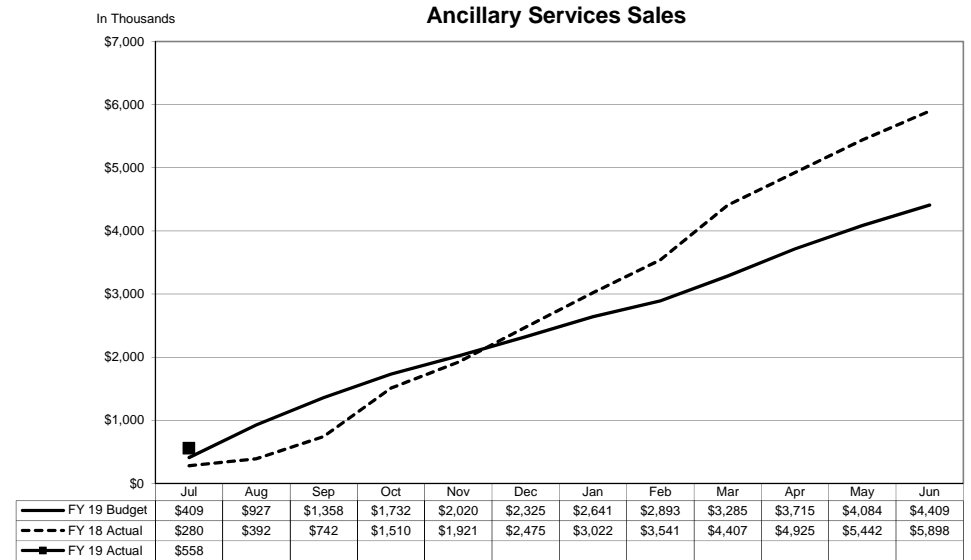
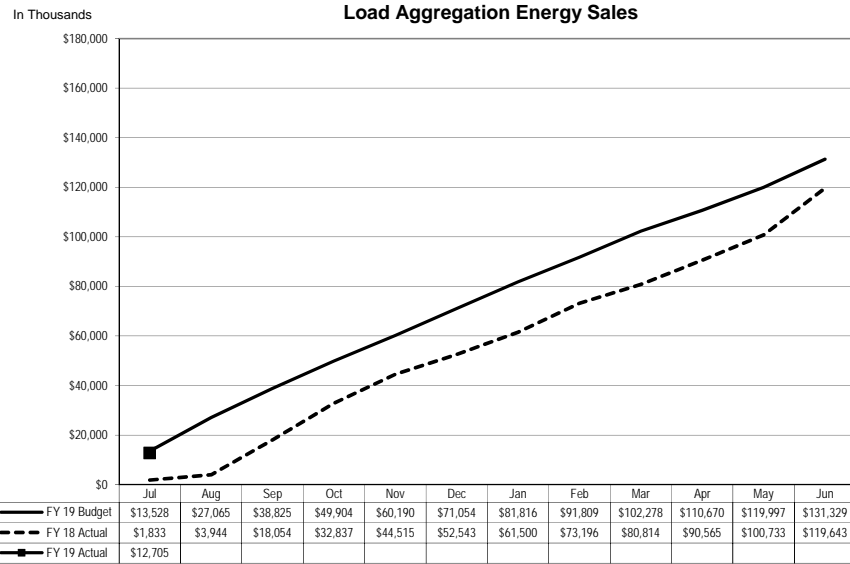
**Integrated Systems Support**



**Annual Budget Cost  
Third Party Revenue Analysis By Source  
As of July 31, 2018**



**Annual Budget Cost  
Third Party Revenue Analysis By Source  
As of July 31, 2018**





**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of July 31, 2018**

**Generation Cost Analysis**

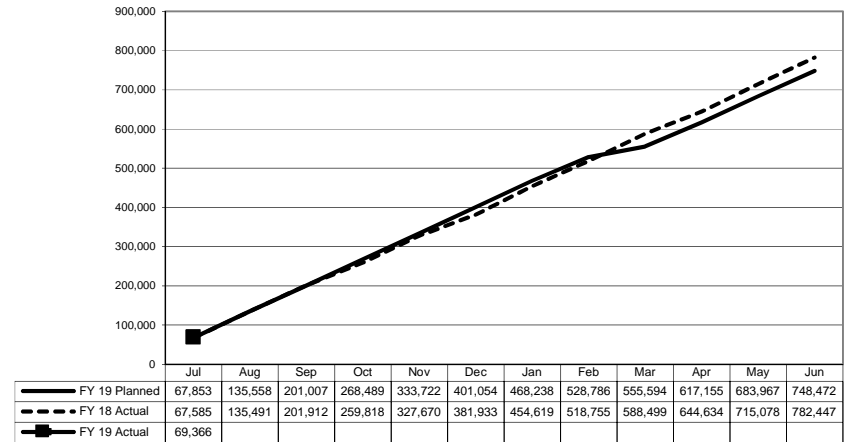
\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 17,793	\$ 1,267	\$ 18.27	\$ 16,526	93%
Capital Assets/Spare Parts Inventories	3,267	224	3.23	3,043	93%
Other Costs	8,137	585	8.43	7,553	93%
CA ISO Charges	291	80	1.16	211	72%
Debt Service	4,937	411	5.93	4,525	92%
Annual Budget	34,425	2,568	37.02	31,858	93%
Less: Third Party Revenue					
Interest Income	382	27	0.39	355	93%
ISO Energy Sales	26,285	4,110	59.26	22,174	84%
Ancillary Services Sales	-	-	-	-	-
Effluent Revenues	700	-	-	700	100%
Misc	110	9	0.13	101	92%
	27,477	4,146	59.77	23,331	85%
Net Annual Budget Cost to Participants	\$ 6,948	\$ (1,578)	\$ (22.76)	\$ 8,527	123%
Net Generation--MWh @ Meter	748,472	69,366			
\$/MWh (A)	\$ 2.69	\$ (28.69)			

**MWhs Generated**

In MWh

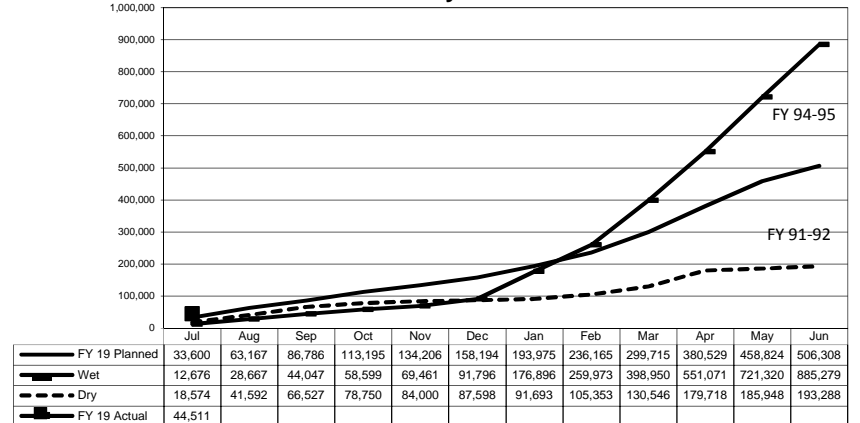
**Geothermal**



	Hydroelectric				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 8,685	\$ 18	\$ 0.40	\$ 8,667	100%
Capital Assets/Spare Parts Inventories	1,975	115	2.59	1,860	94%
Other Costs	3,238	211	4.75	3,027	93%
CA ISO Charges	2,801	550	12.35	2,252	80%
Debt Service	35,157	2,930	65.82	32,227	92%
Annual Budget	51,857	3,824	85.91	48,033	93%
Less: Third Party Revenue					
Interest Income	670	31	0.70	639	95%
ISO Energy Sales	20,783	4,935	110.87	15,848	76%
Ancillary Services Sales	3,048	408	9.17	2,639	87%
Misc	-	0	0.00	(0)	-
	24,501	5,375	120.75	19,126	78%
Net Annual Budget Cost to Participants	\$ 27,356	\$ (1,551)	\$ (34.84)	\$ 28,907	
Net Generation--MWh @ Meter	506,308	44,511			
\$/MWh (A)	\$ (15.41)	\$ (100.66)			

In MWh

**Hydro**



Footnotes:

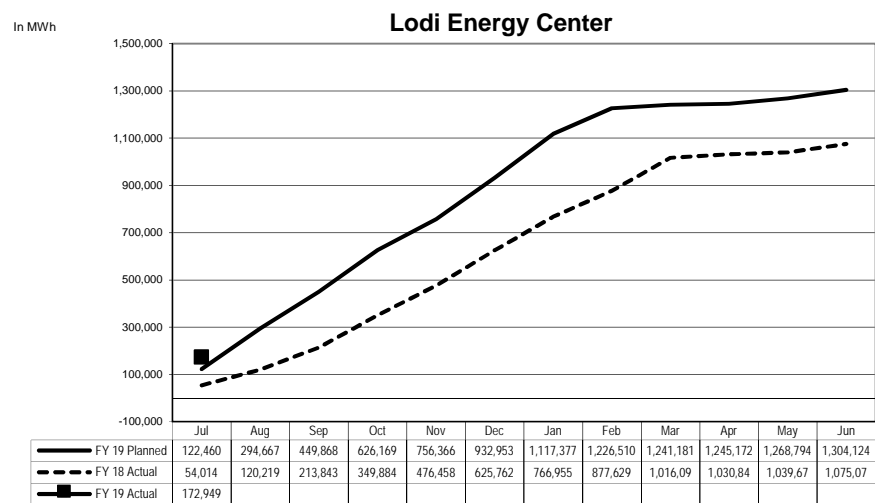
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of July 31, 2018**

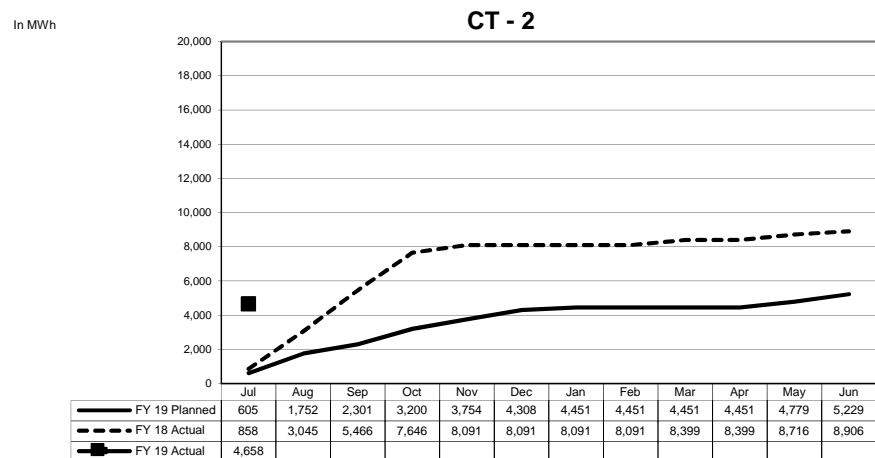
**Generation Cost Analysis**

	Lodi Energy Center				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 13,965	\$ 1,200	\$ 6.94	\$ 12,765	91%
Fuel	33,092	4,118	23.81	28,974	88%
AB 32 GHG Offset	-	-	-	-	0%
CA ISO Charges and Energy Purchases	5,665	311	1.80	5,354	95%
Capital Assets/Spare Parts Inventories	1,613	122	0.70	1,491	92%
Other Costs	3,302	179	1.04	3,122	95%
Debt Service	26,080	2,173	12.57	23,907	92%
<b>Annual Budget</b>	<b>83,717</b>	<b>8,103</b>	<b>46.85</b>	<b>75,613</b>	<b>90%</b>
Less: Third Party Revenue					
Interest Income	386	33	0.19	353	92%
ISO Energy Sales	52,415	10,546	60.98	41,869	80%
Ancillary Services Sales	1,029	150	0.87	879	85%
Transfer Gas Credit	-	-	-	-	0%
Misc	-	-	-	-	0%
	53,829	10,729	62.03	43,101	80%
<b>Net Annual Budget Cost to Participants</b>	<b>\$ 29,887</b>	<b>\$ (2,625)</b>	<b>\$ (15.18)</b>	<b>\$ 32,513</b>	<b>109%</b>
Net Generation--MWh @ Meter	1,304,124	172,949			
<b>\$/MWh (A)</b>	<b>\$ 2.92</b>	<b>\$ (27.75)</b>			

**MWhs Generated**



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,481	\$ 131	\$ 28.22	\$ 1,349	91%
Fuel and Pipeline Transport Charges	977	63	13.45	915	94%
Capital Assets/Spare Parts Inventories	60	-	-	60	100%
Other Costs	506	32	6.96	474	94%
CA ISO Charges	2	(13)	(2.79)	15	741%
Debt Service	5,717	476	102.28	5,240	92%
<b>Annual Budget</b>	<b>8,743</b>	<b>690</b>	<b>148.12</b>	<b>8,053</b>	<b>92%</b>
Less: Third Party Revenue					
Interest Income	109	11	2.39	98	90%
ISO Energy Sales	401	855	183.65	(454)	-113%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	990	196	42.17	794	80%
Misc	-	-	-	-	0%
	1,500	1,063	228.22	437	29%
<b>Net Annual Budget Cost to Participants</b>	<b>\$ 7,243</b>	<b>\$ (373)</b>	<b>\$ (80.11)</b>	<b>\$ 7,616</b>	<b>105%</b>
Net Generation--MWh @ Meter	5,229	4,658			
<b>\$/MWh (A)</b>	<b>\$ 291.87</b>	<b>\$ (182.38)</b>			



**Footnotes:**

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

**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of July 31, 2018**

**Generation Cost Analysis**

	<b>Combustion Turbine No. 1</b>				
	<b>Budget</b>	<b>Actual</b>	<b>\$/MWh Actual</b>	<b>Under(Over) Budget</b>	<b>YTD % Remaining</b>
Routine O & M	\$ 1,560	\$ 144	\$ 55.16	\$ 1,416	91%
Fuel and Pipeline Transport Charges	497	65	24.80	433	87%
Capital Assets/Spare Parts Inventories	1,165	50	19.17	1,115	96%
Other Costs	580	41	15.60	540	93%
CA ISO Charges	3	20	7.78	(17)	-596%
Debt Service	-	-	-	-	-
<b>Annual Budget</b>	<b>3,806</b>	<b>320</b>	<b>122.52</b>	<b>3,486</b>	<b>92%</b>
Less: Third Party Revenue					
Interest Income	-	-	-	-	-
ISO Energy Sales	572	603	231.38	(31)	-5%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	-	-	-	0%
	572	603	231.38	(31)	-5%
<b>Net Annual Budget Cost to Participants</b>	<b>\$ 3,233</b>	<b>\$ (284)</b>	<b>\$ (108.86)</b>	<b>\$ 3,517</b>	<b>109%</b>
Net Generation--MWh @ Meter	7,533	2,608			
<b>\$/MWh (A)</b>	<b>\$ 429.23</b>	<b>\$ (108.86)</b>			

**Footnotes:**

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

**MWhs Generated**

In MWh

**CT - 1**

