Northern California Power Agency
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BUSINESS PROGRESS REPORT

2019

June

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Generation Costs & Reliability

Combustion Turbine Project

Unit Operation for May 2019

Unit	Availability		Production			Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	51.5	MWh	CAISO/CAISO
	100.0%	100.0%	Unit 2	23.9		
Curtailments, Outages, and Comments: 5/12/19 to 5/24/19 – Alameda Unit 1 & 2 out of service for planned maintenance.						

Unit	Availability	Production		Reason for Run
CT1 Lodi	93.3%	744.0	MWh	CAISO
Curtailments, Outages, and Comments: 5/2/19 - Returned to service from major repair.				

Unit	Availability	Production		Reason for Run
CT2 STIG	100.0%	0.0	MWh	No Run
Curtailments, Outages, and Comments: No Comment for STIG.				

Unit	Availability	Production		Reason for Run
LEC	100.0%	5,501	MWh	CAISO
Curtailments, Outages, and Comments: No Comment for LEC.				

Maintenance Summary – Specific per asset above.

Geothermal Facilities

Availability/Production for May 2019

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	16.13 %	3,304 MWh	U1 was off line 5/1/19 until 2324 5/27/19 for T/G overhaul
Unit 2	46.44 %	*10,826 MWh	U2 was off line 5/1/19 until 1442 5/17/19 for T/G overhaul
Unit 3	N/A	N/A	U3 remains out of service
Unit 4	100.00 %	35,618 MWh	U4 had no outages for the month
Southeast Geysers Effluent Pipeline	98.0%	260.5 mgallons	Average flow rate: 5,764 gpm
Southeast Solar Plant	N/A	683,694 KWh	Year-to-date KWh: 2,536,331
Bear Canyon Pump Station Zero Solar	N/A	102,279 KWh	Year-to-date KWh: 3,333,568

* Accounts for an additional 214 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

Hydroelectric Project

Availability/Production for May 2019

Units	Availability	Net Electricity Generated	Out-of-Service
Collierville Unit 1	99.14 %	77,852 MWh	CV #1 unit was out of service on 5/30/19 at 0906 through 1532 due to planned bi-monthly maintenance.
Collierville Unit 2	99.05 %	77,753 MWh	CV #2 unit was out of service on 5/28/19 at 0904 through 1610 due to planned bi-monthly maintenance.
Spicer Unit 1	99.38 %	620 MWh	NSM #1 unit was out of service on 5/29/19 at 1003 through 1441 due to PG&E work at Salt Springs.
Spicer Unit 2	99.40 %	473 MWh	NSM #2 unit was out of service on 5/29/19 at 1005 through 1435 due to PG&E work at Salt Springs.
Spicer Unit 3	96.79 %	225 MWh	NSM #3 unit was out of service on 5/29/19 at 1011 through 5/30/19 at 1006 due to PG&E work at Salt Springs.

Operations & Maintenance Activities:

- CMMS work orders
- Vegetation management around transmission lines
- Tailwater Depression Pony Blower Preparations including forming, pouring and finishing the concrete pad.
- Welding maintenance on spare Pelton runner
- Bi-monthly maintenance on Collierville Units
- Cleared snow from Spicer Road to access Spicer Powerhouse
- Completed 40% of the painting on the CV intake tower
- Completed CalOES required EAP inundation map revisions
- Received USGS approval of the 2017/2018 Water Year Record

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

- No Cal OSHA Recordable items or Lost Time Accidents occurred in May 2019. One vehicle accident occurred at Geo, which resulted in no injuries. On 5/15/2019 a deer darted out and did some minor damage to the front bumper.

- Find below a Safety Report that highlights the following areas: recordable incidents and lost time accidents (LTAs) reported this period and this calendar year; the number of days since last recordable or LTA; the number of work hours since last recordable or LTA; and vehicle accidents reported this month and this calendar year. In September of 2012, Generation Services completed an internal audit of its records with the results reflected in this report and was updated through the payroll period ended May 25, 2019.

- The "CT Group" column reflects the combined safety numbers of all CT employees. Beginning with the November 2009 report, the CT Group Column also includes Lodi Energy Center staff.

May 2019
Generation Services Safety Report

	Hydro	GEO	CT Group *	NCPA HQ **
Cal OSHA Recordable (this month)	0	0	0	0
Cal OSHA Recordable (calendar year)	1	0	0	0
Days since Recordable	133	305	1,510	6,578
Work Hours Since Last Recordable	10,089	65,327	224,575	2,382,450
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	4,244	1,373	9,414	5,507
Work Hours without LTA	386,676	282,302	665,119	2,004,468
Vehicle Incident (month)	0	1	0	0
Vehicle Incident (calendar year)	0	1	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 May 25, 2019.

Power Management/NCPA Market Results

Dispatch and Schedule Coordination

- NCPA Dispatch and Schedule Coordination Center safely, reliably, and economically schedules, monitors, and manages NCPA and NCPA member power resources and loads 24 hours per day, 7 days per week on a continuous basis. This process includes balancing MSSA loads and resources on a 5-minute basis, optimizing NCPA resources and minimizing ISO costs.
- NCPA MSSA Load Data:

Current Year 2019 Data

	May 2019		Calendar Year 2019	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	315.69 5/31 @1800	183,122	367.71 4/24 @1800	928,198
SVP	473.72 5/31 @1500	305,645	519.61 4/24 @1500	1,497,072
MSSA	787.41 5/31 @ 1700	488,767	880.9 4/24 @ 1700	2,425,270

Last Year 2018 Data*

	May 2018		Calendar Year 2018	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	369.59 5/29 @1800	185,897	419.2 7/25 @1700	920,407
SVP	501.99 5/29 @1400	307,262	529.29 8/9 @1700	1,504,375
MSSA	862.82 5/29 @ 1500	493,159	945.44 8/9 @ 1700	2,424,782

*Last year's data added for comparison purposes only

System Peak Data

	All Time Peak Demand	2019 Peak Demand
NCPA Pool	517.83 MW on 7/24/06 @ 1500	367.71 4/24 @ 1800
SVP	586.59 MW on 9/1/17 @ 1600	519.61 4/24 @ 1500
MSSA	1070.79 MW on 9/1/17 @ 1700	880.90 4/24 @ 1700

- NCPA MSSA has a Deviation Band with the CAISO, which is used as a performance measure by the CAISO. The ability to stay within this Deviation Band is a measure of NCPA Dispatch's ability to balance the MSSA Loads and Resources on a 5-minute basis. The following NCPA Deviation Band Performance table includes all deviations, including deviations from unit forced outages, metering and load outages, COTP, Western, and WECC curtailments.

NCPA Deviation Band Performance		
	May 2019	Calendar Year 2019
MSSA % Within the Band	94.53%	95.58%

- McKay's spilling intermittently ending May 17th due to colder weather and resuming May 30th due to increased natural flows from snow melt, and economic bidding

- Spicer Meadows:
  - May 29 @ 1005 - 1435, all units separated from the grid due to PG&E work at Salt Springs; Unit 3 remained on providing station service

- Geothermal Units:
  - May 7 @ 1636 – 1649, Unit 4 off line due to high condenser back pressure
  - May 17, Unit 2 returned to service from annual maintenance outage (began April 1)
  - May 26, Unit 1 returned to service from annual maintenance outage (began April 21)

- Lodi Energy Center:
  - May 1 @ 2126 – 2200, STG tripped off line due to high vibration indication

- Alameda CTs:
  - May 12 - 31, Unit 1 and 2 out of service for annual maintenance

- Lodi CT:
  - May 3, unit returned to service from turbine repair/annual maintenance outage

- Collierville Units:
  - May 28 @ 0904 – 1610, Unit 2 o/s for bi-monthly maintenance outage and TWD upgrade work
  - May 30 @ 0906 – 1532, Unit 1 o/s for bi-monthly maintenance outage and TWD upgrade work

- STIG:
  - No curtailments

Pooling, Portfolio Planning & Forecasting

- NCPA Pool load in May 2019 was 183,123 MWh, or 94% of the forecast as mild temperatures moderated demand. Between June 1 and 16, 2019, NCPA Pool load was 106,730 MWh.

- Lodi Energy Center (LEC) operated for five days during May 2019, generating 989 MWh for the Pool due to mild weather and low power prices in relation to the cost of natural gas. Through June 16, 2019 LEC has generated 3,719 MWh for the Pool.

- During May 2019, 7.91" of rain was recorded at the Big Trees gage. Average May Big Trees precipitation is 2.62".

- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) is being maintained at $60/MWh.

- NSMR storage as of May 31, 2019 was at 160,119 acre feet. The historical average NSMR storage at the end of May is 139,808 acre feet. As of June 18, 2019 NSMR storage is 190,630 acre feet and spilling. The current NCPA Pool share of NSMR storage is 97,183 acre feet.

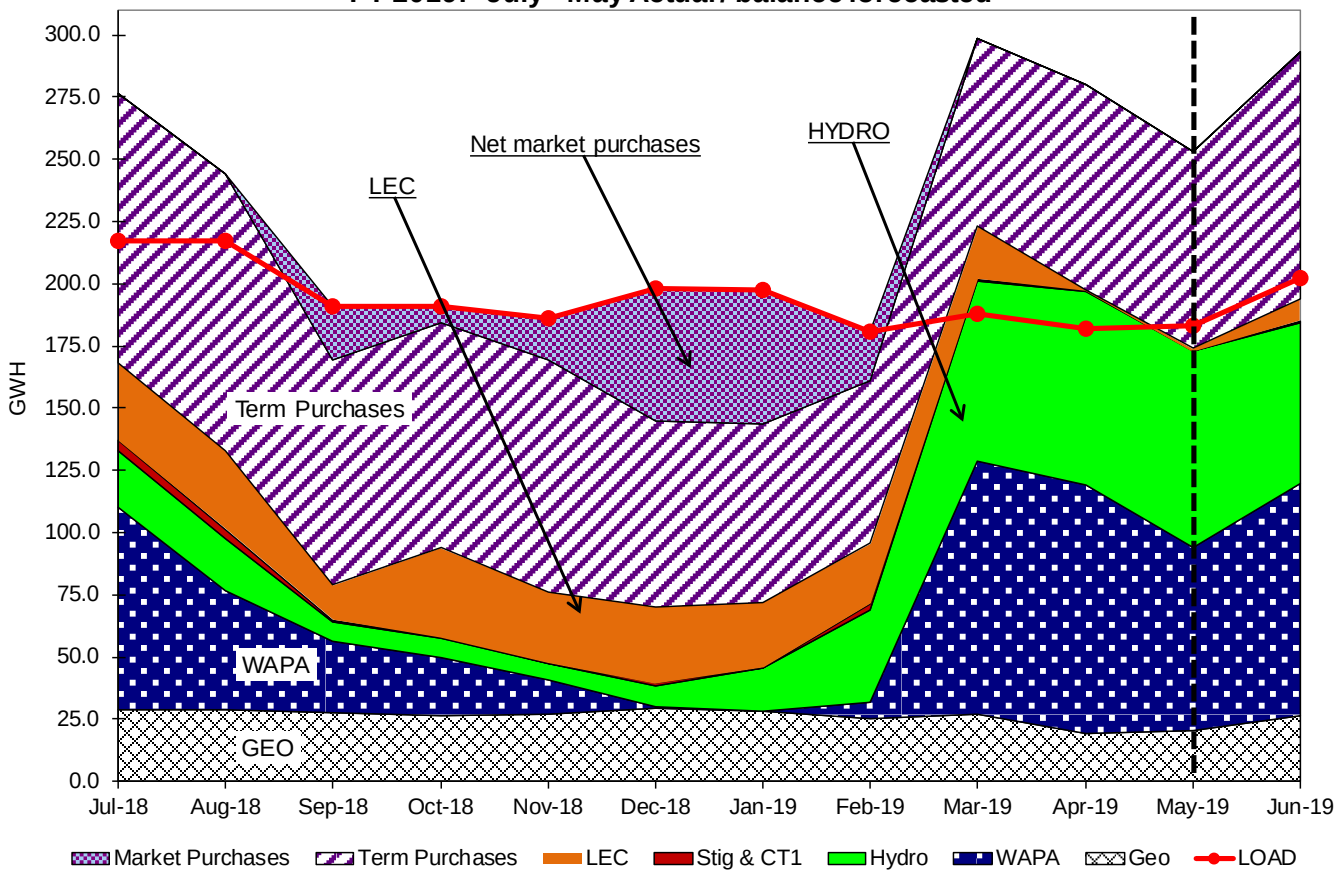
- Combined Calaveras Project generation for the Pool in May 2019 totaled 78.8 GWh, slightly up from 77.5 GWh in April 2019. The Pool's 78.8 GWh in May 2019 was in line with the pre-month forecast of 77.6 GWh.

- Western Base Resource (BR) deliveries for the Pool in May 2019 were 73,341 MWh, including Displacement energy totaling 10,122 MWh. The amount delivered that was less than forecast was likely due to slower than anticipated snow melt. Through June 16, 2019 the pool has received 55,910 MWh.

- The PG&E Citygate gas index averaged $2.405/MMBtu for delivery on June 17, 2019, well below the average PG&E gas price during May 2019 of $3.235/MMBtu, storage refill has been strong. The June 2019 PG&E Bidweek price is $3.225 /MMBtu, up 17.5 cents from May.

- Day-ahead NP15 electricity prices averaged $20.48/MWh (HLH) and $15.88 (LLH) during May 2019, with the hourly TH_NP15 maximum at $59.48 on May 30. This month, daily maximums surpassed $100 during the June 11-13 heat wave.

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



NCPA Pool Loads & Resources Value Summary

	Peak and Energy Summary May-19				Estimated Production Costs		Cost of Serving Demand	
	Coincident Peak (MW)	Total MWh	Forecast Values	Avg. MW	NCPA Pool			
	May-31-19 Hour 18				Cost/Revenue (Estimate)	Variable Cost ($/MWh)	Totals	Avg ($/MWh)
Demand	315.7	183,123	194,794	246.1	N/A	N/A		
			69157				**at Market Clearing Price**	
WAPA	-	73,341	94,607	98.6	$ 2,134,816	$ 29.11	$ 3,671,414	$ 20.05
Geothermal	-	20,608	23,319	27.7	391,546	19.00		
Hydro	-	78,800	75,047	105.9	472,800	6.00		
Stig & CTs	-	126	-	0.2	1,776	14.10	**at Variable Cost of Pool Generation**	
LEC	-	989	1,792	1.3	37,382	37.79		
Contracts	-	79,107	87,520	106.3	5,058,973	63.95	$ 5,861,547	$ 32.01
Market - Net	315.7	(69,848)	(87,491)	(93.9)	(1,366,576)	19.57		
(Net Sales = Negative)								
Net Total	315.7	183,123	194,794	246.1	$ 6,730,717	$ 32.01		

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 5/1/2019 ($/MWh)	6/14/2019 ($/MWh)
Jul-18	197,935	$ 63.64	$ 52.34	**Jul-19**	**$ 72.22**	**$ 56.93**
Aug-18	211,074	$ 55.31	$ 44.06	**Aug-19**	**80.85**	**64.45**
Sep-18	191,121	$ 35.51	$ 51.48	**Sep-19**	**53.73**	**49.63**
Oct-18	190,756	$ 45.30	$ 46.39	**Q3 2019**	**$ 68.93**	**$ 57.39**
Nov-18	186,329	$ 55.00	$ 50.16	**Q4 2019**	**49.88**	**46.53**
Dec-18	197,935	$ 57.27	$ 48.12	**Q1 2020**	**48.46**	**44.38**
Jan-19	197,652	$ 42.93	$ 45.13	**CY2020**	**$ 44.49**	**$ 41.67**
Feb-19	180,866	$ 79.12	$ 41.57	**CY2021**	**45.64**	**43.62**
Mar-19	187,890	$ 39.02	$ 24.83	**CY2022**	**46.31**	**45.11**
Apr-19	178,692	$ 24.88	$ 28.55	**CY2023**	**46.77**	**45.70**
May-19	**183,123**	**$ 20.05**	**$ 32.01**	**CY2024**	**47.45**	**45.94**
Jun-19				**CY2025**	**48.34**	**46.14**

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 August 2019:
  - Monthly System Resource Adequacy Demonstration (filed June 17, 2019)
  - Monthly Supply Plan (filed June 17, 2019)

Industry Restructuring

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

Resource Adequacy Enhancements

- Due to the rapid transformation of the resource mix in California, the CAISO is currently re-examining the CAISO Resource Adequacy requirements and rules. This initiative will explore changes to the CAISO's Resource Adequacy requirements and rules to ensure the resources providing reserve services are effectively supporting reliable operations of the grid.
- CAISO is proposing massive overhauls to its RA program in conjunction with CPUC changes. Specific areas the CAISO is looking at are termination of the Resource Adequacy Availability Mechanism and replacing with "less complicated" counting rules similar to eastern RTOs, import eligibility, exemptions, maximum import capability calculations and allocations, redefining Planned and Forced outages, new "fast" and "long" ramping products.
- NCPA is skeptical that all these changes are required and will be less complicated than the current RA program. NCPA is also concerned that these proposals will not address CAISO's stated issues of lack of RA showing above 115% and import unavailability due to Must Offer Obligations discouraging the former and lack of bid caps enabling the latter. NCPA will focus on working with CAISO to convince them that a Load Following MSS has sufficient incentive to meet demand with sufficient supply in real time due to the LFMSS Dispatch Operating Point Deviation penalty and therefore be exempt from such requirements. CAISO proposes to release changes for 2022 RA Year.
- NCPA staff will attend a two day working group scheduled for July 8th and 9th. A revised straw proposal is scheduled for publication on July 1.

Day-Ahead Market Enhancements

- The Day-Ahead Market Enhancements initiative has been scaled down to Phase 2 being that Phase 1 (15-minute granularity) is currently deemed infeasible and has been deferred. This is a serious blow to the Extending Day Ahead Market to Energy Imbalance Market initiative but those feasibility tests are still ongoing.
- DAME Phase 2 will address uncertainty issues associated forecast errors from Day Ahead to Real time by introducing a Day Ahead Flexible Ramping Product. Units will be forced to bid FRP in at $0 so costs and revenues associated with the product should be minimal. The CAISO also proposes to re-optimize Ancillary Services in the RTM in order to address undeliverable capacity. These features are scheduled to be released in 2021.

- NCPA is generally in support of the proposals but is concerned that the timelines are too aggressive for such major overhauls and expressed such concerns in stakeholder comments.
- NCPA staff will attend a technical workshop on June 20th.

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.
- CAISO's draft final proposal includes a hybrid billing determinate consisting of volumetric and peak demand functions in order to address costs shifts as well as the full impact of high coincident peak demand, low load factor UCD areas that have relatively lower volumetric use comparted to high load factor areas. It received general support from the market and will be presented to the CAISO board this year.
- NCPA performed an impact analysis and determined that NCPA members would mostly benefit or be indifferent to the new billing determinant so long as certain LFMSS benefits remain in place.

Western

Western Base Resource Tracking (NCPA Pool)

- NCPA Pool received 73,341 MWh Base Resource (BR) energy in May 2019. Actual Base Resource is approximately 20% less than the forecast, mainly due to slow snow melt.

- Market Efficiency Enhancement Agreement (MEEA) pricing saved Pool Members approximately $6,200 in May 2019. In addition, the Displacement Program saved Pool Members approximately $55,400, for a total savings of about $61,600 combined for the two programs.

Western Base Resource Scheduling

Western Base Resource Tracking - NCPA Pool							
	Actual			Costs & Rates			
	BR Forecast[1] (MWh)	BR Delivered (MWh)	Difference (MWh)	& Restoration Fund ($)	Monthly Cost of BR[2] ($/MWh)	Differential[3] ($/MWh)	Avg. Cost of BR[4] ($/MWh)
Jul-18	82,704	81,285	(1,419)	$1,516,215	$ 18.65	$ 0.52	$ 29.90
Aug-18	69,979	47,727	(22,252)	$1,516,215	$ 31.77	$ (0.76)	$ 30.07
Sep-18	59,937	28,828	(31,109)	$2,124,730	$ 73.70	$ 0.03	$ 32.14
Oct-18	57,294	23,113	(34,181)	$1,170,723	$ 50.65	$ 0.16	$ 33.95
Nov-18	29,042	13,824	(15,218)	$1,170,723	$ 84.69	$ 0.18	$ 35.33
Dec-18	16,349	960	(15,389)	$1,170,723	$ 1,219.50	$ 0.34	$ 37.64
Jan-19	20,572	-	(20,572)	$562,206	$ 27.33	$ -	$ 36.37
Feb-19	37,432	7,063	(30,369)	$995,254	$ 140.91	$ 0.05	$ 37.73
Mar-19	56,569	101,222	44,653	$1,170,720	$ 11.57	$ 0.04	$ 31.97
Apr-19	61,300	110,510	49,210	$2,134,816	$ 19.32	$ 1.25	$ 28.75
May-19	86,402	73,341	(13,061)	$2,134,816	$ 29.11	$ 0.10	$ 29.84
Jun-19	83,927	-	0	$2,134,816	$ 25.44	$ -	$ 30.50
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.						

- WAPA and BOR implemented Base Resource Min-Take Experiment 1 and Experiment 2 beginning operating date February 28, 2019 so customers can benefit from the added value from the increased scheduling flexibility. WAPA and BOR will continue with these two experiments. WAPA and BOR is preparing for Experiment 3 (last experiment) where customer can pre-disclose their intended schedule. The idea is to potentially lower the Base Resource Min-Take even more for all Base Resource customers during the low value hours. WAPA will share Experiment 3 details late June 2019 for customer review and feedback.

- WAPA and BOR will start to include assumptions narrative for the 12-month rolling forecast starting July 2019 Forecast. This will help customers better understand what the forecast is based on.

Interconnection Affairs

PG&E Update

Public Safety Power Shut Off (PSPS) Program

- PG&E attended the June UD meeting and provided a second update to their PSPS program. The main takeaway from this meeting was NCPA Dispatch will be contacted first by PG&E's Grid Control Center and be notified of potential/actual PSPS events.

- PG&E agreed to draft a PSPS communication document for NCPA members in the next few weeks. Members are to provide PG&E with contact information and data (how many customers, hospitals, first responders, etc.).

- PG&E will follow-up with members regarding mutual aid during restoration. When the communications procedure and mutual aid is finalized, members requested a drill to ensure coordination and preparedness.

FERC Order 890 Case

- Although the ruling of this case was not in NCPA's favor, FERC suggested and PG&E has agreed to put in place a stakeholder process for projects which PG&E self approves and does not go thru ISO's Transmission Planning Process. PG&E calls their process the Transmission Asset Management Planning Process (TAMPP). This process is in its design stage right now. NCPA and the joint interveners continue to have meetings and talks with PG&E to make the process available as soon as possible.

- During the TAMPP to a certain extent NCPA might be able to influence member specific projects. If a member has a project, modification, or upgrade in mind that can potentially benefit their system, please let the Power Management Team know.

- Southern California Edison (SCE) hosted its first Transmission Maintenance and Compliance Review (TMCR) meeting on May 29th. NCPA is currently reviewing documents and will likely file comments by June 26th.

TO-20 Rate Case

- This case is currently in settlement discussions. PG&E is asking for a ROE 12.5%, stating wildfire mitigation cost for this increase. Typically the return of equity is somewhere in the low 9 percent range.

- SCE is asking for 11.5% ROE in its 2018 rate case and SDG&E is asking for 11.2% in their TO-5 rate case. SCE in their new filing for their 2019 rate is asking for 17.12% ROE, the justification again is wildfire cost and mitigation. The main issue here is if any one utility is allowed a higher ROE it sets the precedence for other

utilities. NCPA is actively monitoring and considering a more active role in SCE's rate case.

Cotenancy Agreement

- As a result of CDWR's intent to terminate its ownership share in the Cotenancy Agreement, PG&E provided a draft amendment to the Agreement for all parties to review.

- NCPA and Geo Project members are currently evaluating taking a pro-rata or full share of CDWR's entitlement.

ISO Update

Affected System Notice

- ISO has identified NCPA to be an effected system for thirteen projects (13) in the Cluster 11 interconnection queue. NCPA will evaluate any impacts and will respond to ISO by August 12, 2019.

Debt and Financial Management

- The Treasury market continues to trade with a slight inversion on the short end of the curve as the bond and stock markets appear to be content with waiting on Wednesday's FOMC Rate Decision before making too many rash moves in either direction. The current Treasury yields are as follows: 3m (2.17%), 6m (2.18%), 12m (2.03%), 2y (1.86%), 5y (1.84%) 10y (2.09%) and 30y (2.58%).

- The economic data is beginning to now support the bond market's view that the U.S. economy is slowing to the point that the Fed needs to make a move soon. While most economists do not believe that a move will occur at this week's meeting (25% chance), they are feeling pretty confident that the Fed will act next month (87% chance) with a rate reduction.

- On May 30, 2019, Moody's Investors Service upgraded the rating on NCPA's Capital Facility project (STIG) revenue bonds to A1 from A2 with a stable outlook. The upgrade was prompted by sustained improvements in the average credit quality of the project participants (Lodi, Roseville, Alameda and Lompoc).

- The Finance Committee provided staff direction to solicit proposals to refund the outstanding debt of the Capital Facility project. NCPA staff and PFM will release an RFP in June/July with a goal of refunding the debt by November 2019. The estimated NPV savings (based on today's rates) is approximately $1.9 million or 7.69% of refunded par.

Schedule Coordination Goals

Software Development

- Staff in collaboration with Power Management, Generation Services and a consultant, have begun efftorts to develop a solution to enable Multi-Stage Generation capability for the Lodi Energy Center. Business Analysis and software development is underway in preparation for a market simulation as early as August 2019 and is anticipated to go live in early 2020.

- EBCE Transition in the various bid-to-bill software successfully rolled out for the start date of June 1, 2019

- Santa Clara's new RIOB SCID has been configured and rolled out for the start date of June 1, 2019.

- TABS enhanced to enable PCWA's MFP1 SCID to schedule Inter-SC Trade starting on July 1, 2019 trade date.

- Work continues to develop the replacement for the NCPA Automated Dispatch System. Completion is anticipated middle of next year.

- Work is in progress to automate and integrate members' monthly Resource Adequacy demonstrations and supply plans into NCPA's bid-to-bill system.

Network

- Progress continues to be made upgrading staff to Windows 10 with over 60% of the Agency on the new Operating System. The goal is to have all workstations moved over before the end of 2020.

- IS successfully upgraded the T1 circuit at Lodi CT as part of a larger project to enhance the reliability of the ECN circuits. .

- The IS department is working with Collabware to implement a records retention workflow strategy that will be incorporated into the Agency's SharePoint implementation. Software installation is expected in May 2019 with testing starting shortly thereafter.

- The IS team is closely working with Generation Service to assist in the network and system upgrades during the Siemens T3000 overhaul at both the LEC and Geothermal plants.

- The Ops and Support staff are currently evaluating Fortinet firewalls as a potential replacement for the end of life Cisco ASA security access points. It is anticipated that a decision will be made in the next few weeks and purchase to be made before the end of the fiscal year.

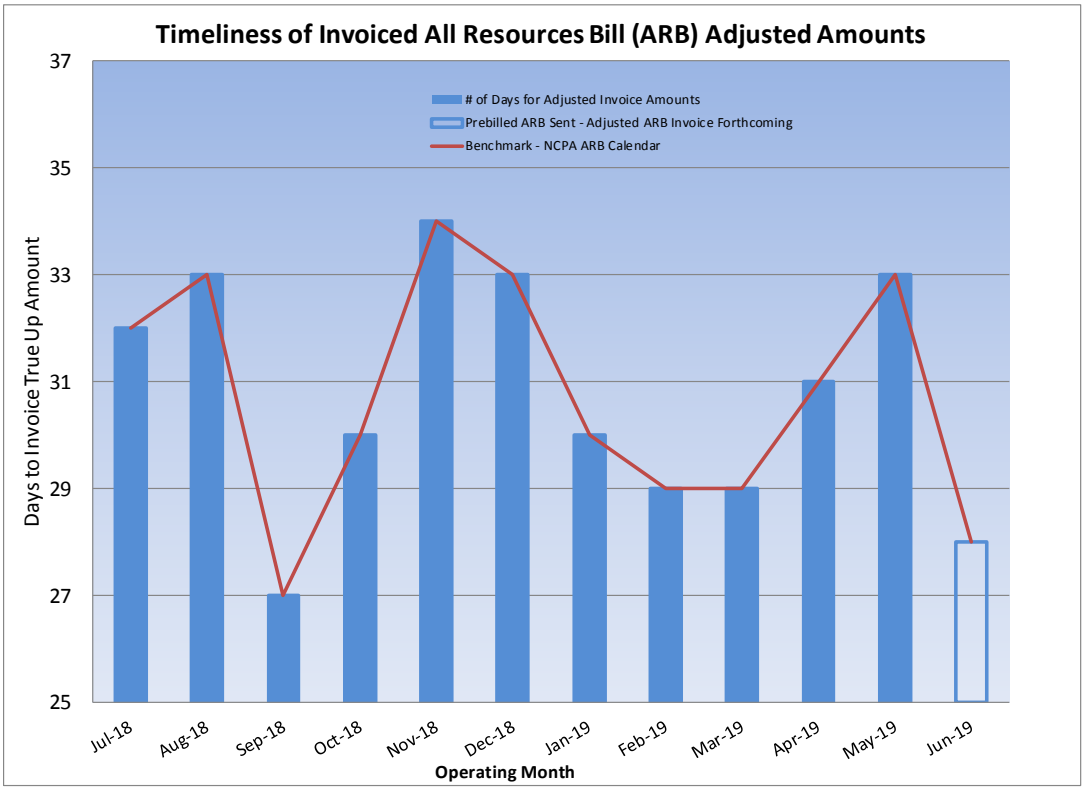
NCPA Bills & Settlements

Progress Against the Strategic Plan

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

The June 2019 NCPA All Resources Bill (ARB) monthly invoice sent to members on May 24, 2019 contains:

- June 2019 monthly pre-billed budget/forecast amounts;
- April 2019 (1st Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- March 2019 (2nd Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
- January 2019 (3rd Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
- July 2018 (4th Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
- September 2017 (5th Adjustment) T+18 month recalculated CAISO settlement true-up allocations;
- June 2016 (6th Adjustment) T+33 month recalculated CAISO settlement true-up;
- March 2016 (7th Adjustment) T+35 month CAISO settlement true-up;



Legislative & Regulatory

Political Arena State/Federal/Western Programs

- NCPA filed comments on the final recommendations released by the Commission on Catastrophic Wildfire Cost and Recovery. NCPA expressed support for the Commission's work, and urged further action by the Governor and State Legislature. NCPA L&R Staff will remain engaged in discussions on wildfire issues as both houses in the Legislature, as well as the Governor's Office, put forth proposals in the coming weeks.

- NCPA continues to engage in discussions at the State Capitol on key legislation related to wildfires, resource procurement, and vehicle-grid integration as bills begin policy committee hearings in their second house. The Legislature approved its proposed budget for the 2019-20 fiscal year; the budget bill awaits Governor Newsom's signature before it can be enacted and put into effect on July 1, 2019. Legislators are expected to supplement the budget with a number of budget "trailer" bills that will provide further details on programs linked to various budget line items.

- NCPA submitted its final comments and expressed support for the U.S. Bureau of Reclamation’s Central Valley Project Power Initiative recommendations to enhance the value of the CVP power resource. The recommendations, once approved by Commissioner Brenda Burman, will direct Reclamation action to improve transparency and provide opportunities for early engagement and collaboration on proposed actions or projects. The initiative involved active stakeholder meetings over several months where key challenges for power customers were identified and key action items developed.

Human Resources

Hires:

Victoria Mao, joined NCPA on May 13, 2019 as a Power Settlements Analyst I, at our Headquarters office in Roseville, CA. Victoria most recently worked as an Energy Data Analyst and Consultant at ADM Associates, Inc. Victoria has a Bachelor of Science degree in Energy Resources Engineering with a Concentration in Renewable Energy from Stanford University.

Jaime Gomez joined NCPA on May 14, 2019 as a Combustion Turbine Specialist II at our Lodi Energy Center in Lodi, CA. Jaime brings over 12 years of operations experience having most recently worked as an Operator Technician II with Calpine.

Kyle Marlatt joined NCPA on May 17, 2019 as a Combustion Turbine Specialist III at our Lodi Energy Center in Lodi, CA. Kyle brings over seven years of operations and maintenance experience having most recently worked as the Lead Operations and Maintenance Technician with Ethos Energy.

Oliver Tarap joined NCPA on June 3, 2019 as a Hydro Tech at our Hydroelectric Facilities in Murphys, CA. Oliver brings over fifteen years of electrical and maintenance

experience having most recently worked as the Senior Supervisor of Electrical, Controls and Communication with the Calaveras County Water District.

Intern Hires:

Brian Popish, Assistant Student IV, Lodi Energy Center 5/13/2019

Jack Ta, Assistant Student III, Information Services, HQ 5/20/2019

Daniel Orozco, Assistant Student IV, Generation Services, HQ, 5/21/2019

Alexander Pequinot, Assistant Student III, General Counsel, HQ, 6/11/2019

Sarah Naameh, Assistant Student II, City of Alameda, 5/28/2019

Julian Pelzner, Assistant Student IV, City of Alameda, 5/28/2019

Kristopher Weber, Assistant Student III, City of Redding, 5/28/2019

Joe Tomerlin, Assistant Student II, City of Healdsburg, 6/10/2019

Promotions/Position Changes:

None.

Separations:

Joe Owen, Operator Technician, retired from the Geothermal Facilities on May 24, 2019 after over 23 years of service with NCPA.

Heath Fifield, Operator Technician IV, retired from the Geothermal Facilities on May 23, 2019 after over 34 years of service with NCPA.

Brooklyn Saylor resigned from the Lodi Energy Center after 2 years of service on May 31, 2019.

Derrick Mirikitani resigned from NPCA Headquarters after 2 years of service on June 14, 2019.

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

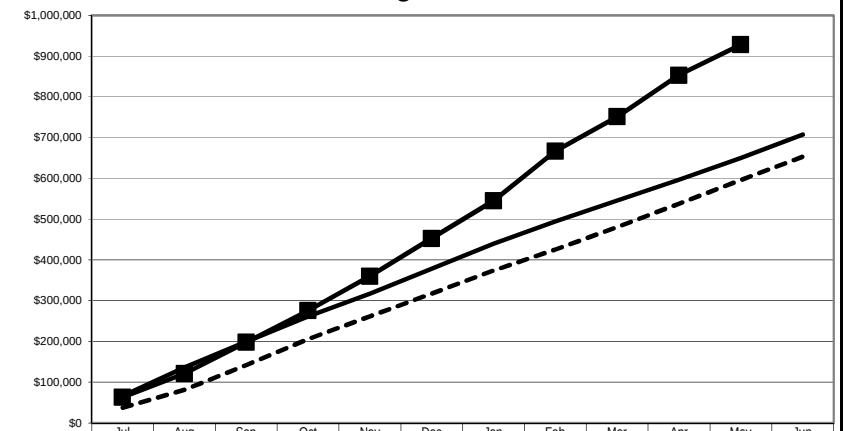
In Thousands

	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
GENERATION RESOURCES				
NCPA Plants				
Hydroelectric	51,857	46,291	$ 5,566	11%
Geothermal Plant	34,425	32,024	2,402	7%
Combustion Turbine No. 1	8,106	8,121	(15)	0%
Combustion Turbine No. 2 (STIG)	8,743	8,631	112	1%
Lodi Energy Center	83,717	91,316	(7,600)	-9%
	186,847	186,383	464	0%
Member Resources - Energy	64,449	54,053	10,395	16%
Member Resources - Natural Gas	3,098	3,866	(768)	-25%
Western Resource	31,350	18,477	12,873	41%
Market Power Purchases	15,539	21,658	(6,119)	-39%
Load Aggregation Costs - ISO *	273,858	513,817	(239,959)	-88%
Net GHG Obligations	1,123	2,647	(1,524)	-136%
	576,264	800,901	(224,637)	-39%
TRANSMISSION				
Independent System Operator	112,822	111,929	893	1%
MANAGEMENT SERVICES				
Legislative & Regulatory				
Legislative Representation	2,023	1,756	267	13%
Regulatory Representation	887	591	295	33%
Western Representation	848	594	254	30%
Member Services	438	199	239	55%
	4,196	3,141	1,055	25%
Judicial Action	625	634	(9)	-1%
Power Management				
System Control & Load Dispatch	6,107	5,213	894	15%
Forecasting & Prescheduling	2,775	2,283	492	18%
Industry Restructuring	439	319	119	27%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,135	769	365	32%
Green Power Project	3	0	3	91%
Gas Purchase Program	78	57	21	26%
Market Purchase Project	112	75	37	33%
	10,649	8,718	1,931	18%
Energy Risk Management	260	193	67	26%
Settlements	941	501	440	47%
Integrated System Support	273	157	116	42%
Participant Pass Through Costs	1,619	1,125	494	31%
Support Services	-	883	(883)	
	18,563	15,351	3,212	17%
TOTAL ANNUAL BUDGET COST	707,649	928,181	(220,532)	-31%
LESS: THIRD PARTY REVENUE				
Plant ISO Energy Sales	100,456	150,538	(50,082)	-50%
Member Resource ISO Energy Sales	28,187	33,660	(5,473)	-19%
NCPA Contracts ISO Energy Sales	14,720	23,979	(9,259)	-63%
Western Resource ISO Energy Sales	23,183	22,108	1,075	5%
Load Aggregation Energy Sales	131,329	289,117	(157,788)	-120%
Ancillary Services Sales	4,409	4,909	(500)	-11%
Transmission Sales	110	101	9	8%
Western Credits, Interest & Other Income	37,414	24,114	13,300	36%
	339,808	548,526	(208,717)	-61%
NET ANNUAL BUDGET COST TO PARTICIPANTS	367,840	379,656	$ (11,815)	-3%

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

In Thousands

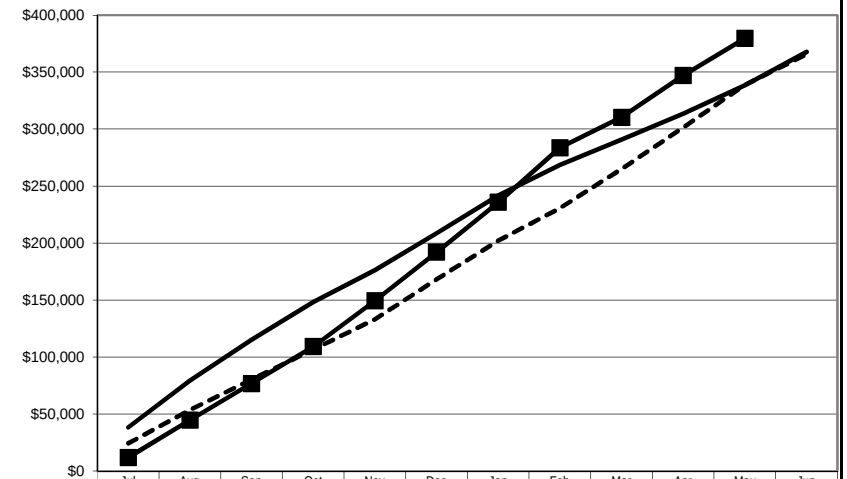
Annual Budget Cost



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$66,642	$136,184	$200,093	$261,509	$317,898	$378,515	$439,972	$495,164	$545,806	$596,744	$650,216	$707,649
FY 18 Actual	$37,591	$81,122	$142,814	$205,775	$261,655	$317,858	$373,814	$425,553	$481,090	$537,737	$595,944	$653,343
FY 19 Actual	$63,553	$121,408	$198,335	$276,168	$360,407	$452,972	$545,265	$667,517	$751,832	$853,506	$928,181	

In Thousands

Net Annual Budget Cost to Participants

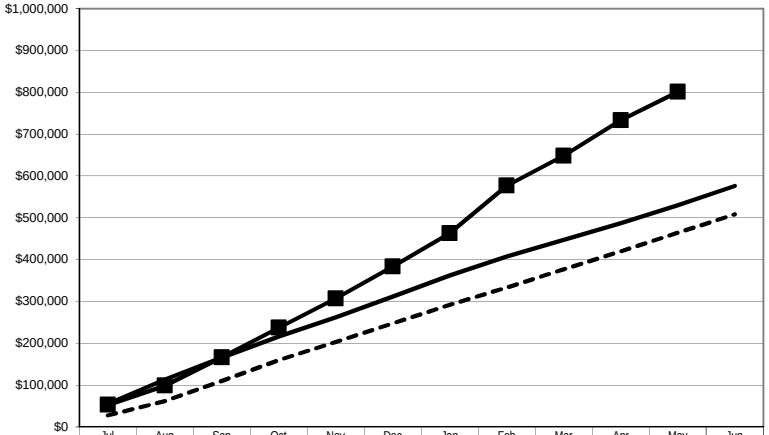


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$38,325	$79,549	$115,141	$148,240	$176,312	$208,611	$241,750	$268,626	$290,950	$313,571	$338,725	$367,840
FY 18 Actual	$24,306	$53,479	$80,273	$106,747	$133,107	$168,016	$202,258	$230,882	$265,071	$301,410	$338,973	$365,670
FY 19 Actual	$11,955	$44,549	$76,828	$109,135	$149,357	$192,075	$235,887	$283,765	$310,479	$347,146	$379,656	

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

Generation Resources

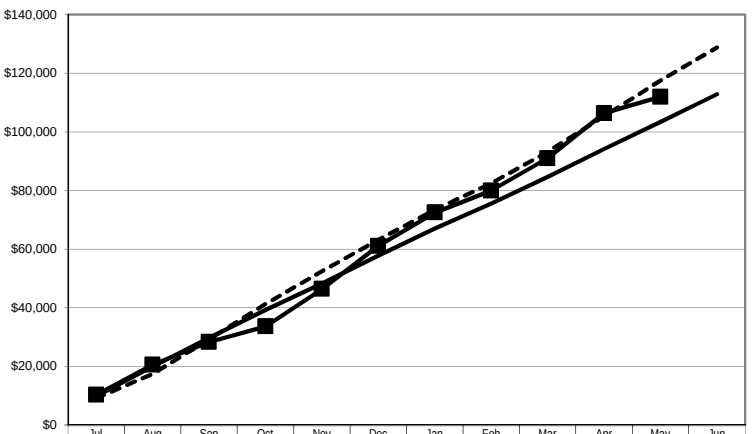
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$55,270	$113,084	$165,773	$216,177	$261,937	$311,494	$362,100	$407,288	$447,265	$487,091	$529,877	$576,264
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	$98,414	$166,029	$237,122	$307,103	$383,425	$462,967	$576,569	$648,144	$733,140	$800,901	

Transmission-ISO

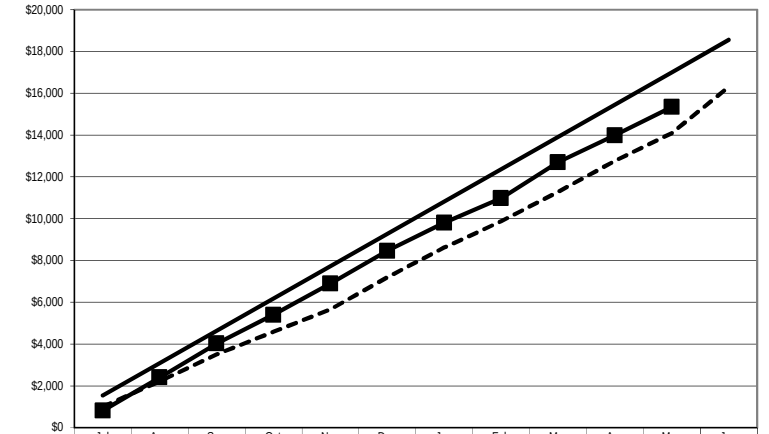
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
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	$20,580	$28,273	$33,646	$46,400	$61,084	$72,491	$79,965	$90,983	$106,374	$111,929	

Management Services

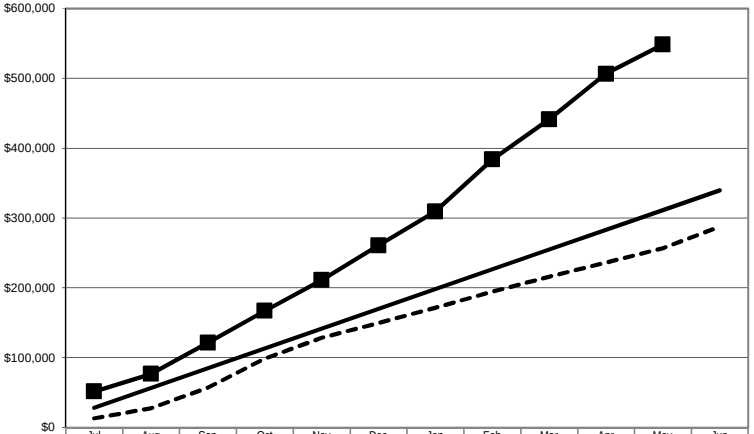
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$1,547	$3,094	$4,641	$6,188	$7,735	$9,282	$10,828	$12,375	$13,922	$15,469	$17,016	$18,563
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	$2,414	$4,033	$5,400	$6,904	$8,463	$9,807	$10,983	$12,706	$13,992	$15,351	

Third Party Revenue

In Thousands



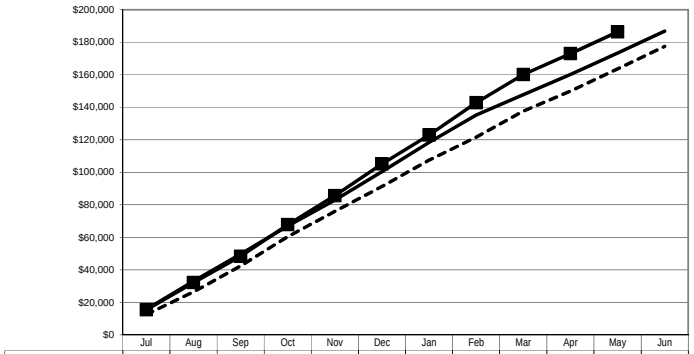
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$28,317	$56,635	$84,952	$113,269	$141,587	$169,904	$198,221	$226,539	$254,856	$283,173	$311,491	$339,808
FY 18 Actual	$13,285	$27,643	$57,380	$99,028	$128,548	$149,842	$171,556	$194,671	$216,019	$236,327	$256,971	$287,673
FY 19 Actual	$51,598	$76,859	$121,507	$167,033	$211,049	$260,897	$309,378	$383,752	$441,354	$506,360	$548,526	

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

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

NCPA Plants

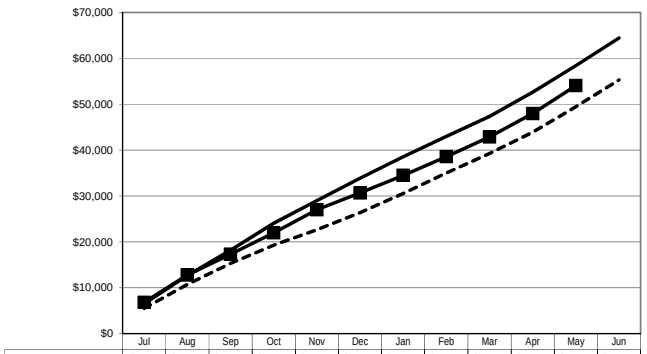
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$15,819	$33,047	$49,704	$67,022	$82,895	$100,403	$118,354	$135,195	$147,802	$160,168	$173,415	$186,847
FY 18 Actual	$12,598	$26,533	$42,434	$60,394	$75,991	$91,315	$107,477	$121,592	$137,618	$149,912	$163,618	$177,434
FY 19 Actual	$15,505	$32,170	$48,356	$67,829	$85,681	$105,177	$122,893	$142,833	$160,156	$172,979	$186,383	

Member Resources - Energy

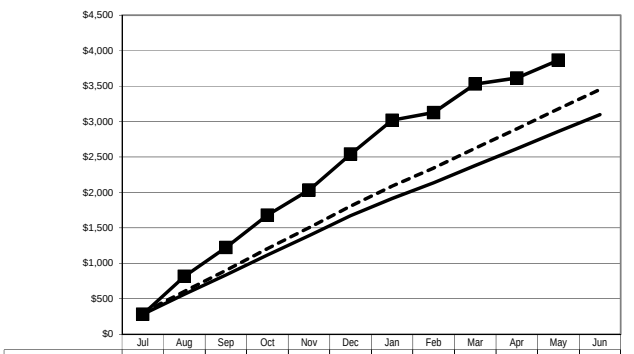
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$6,534	$12,725	$18,188	$24,086	$28,981	$33,881	$38,527	$43,019	$47,358	$52,619	$58,423	$64,449
FY 18 Actual	$5,551	$10,778	$15,335	$19,306	$22,653	$26,389	$30,555	$35,034	$39,276	$43,901	$49,465	$55,301
FY 19 Actual	$6,833	$12,799	$17,335	$21,987	$27,023	$30,686	$34,508	$38,584	$42,886	$47,975	$54,053	

Member Resources - Natural Gas

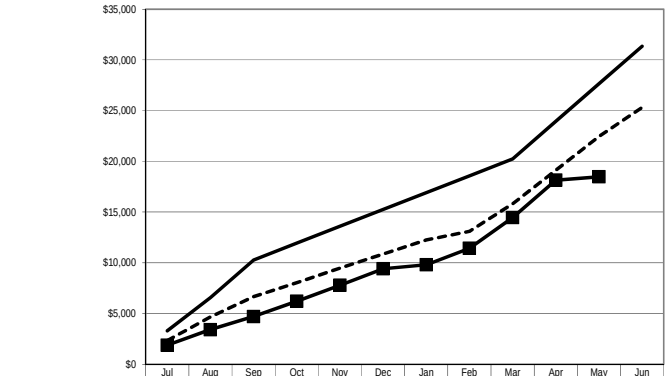
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$282	$563	$836	$1,117	$1,390	$1,671	$1,916	$2,137	$2,381	$2,617	$2,862	$3,098
FY 18 Actual	$303	$606	$901	$1,207	$1,502	$1,808	$2,090	$2,344	$2,625	$2,898	$3,180	$3,452
FY 19 Actual	$282	$817	$1,223	$1,680	$2,034	$2,541	$3,019	$3,127	$3,530	$3,614	$3,866	

Western Resources

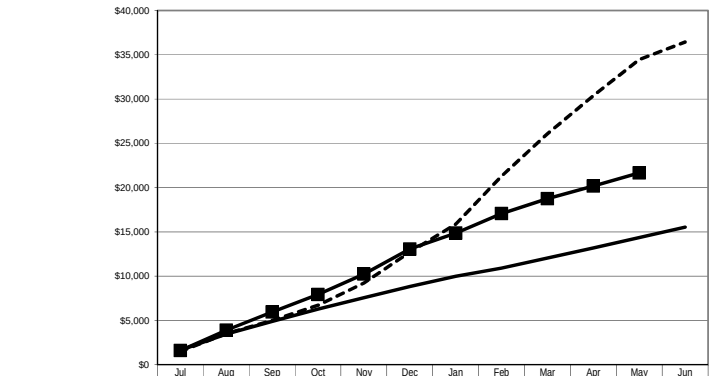
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$3,288	$6,571	$10,278	$11,948	$13,607	$15,261	$16,916	$18,579	$20,248	$23,943	$27,647	$31,350
FY 18 Actual	$2,330	$4,662	$6,658	$8,040	$9,478	$10,858	$12,247	$13,096	$15,814	$19,124	$22,444	$25,319
FY 19 Actual	$1,876	$3,410	$4,702	$6,208	$7,791	$9,416	$9,805	$11,433	$14,459	$18,152	$18,477	

Market Power Purchases

In Thousands



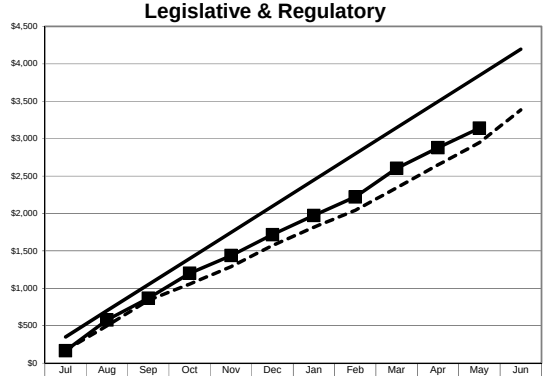
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$1,647	$3,474	$4,901	$6,278	$7,559	$8,833	$9,984	$10,911	$12,044	$13,188	$14,357	$15,539
FY 18 Actual	$1,497	$3,527	$4,999	$6,714	$9,228	$12,717	$15,876	$21,295	$26,075	$30,385	$34,465	$36,441
FY 19 Actual	$1,607	$3,902	$5,965	$7,940	$10,244	$13,071	$14,866	$17,068	$18,755	$20,175	$21,658	

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

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

In Thousands

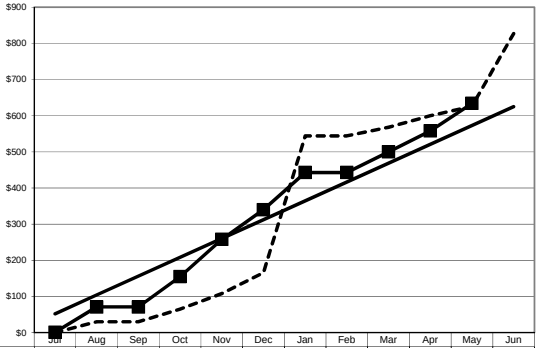
Legislative & Regulatory



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$350	$699	$1,049	$1,399	$1,748	$2,098	$2,448	$2,797	$3,147	$3,497	$3,846	$4,196
FY 18 Actual	$171	$499	$840	$1,058	$1,291	$1,573	$1,817	$2,043	$2,342	$2,650	$2,948	$3,385
FY 19 Actual	$165	$576	$867	$1,200	$1,438	$1,717	$1,974	$2,222	$2,604	$2,879	$3,141	

In Thousands

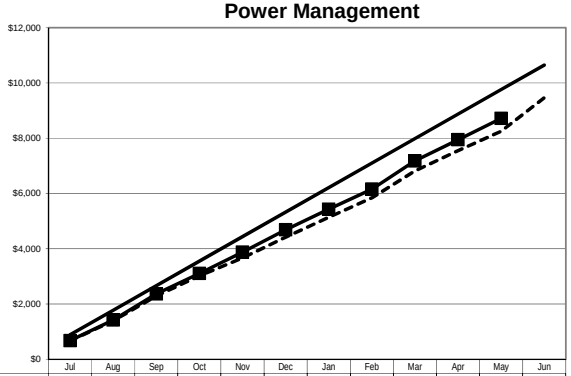
Judicial Action



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$52	$104	$156	$208	$260	$313	$365	$417	$469	$521	$573	$625
FY 18 Actual	$-	$30	$30	$65	$108	$166	$544	$544	$568	$600	$626	$827
FY 19 Actual	$1	$71	$71	$155	$258	$340	$443	$443	$500	$558	$634	

In Thousands

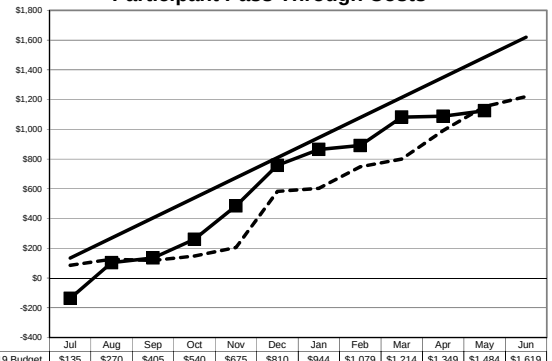
Power Management



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$887	$1,775	$2,662	$3,550	$4,437	$5,325	$6,212	$7,099	$7,987	$8,874	$9,762	$10,649
FY 18 Actual	$670	$1,389	$2,290	$3,021	$3,669	$4,419	$5,139	$5,847	$6,816	$7,553	$8,254	$9,465
FY 19 Actual	$676	$1,422	$2,366	$3,108	$3,877	$4,686	$5,432	$6,157	$7,179	$7,948	$8,718	

In Thousands

Participant Pass Through Costs

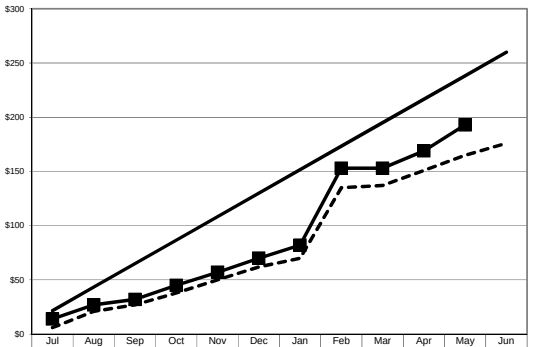


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$135	$270	$405	$540	$675	$810	$944	$1,079	$1,214	$1,349	$1,484	$1,619
FY 18 Actual	$86	$127	$118	$149	$206	$583	$603	$748	$800	$991	$1,153	$1,220
FY 19 Actual	$(136)	$104	$136	$261	$485	$758	$865	$891	$1,082	$1,088	$1,125	

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

In Thousands

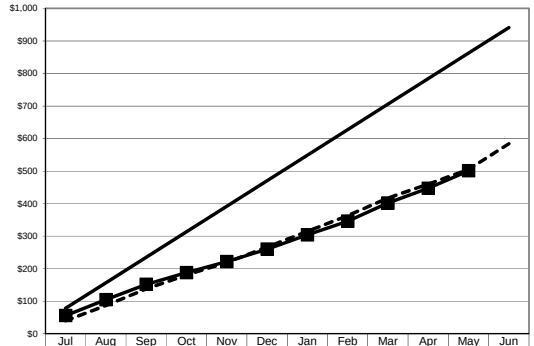
Energy Risk Management



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$22	$43	$65	$87	$108	$130	$152	$173	$195	$217	$238	$260
FY 18 Actual	$6	$21	$27	$38	$50	$62	$70	$135	$137	$151	$165	$176
FY 19 Actual	$14	$27	$32	$45	$57	$70	$82	$153	$153	$169	$193	

In Thousands

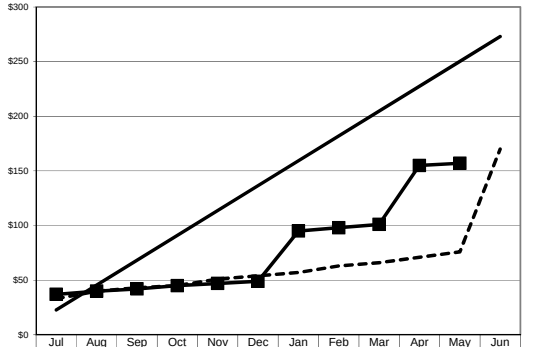
Settlements



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$78	$157	$235	$314	$392	$471	$549	$627	$706	$784	$863	$941
FY 18 Actual	$40	$87	$138	$181	$219	$267	$315	$363	$417	$460	$505	$584
FY 19 Actual	$56	$105	$152	$188	$222	$260	$304	$346	$402	$447	$501	

In Thousands

Integrated Systems Support

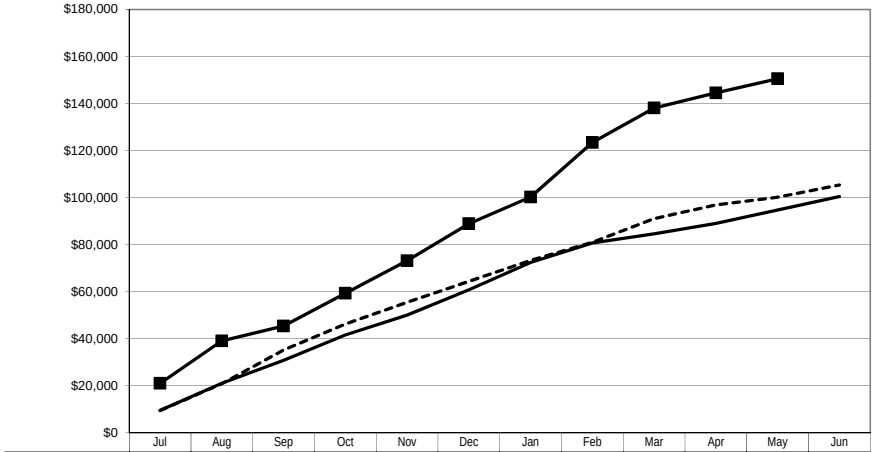


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$23	$46	$68	$91	$114	$137	$159	$182	$205	$228	$250	$273
FY 18 Actual	$33	$40	$43	$45	$51	$54	$57	$63	$66	$71	$76	$170
FY 19 Actual	$37	$40	$42	$45	$47	$49	$95	$98	$101	$155	$157	

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

Plant ISO Energy Sales

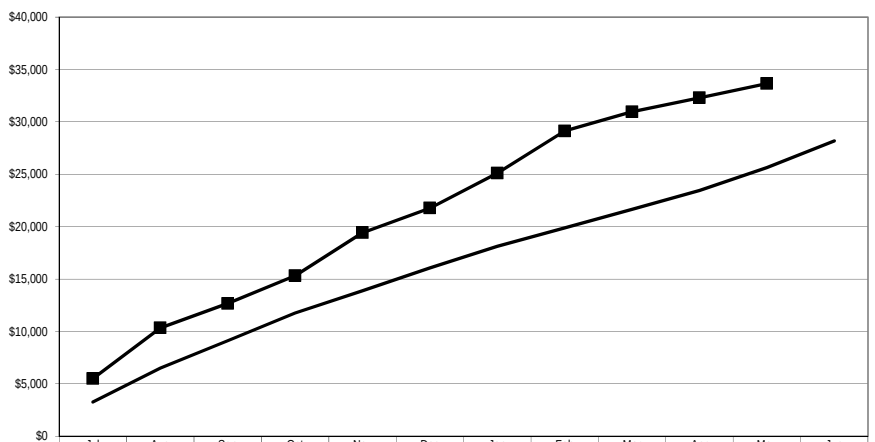
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$9,547	$21,108	$30,828	$41,653	$50,024	$60,819	$72,419	$80,739	$84,576	$88,999	$94,748	$100,456
FY 18 Actual	$9,485	$20,876	$35,203	$46,268	$55,487	$64,413	$73,299	$81,021	$91,076	$96,938	$100,206	$105,381
FY 19 Actual	$21,050	$39,072	$45,395	$59,335	$73,164	$88,909	$100,220	$123,435	$138,094	$144,504	$150,538	

Member Resource ISO Energy Sales

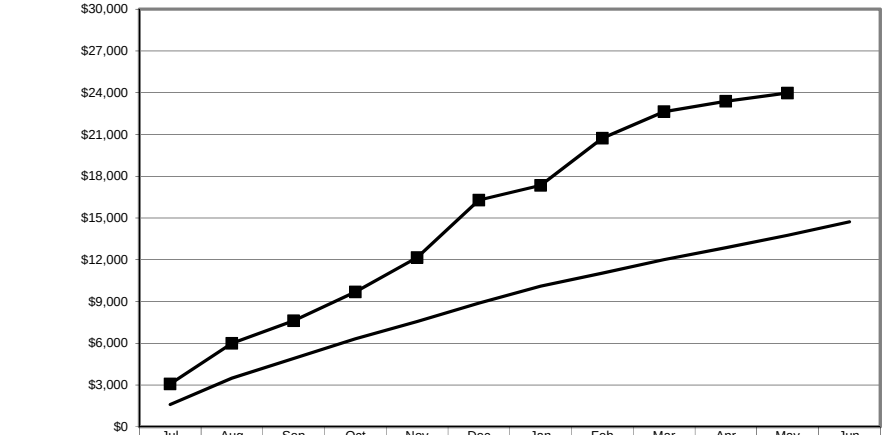
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$3,264	$6,510	$9,119	$11,758	$13,875	$16,070	$18,120	$19,888	$21,645	$23,460	$25,634	$28,187
FY 18 Actual												
FY 19 Actual	$5,502	$10,342	$12,667	$15,316	$19,426	$21,778	$25,106	$29,133	$30,959	$32,300	$33,660	

NCPA Contracts ISO Energy Sales

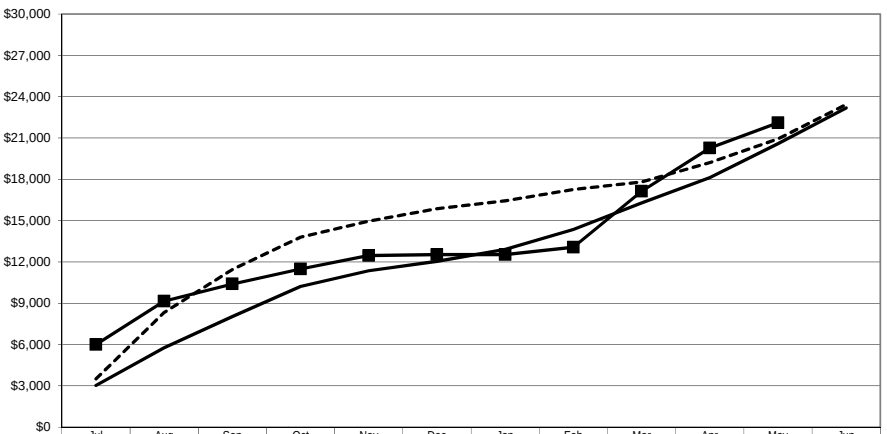
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$1,597	$3,494	$4,909	$6,316	$7,565	$8,877	$10,099	$11,026	$12,011	$12,855	$13,751	$14,720
FY 18 Actual												
FY 19 Actual	$3,080	$5,995	$7,617	$9,687	$12,161	$16,283	$17,346	$20,728	$22,641	$23,389	$23,979	

Western Resource ISO Energy Sales

In Thousands

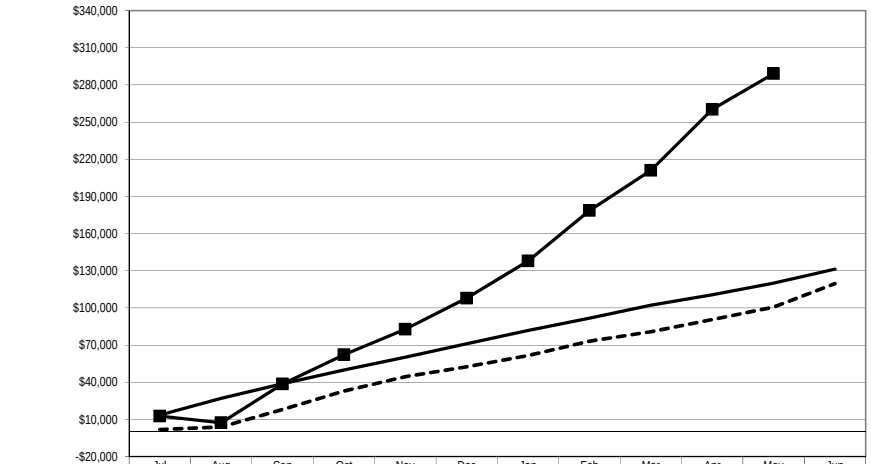


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$3,028	$5,763	$8,038	$10,220	$11,353	$12,039	$12,903	$14,362	$16,291	$18,115	$20,584	$23,183
FY 18 Actual	$3,505	$8,326	$11,449	$13,803	$14,962	$15,866	$16,432	$17,259	$17,808	$19,208	$20,932	$23,434
FY 19 Actual	$5,997	$9,148	$10,400	$11,489	$12,465	$12,529	$12,535	$13,062	$17,130	$20,266	$22,108	

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

Load Aggregation Energy Sales

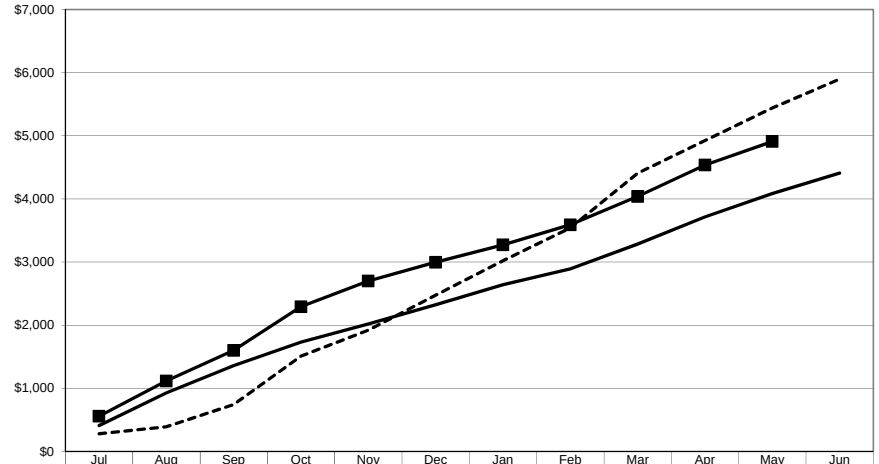
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$13,528	$27,065	$38,825	$49,904	$60,190	$71,054	$81,816	$91,809	$102,278	$110,670	$119,997	$131,329
FY 18 Actual	$1,833	$3,944	$18,054	$32,837	$44,515	$52,543	$61,500	$73,196	$80,814	$90,565	$100,733	$119,643
FY 19 Actual	$12,705	$7,332	$38,580	$62,225	$82,805	$107,890	$137,891	$178,584	$211,072	$260,213	$289,117	

Ancillary Services Sales

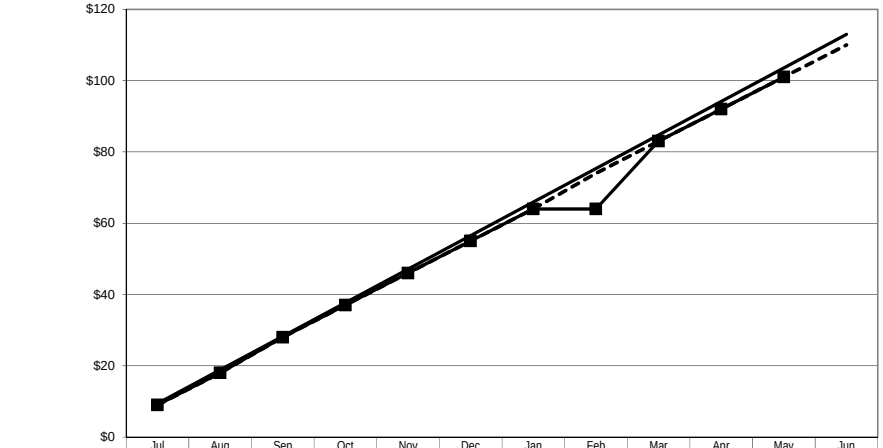
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$409	$927	$1,358	$1,732	$2,020	$2,325	$2,641	$2,893	$3,285	$3,715	$4,084	$4,409
FY 18 Actual	$280	$392	$742	$1,510	$1,921	$2,475	$3,022	$3,541	$4,407	$4,925	$5,442	$5,898
FY 19 Actual	$558	$1,117	$1,601	$2,293	$2,700	$2,997	$3,272	$3,591	$4,039	$4,537	$4,909	

Transmission Sales

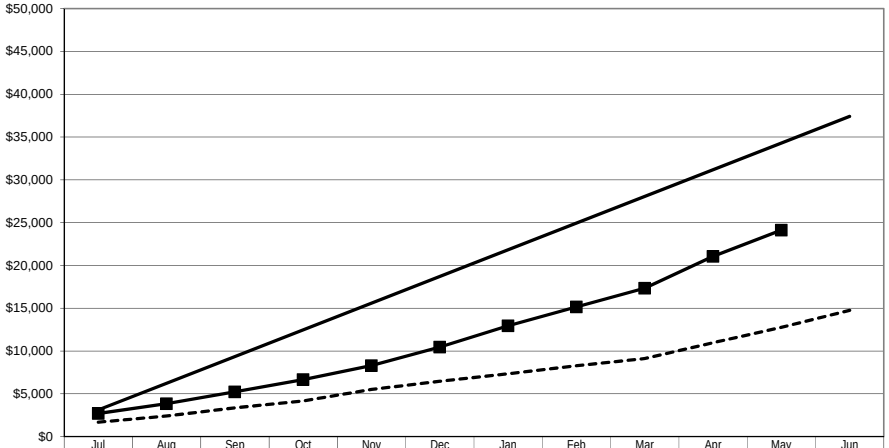
In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$9	$19	$28	$38	$47	$57	$66	$75	$85	$94	$104	$113
FY 18 Actual	$9	$18	$28	$37	$46	$55	$64	$74	$83	$92	$101	$110
FY 19 Actual	$9	$18	$28	$37	$46	$55	$64	$64	$83	$92	$101	

Western Credits, Interest & Other Income

In Thousands



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Budget	$3,118	$6,236	$9,354	$12,471	$15,589	$18,707	$21,825	$24,943	$28,061	$31,178	$34,296	$37,414
FY 18 Actual	$1,678	$2,411	$3,353	$4,158	$5,506	$6,458	$7,339	$8,276	$9,117	$10,966	$12,753	$14,751
FY 19 Actual	$2,696	$3,834	$5,221	$6,652	$8,284	$10,456	$12,944	$15,155	$17,336	$21,059	$24,114	

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

Generation Cost Analysis

$ in thousands

	Geothermal				
	Budget	Actual	$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	$ 17,793	$ 16,554	$ 23.86	$ 1,239	7%
Capital Assets/Spare Parts Inventories	3,267	3,520	5.07	(253)	-8%
Other Costs	8,137	6,520	9.40	1,617	20%
CA ISO Charges	291	905	1.30	(614)	-211%
Debt Service	4,937	4,525	6.52	411	8%
Annual Budget	34,425	32,024	46.16	2,402	7%
Less: Third Party Revenue					
Interest Income	382	387	0.56	(5)	-1%
ISO Energy Sales	26,285	32,518	46.87	(6,233)	-24%
Ancillary Services Sales	-	-	-	-	
Effluent Revenues	700	1,383	1.99	(683)	-98%
Misc	110	103	0.15	7	6%
	27,477	34,391	49.57	(6,914)	-25%
Net Annual Budget Cost to Participants	$ 6,948	$ (2,367)	$ (3.41)	$ 9,316	134%
Net Generation--MWh @ Meter	748,472	693,779			
$/MWh (A)	$ 2.69	$ (9.94)			

	Hydroelectric				
	Budget	Actual	$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	$ 8,685	$ 7,345	$ 10.36	$ 1,340	15%
Capital Assets/Spare Parts Inventories	1,975	1,379	1.94	596	30%
Other Costs	3,238	2,460	3.47	778	24%
CA ISO Charges	2,801	3,836	5.41	(1,035)	-37%
Debt Service	35,157	31,271	44.10	3,886	11%
Annual Budget	51,857	46,291	65.28	5,566	11%
Less: Third Party Revenue					
Interest Income	670	511	0.72	159	24%
ISO Energy Sales	20,783	38,155	53.81	(17,372)	-84%
Ancillary Services Sales	3,048	2,276	3.21	771	25%
Misc	-	1	0.00	(1)	
	24,501	40,943	57.74	(16,442)	-67%
Net Annual Budget Cost to Participants	$ 27,356	$ 5,348	$ 7.54	$ 22,008	
Net Generation--MWh @ Meter	506,308	709,060			
$/MWh (A)	$ (15.41)	$ (36.56)			

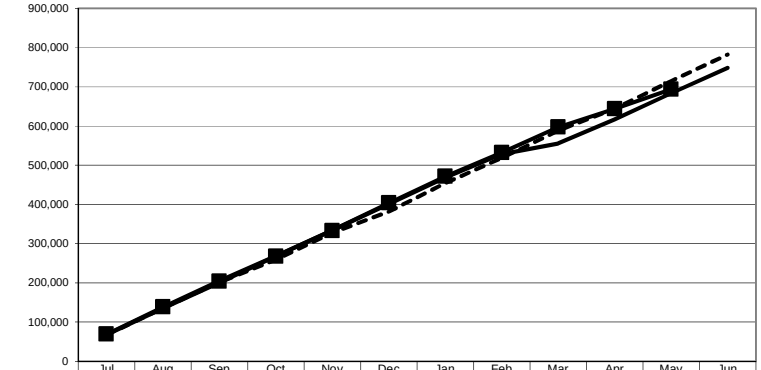
Footnotes:

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

MWhs Generated

In MWh

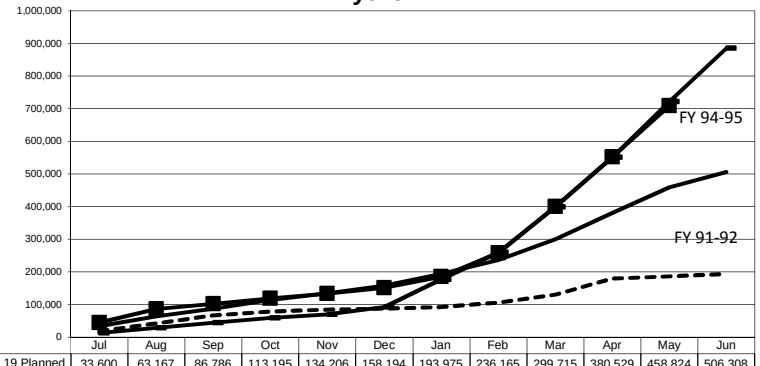
Geothermal



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Planned	67,853	135,558	201,007	268,489	333,722	401,054	468,238	528,786	555,594	617,155	683,967	748,472
FY 18 Actual	67,585	135,491	201,912	259,818	327,670	381,933	454,619	518,755	588,499	644,634	715,078	782,447
FY 19 Actual	69,366	138,563	204,624	268,226	333,341	403,913	471,674	531,877	597,587	643,997	693,779	

In MWh

Hydro



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Planned	33,600	63,167	86,786	113,195	134,206	158,194	193,975	236,165	299,715	380,529	458,824	506,308
Wet	12,676	28,667	44,047	58,599	69,461	91,796	176,896	259,973	398,950	551,071	721,320	885,279
Dry	18,574	41,592	66,527	78,750	84,000	87,598	91,693	105,353	130,546	179,718	185,948	193,288
FY 19 Actual	44,511	85,850	101,947	118,460	133,163	150,843	185,233	257,906	400,261	552,139	709,060	

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

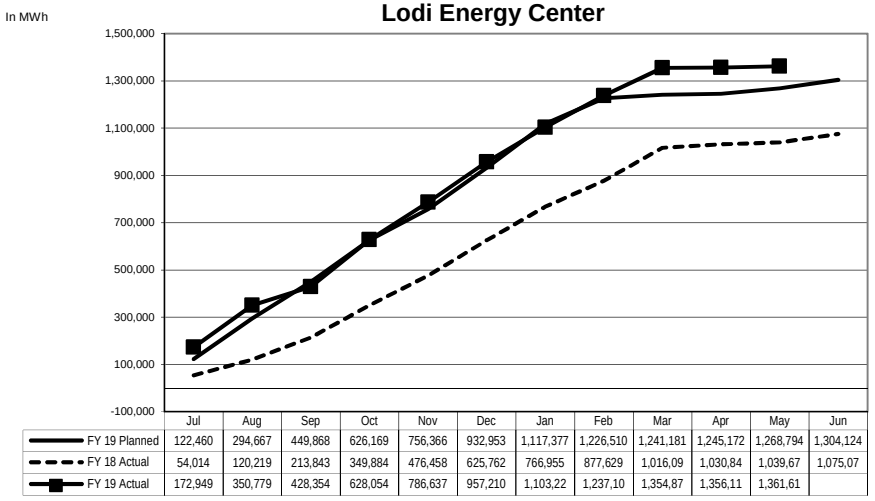
Generation Cost Analysis

	Lodi Energy Center				
	Budget	Actual	$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	$ 13,965	$ 12,925	$ 9.49	$ 1,040	7%
Fuel	33,092	45,118	33.14	(12,026)	-36%
AB 32 GHG Offset	-	-	-	-	0%
CA ISO Charges and Energy Purchases	5,665	5,199	3.82	465	8%
Capital Assets/Spare Parts Inventories	1,613	1,387	1.02	226	14%
Other Costs	3,302	2,780	2.04	522	16%
Debt Service	26,080	23,907	17.56	2,173	8%
Annual Budget	83,717	91,316	67.06	(7,600)	-9%
Less: Third Party Revenue					
Interest Income	386	626	0.46	(240)	-62%
ISO Energy Sales	52,415	75,902	55.74	(23,487)	-45%
Ancillary Services Sales	1,029	1,552	1.14	(524)	-51%
Transfer Gas Credit	-	-	-	-	0%
Misc	-	2	0.00	(2)	0%
	53,829	78,082	57.35	(24,253)	-45%
Net Annual Budget Cost to Participants	$ 29,887	$ 13,234	$ 9.72	$ 16,653	56%
Net Generation--MWh @ Meter	1,304,124	1,361,619			
$/MWh (A)	$ 2.92	$ (7.84)			

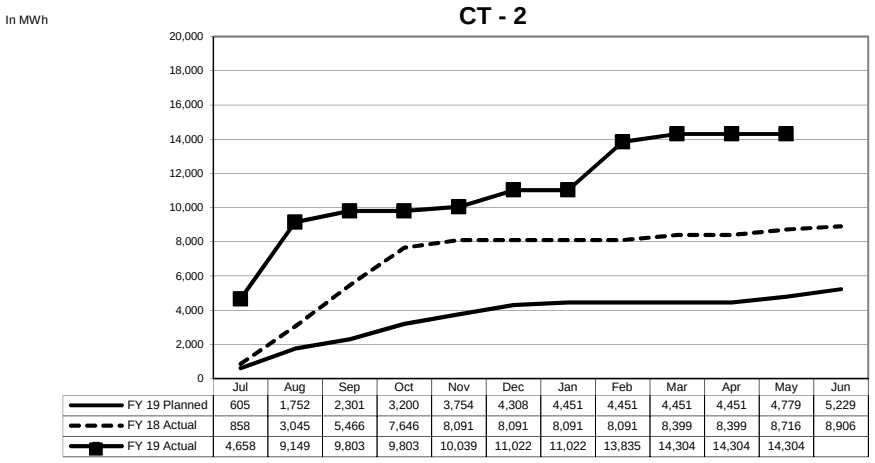
	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	$ 1,481	$ 1,303	$ 91.06	$ 178	12%
Fuel and Pipeline Transport Charges	977	1,530	106.98	(553)	-57%
Capital Assets/Spare Parts Inventories	60	31	2.15	29	49%
Other Costs	506	376	26.28	130	26%
CA ISO Charges	2	152	10.61	(150)	-7395%
Debt Service	5,717	5,240	366.36	476	8%
Annual Budget	8,743	8,631	603.44	112	1%
Less: Third Party Revenue					
Interest Income	109	106	7.38	3	3%
ISO Energy Sales	401	2,092	146.23	(1,690)	-421%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	990	2,266	158.45	(1,276)	-129%
Misc	-	-	-	-	0%
	1,500	4,464	312.07	(2,964)	-198%
Net Annual Budget Cost to Participants	$ 7,243	$ 4,168	$ 291.37	$ 3,075	42%
Net Generation--MWh @ Meter	5,229	14,304			
$/MWh (A)	$ 291.87	$ (74.99)			

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

MWhs Generated



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Planned	122,460	294,667	449,868	626,169	756,366	932,953	1,117,377	1,226,510	1,241,181	1,245,172	1,268,794	1,304,124
FY 18 Actual	54,014	120,219	213,843	349,884	476,458	625,762	766,955	877,629	1,016,09	1,030,84	1,039,67	1,075,07
FY 19 Actual	172,949	350,779	428,354	628,054	786,637	957,210	1,103,22	1,237,10	1,354,87	1,356,11	1,361,61	



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Planned	605	1,752	2,301	3,200	3,754	4,308	4,451	4,451	4,451	4,451	4,779	5,229
FY 18 Actual	858	3,045	5,466	7,646	8,091	8,091	8,091	8,091	8,399	8,399	8,716	8,906
FY 19 Actual	4,658	9,149	9,803	9,803	10,039	11,022	11,022	13,835	14,304	14,304	14,304	

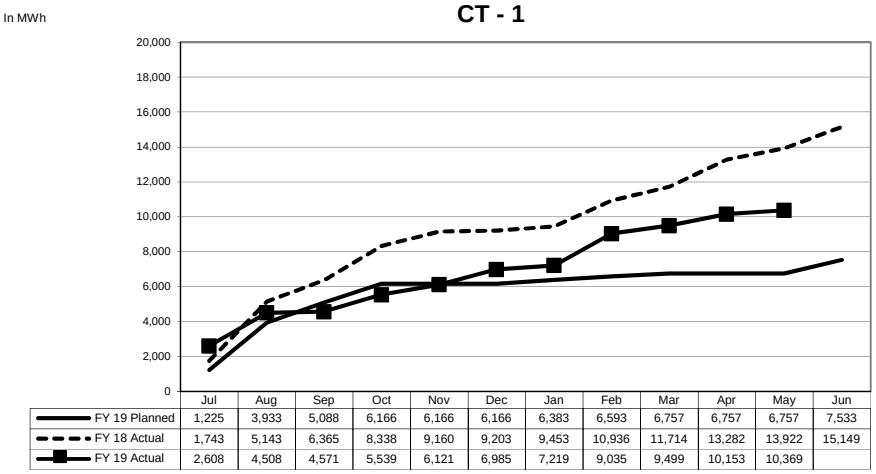
Annual Budget
NCPA Generation Detail Analysis By Plant
As of May 31, 2019

Generation Cost Analysis

	Combustion Turbine No. 1				
	Budget	Actual	$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	$ 1,560	$ 2,371	$ 228.63	$ (810)	-52%
Fuel and Pipeline Transport Charges	497	1,208	116.50	(711)	-143%
Capital Assets/Spare Parts Inventories	5,465	3,629	349.99	1,836	34%
Other Costs	580	448	43.23	132	23%
CA ISO Charges	3	465	44.83	(462)	-15845%
Debt Service	-	-		-	
Annual Budget	8,106	8,121	783.18	(15)	0%
Less: Third Party Revenue					
Interest Income	-	1		(1)	
ISO Energy Sales	572	1,872	180.50	(1,299)	-227%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	16	1.51	(16)	0%
	572	1,889	182.01	(1,316)	-230%
Net Annual Budget Cost to Participants	$ 7,533	$ 6,232	$ 601.03	$ 1,301	17%
Net Generation--MWh @ Meter	7,533	10,369			
$/MWh (A)	$ 1,000.05	$ 601.03			

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

MWhs Generated



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 19 Planned	1,225	3,933	5,088	6,166	6,166	6,166	6,383	6,593	6,757	6,757	6,757	7,533
FY 18 Actual	1,743	5,143	6,365	8,338	9,160	9,203	9,453	10,936	11,714	13,282	13,922	15,149
FY 19 Actual	2,608	4,508	4,571	5,539	6,121	6,985	7,219	9,035	9,499	10,153	10,369	