A photograph of several high-voltage power line towers against a sunset sky, with the sun visible on the right side. The image is partially obscured by a blue diagonal graphic element.

2020

BUSINESS PROGRESS REPORT

JUNE



Northern California Power Agency
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Table of Contents

Generation Costs & Reliability	1
Environmental, Health & Safety Projects	4
Power Management/NCPA Market Results	5
Debt & Financial Management	15
NCPA Bills & Settlements	17
Political Arena State/Federal/Western Programs	18
Human Resources	19
Annual Budget FY to Date	20
Budget vs. Actual by Major Area	21
Generation Resources Analysis by Source	22
Management Services Analysis by Source	23
Third Party Revenue Analysis by Source	25
Generation Detail Analysis by Plant	27

Generation Costs & Reliability

Combustion Turbine Project

Unit Operation for May 2020

Unit	Availability		Production			Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	254.5	MWh	CAISO / CAISO
	100.0%	0.0%	Unit 2	0.0	MWh	
Curtailments, Outages, and Comments:						
Unit 1: Normal operation.						
Unit 2: 5/1 - 5/31: Alameda CT U2 o/s for annual maintenance, OMS 8492990						
Unit	Availability		Production			Reason for Run
CT1 Lodi	98.4%		252.8 MWh			CAISO
Curtailments, Outages, and Comments:						
5/26 @ 2120-2355: Bleed valve trouble, OMS 8659825						
5/27 @ 2030-2313: Bleed valve trouble, OMS 8664982						
5/30 @ 0958-1644: Bleed valve trouble, OMS 8678133						
Unit	Availability		Production			Reason for Run
CT2 STIG	96.8%		0.0 MWh			CAISO
Curtailments, Outages, and Comments:						
5/1 - 5/31: STIG o/s for annual maintenance, OMS7821209						
Unit	Availability		Production			Reason for Run
LEC	#N/A		#N/A MWh			#N/A
Curtailments, Outages, and Comments:						
5/1 - 5/31: LEC turbine failure, OMS 8344634						

Maintenance Summary – Specific per asset above.

Geothermal Facilities

Availability/Production for May 2020

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	100 %	23,945 MWh	U1 had no outages for the month
Unit 2	100 %	*25,698 MWh	U2 had no outages for the month
Unit 3	N/A %	N/A	Unit 3 remains out of service.
Unit 4	56.25 %	16,489 MWh	Unit 4 was out of service from 5/1/20 until 1400 5/14/20 for turbine rotor replacement, diaphragm repair and vibration analysis/adjustment
Southeast Geysers Effluent Pipeline	93.01 %	181.4 mgallons	Average flow rate: 4,057 gpm
Southeast Solar Plant	N/A	92,262 KWh	Year-to-date KWh: 2,724,932
Bear Canyon Pump Station Zero Solar	N/A	104,237 KWh	Year-to-date KWh: 4,076,440

* Accounts for an additional 1,720 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

Hydroelectric Project

Availability/Production for May 2020

Units	Availability	Net Electricity Generated	Out-of-Service
Collierville Unit 1	100%	23858 MWh	No Outages to Report.
Collierville Unit 2	100%	32960 MWh	No Outages to Report.
Spicer Unit 1	68.98 %	0 MWh	NSM1 was out of service on 5/1/20 to 5/8/20 from 0000 to 1908 for PG&E Work at Tiger Creek, and on 5/11/20 to 5/12/20 from 1505 to 1152 for a Cooling Water Leak, and on 5/18/20 to 5/19/20 from 0900 to 0755 for 12" HBV hydraulic system trouble.
Spicer Unit 2	71.77 %	0 MWh	NSM2 was out of service on 5/1/20 to 5/8/20 from 0000 to 1908 for PG&E Work at Tiger Creek, and on 5/18/20 to 5/19/20 from 0900 to 0755 for 12" HBV hydraulic system trouble.
Spicer Unit 3	33.35 %	75.23 MWh	NSM3 was out of service on 5/1/20 to 5/11/20 from 0000 to 0910 for PG&E Work at Tiger Creek, and on 5/18/20 to 5/28/20 from 0900 to 1540 for 12" HBV hydraulic system trouble.

Operations & Maintenance Activities:

- CMMS work orders
- NSM Powerhouse 12" HBV Hydraulic Cylinder Rebuild
- 230 KV Vegetation Management
- Preparation for recreation season(NSM Campground and Water system)

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

- There were no Cal OSHA recordable, Lost Time, or vehicle accidents in the month of March.
- 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 23, 2020.
- 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 2020 Generation Services Safety Report

	Hydro	GEO	CT Group *	NCPA HQ **
Cal OSHA Recordable (this month)	0	0	0	0
Cal OSHA Recordable (calendar year)	0	0	0	0
Days since Recordable	339	669	1,874	6,858
Work Hours Since Last Recordable	30,083	140,643	279,849	2,535,212
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	4,608	1,737	9,778	5,871
Work Hours without LTA	419,980	357,618	690,393	2,157,230
Vehicle Incident (month)	0	0	0	0
Vehicle Incident (calendar year)	0	0	1	0

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

** NCPA HQ: Roseville employees at the Main Office

Data originates from OSHA logs, HR records and payroll information.
Days and Hours are calculated through pay period ended May 23, 2020.

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 2020 Data

	May 2020		Calendar Year 2020	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	417.87 5/26 @1800	178,729	417.87 5/26 @1800	900,746
SVP	555.36 5/27 @1400	316,656	555.36 5/27 @1400	1,535,708
MSSA	960.71 5/26 @ 1800	495,385	960.71 5/26 @ 1800	2,436,454

Last Year 2019 Data*

	May 2019		Calendar Year 2019	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	315.69 5/31 @1800	183,122	478.77 8/15 @ 1700	928,198
SVP	473.72 5/31 @1500	305,645	587.78 6/11 @1600	1,497,072
MSSA	787.41 5/31 @ 1700	488,767	1057.99 8/15 @ 1700	2,425,270

* Last year's data added for comparison purposes only

System Peak Data

	All Time Peak Demand	2020 Peak Demand
NCPA Pool	517.83 MW on 7/24/06 @ 1500	417.87 5/26 @ 1800
SVP	587.78 MW on 6/11/19 @ 1600	555.36 5/27 @1400
MSSA	1070.79 MW on 9/1/17 @ 1700	960.71 5/26 @ 1800

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

NCPA Deviation Band Performance		
	May 2020	Calendar Year 2020
MSSA % Within the Band	98.34%	96.51%

- Dispatch and SC group continue operating in split mode occupying both Roseville HQ and DRC
- Spicer Meadows:
 - May 1 - 8, units separated from the grid for PG&E work at Tiger Creek
 - May 11 – 12, Unit 1 o/s to repair cooling water system leak
 - May 18 - 28, Unit 3 unavailable while repairs made to 12” HBV hydraulic system
- Geothermal Units:
 - May 14, Unit 4 returned to service from annual maintenance/turbine replacement project
 - May 20, Unit 2 off line for about 3 hours due to DCS trouble
- Lodi Energy Center:
 - May 1 - 31, Unit remains o/s for combustion turbine replacement. ETR 6/30
- Alameda CTs:
 - May 1 – 31, Unit 2 remains on annual maintenance outage
- Lodi CT:
 - May 26 and 27, unit return to service was delayed a couple hours after runs, due to compressor bleed valve trouble
 - May 31, unit forced o/s for 7 hours for repairs to resolve bleed valve issue
- Collierville Units:
 - No curtailments
- STIG:
 - May 1 - 31, Unit o/s for annual maintenance

Pooling, Portfolio Planning & Forecasting

- NCPA Pool load during May 2020 was 178,601 MWh, or 95.5% of forecast. The stay-at-home mandate issued on March 19th continued to change load patterns across the state. Pool load through June is expected to be closer to normal compared to the same period a year ago, as economic and weather-related demand increases.
- Lodi Energy Center (LEC) did not operate during May 2020. LEC is expected to be offline through June 30, 2020 except for testing.
- During May 2020, 3.70" of rain was recorded at the Big Trees gauge. Average May Big Trees precipitation is 2.62".
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) has been reduced from \$75/MWh to \$60/MWh.
- NSMR storage as of May 31, 2020 was at 144,841 acre feet. The historical average NSMR storage at the end of May is 139,965 acre feet. As of June 16, 2020 NSMR storage is 143,988 acre feet. The current NCPA Pool share of NSMR storage is 73,585 acre feet.
- Combined Calaveras Project generation for the Pool in May 2020 totaled 29.0 GWh, down from 39.9 GWh in April 2020. The Pool's 29.0 GWh in May 2020 was greater than the pre-month forecast of 14.2 GWh – due to higher than expected side flows during May.
- Western Base Resource (BR) deliveries for the Pool during May 2020 were 79,422 MWh, including Displacement energy totaling 7,804 MWh. Energy received was 97.8% of the pre-month forecast as runoff hit maximum levels. Western's forecast for the pool's share of June generation is 90,973 MWh.
- The PG&E Citygate gas index averaged \$2.48/MMBtu for delivery on June 10, 2020, below the average PG&E gas price during May of \$2.53/MMBtu. Gas prices have decreased as high storage works to offset production curtailments. The June 2020 PG&E Citygate Bidweek price is \$2.545/MMBtu, up two cents from the May Bidweek price.
- Day-Ahead NP15 electricity prices averaged \$18.65/MWh (HLH) and \$18.16 (LLH) during May 2020, with evening ramp hour prices reaching as high as \$89 at TH_NP15 and falling close to or below zero on most weekends as low demand and heavy renewables generation, wind in particular, along with hydro generation, pushed prices lower.

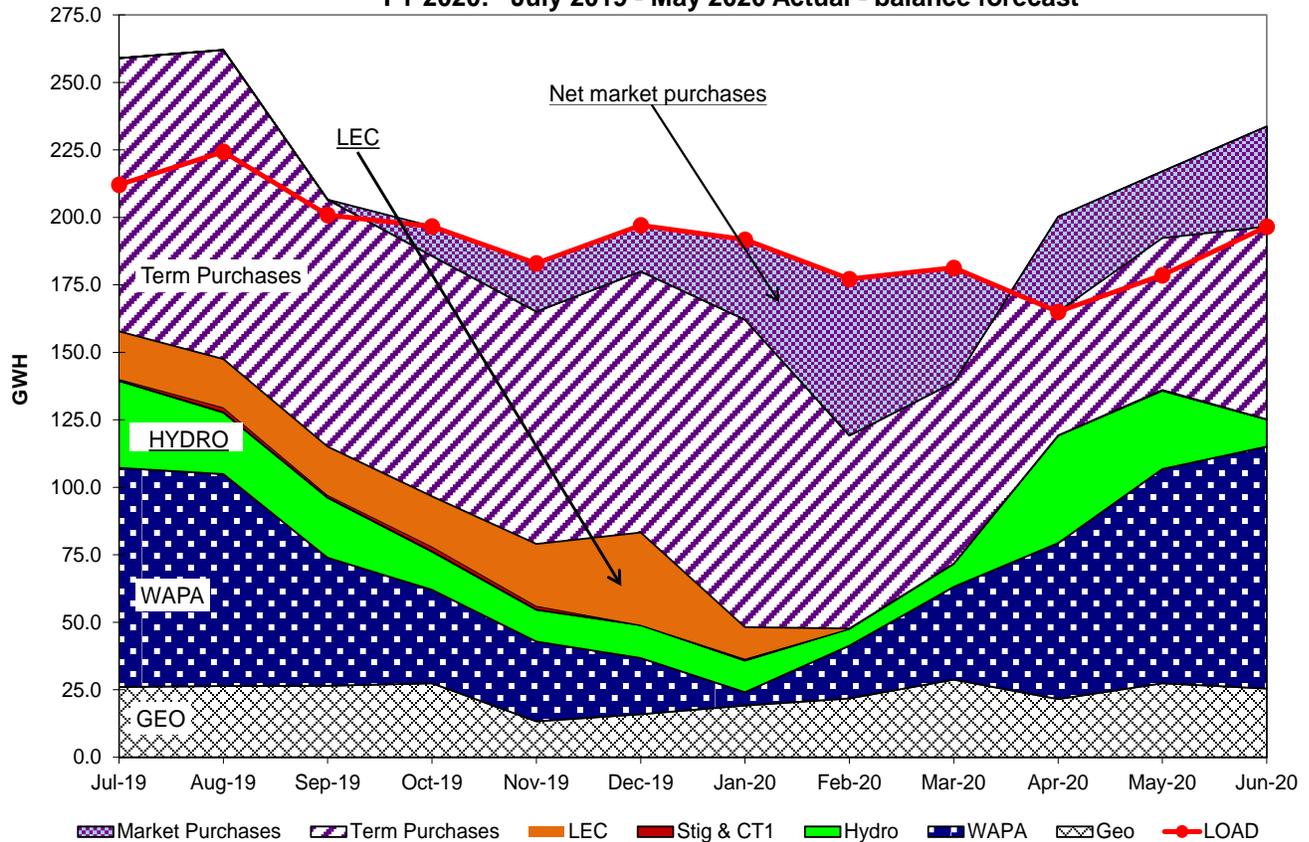
NCPA Pool Loads & Resources Value Summary								
Peak and Energy Summary					Estimated Production Costs		Cost of Serving Demand	
May-20								
	Coincident Peak (MW)	Total MWh	Pre-Month Forecast Values	Avg. MW	NCPA Pool		Totals	Avg (\$/MWh)
	May-26-20 Hour 18				Cost/Revenue (Estimate)	Variable Cost (\$/MWh)		
Demand	417.9	178,601	186,994	240.1	N/A	N/A		
WAPA	-	79,422	81,182	106.8	\$ 1,826,020	\$ 22.99	\$ 3,724,037	\$ 20.85
Geothermal	-	27,371	24,251	36.8	520,057	19.00		
Hydro	-	28,995	27,779	39.0	173,969	6.00		
Stig & CTs	-	292	-	0.4	4,124	14.10		
LEC	-	-	-	-	-	32.38		
Contracts	-	80,988	99,086	108.9	4,794,338	59.20	\$ 6,021,563	\$ 33.72
Market - Net	417.9	(38,468)	(45,304)	(51.7)	(758,778)	19.73		
(Net Sales = Negative)								
Net Total	417.9	178,601	186,994	240.1	\$ 6,559,730	\$ 33.72		

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 5/1/2020 (\$/MWh)	6/12/2020 (\$/MWh)	
Jul-19	212,102	\$ 33.30	\$ 56.98	Jun-20	\$ 27.71	\$ 28.85
Aug-19	224,328	\$ 34.79	\$ 37.80	Jul-20	40.08	36.47
Sep-19	200,894	\$ 37.46	\$ 40.97	Aug-20	43.94	41.70
Oct-19	186,955	\$ 38.43	\$ 33.39	Q3 2020	\$ 41.14	\$ 38.67
Nov-19	182,993	\$ 43.69	\$ 40.97	Q4 2020	42.12	40.16
Dec-19	182,993	\$ 43.69	\$ 48.09	Q1 2021	42.26	39.07
Jan-20	191,771	\$ 32.76	\$ 39.71	CY2021	\$ 41.23	\$ 39.42
Feb-20	177,169	\$ 27.58	\$ 46.65	CY2022	38.72	38.28
Mar-20	181,339	\$ 27.90	\$ 40.59	CY2023	37.59	36.71
Apr-20	165,033	\$ 22.78	\$ 35.05	CY2024	36.91	36.04
May-20	178,601	\$ 20.85	\$ 33.72	CY2025	36.68	35.83
Jun-20				CY2026	36.52	35.67

NOTES TO SUMMARY TABLE:

- Peak and Energy Summary:**
- * Monthly generation summary of Coincidental Peak (hour in which pool demand peaked), total MWh for the month, and pre-month forecasted values for report period.
 - * Generation totals are for POOL SHARE of the projects.
 - * Hydro totals include Collierville and Spicer generation.
- Estimated Production Costs:**
- * Fixed project costs not included except for WAPA, where total month's project costs are used to calculate the average unit cost.
 - * STIG and CT costs include forward natural gas and basis hedge transactions.
 - * STIG & CT costs reflect \$2.60 and \$1.62/MWh variable O&M costs per 6-12-06 GSCA.
- Cost of Serving Demand:**
- * Compares price of meeting total monthly demand with (1) Hourly pool market clearing price; (2) Variable cost of pool gen. Pool Gen is sum of estimated costs divided by sum of generation.

NCPA POOL RESOURCES
FY 2020: July 2019 - May 2020 Actual - balance forecast



Industry Restructuring, Contracts and Interconnection Affairs

Resource Adequacy Compliance Filings

- NCPA made the following Resource Adequacy compliance filings with the CAISO for the compliance period August 2020:
 - Monthly System Resource Adequacy Demonstration (filed June 17, 2020)
 - Monthly Supply Plan (June 17, 2020)

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:

Hybrid Resources

- Draft tariff language posted on May 26. Meeting scheduled for June 18.
- As generation developers become increasingly interested in pairing energy storage with existing or proposed generation, this initiative will explore how such “hybrid” generation resources can be registered and configured to operate within the ISO market. This initiative will develop solutions allowing developers to maximize the benefits of their resource’s configuration. Hybrid resource configurations also raise new operational and forecasting challenges that ISO plans to address during this initiative.
- Hybrid Resource defined as a resource type comprised of two or more fuel-type projects, or a combination of multiple different generation technologies that are physically and electronically controlled by a single owner/operator and scheduling coordinator (SC) behind a single point of interconnection (“POI”) that participates in the ISO markets as a single resource with a single market resource ID, is optimized by the CAISO in the market as a single resource and is metered and telemetered at the high side of the interconnection transformer. Hybrid resources are not eligible to be variable energy resources meaning that they are not authorized to generate above DOT similar to solar and wind resources.
- Co-located Resource defined as a resource type comprised of two or more-fuel type projects, or a combination of multiple different generation technologies behind a single point of interconnection that participates in the ISO markets as different resources with different market resource IDs, is optimized by the scheduling coordinator’s bids or self-schedule in the market and each resource is individually metered and telemetered. Co-located resources may be comprised of one or more variable energy resources and resources that are not variable energy resources.

Variable Operations and Maintenance Cost Review

- Draft final proposal due 8/10/2020.
- Through this initiative, developed from the existing variable operations and maintenance cost review recurring stakeholder process, the ISO will update the operations and maintenance cost framework by providing definitions for operations and maintenance cost components, updating variable operations adder values, and calculating default maintenance adders.
- Proposes breaking out Variable O&M to separate Variable Operations costs (e.g., chemicals) and Default Maintenance adders.

- NCPA already has negotiated Maintenance Adders for LEC and CT1. Not applicable for STIG.

Extended Day-Ahead Market

- Pending Day Ahead Enhancements initiative developments.
- This initiative will develop an approach to extend participation in the Day-Ahead market to the Western Energy Imbalance Market (EIM) entities in a framework similar to the existing EIM approach for the real-time market, rather than requiring full integration into the California ISO balancing area. The extended Day-Ahead market (EDAM) will improve market efficiency by integrating renewable resources using Day-Ahead unit commitment and scheduling across a larger area.
- CAISO responded to stakeholder concerns and is extending the process to include more workshops to deal with issues such as transmission cost allocation.
- February workshops focused on transmission provisions, resource sufficiency evaluations, and congestion revenue rights. The package of topic was described as bucket 1. With two more contentious buckets to follow, a fall 2021 go live is unlikely.
- CAISO and EIM participants continue to discuss terms and products conceptually without offering much detail and discussion of implementation costs is non-existent.

Resource Adequacy Enhancements

- June 10th meeting reviewed:
 - Portfolio analysis and UCAP needs assessment methodology
 - Transition to UCAP paradigm effective 2023 RA year
 - Aligning CAISO BA outage tracking with existing RC outage definitions
 - “Forced” and “Urgent” outages during top 20% tightest supply cushion hours will count against UCAP with minimal force majeure exemptions such as wildfire.
 - UCAP calculations for existing and new resources
- NCPA will submit comments generally in support of proposals with exception to removal of blanket “Transmission Induced” outage type exemption
- July 7 – 5th revised straw proposal
- July 14 - meeting
- 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 for System capacity and replacing it with “less complicated” counting rules similar to eastern RTOs, import eligibility, exemptions, and redefining Planned and Forced outages.
- The fourth revised straw proposal was published last month and a stakeholder meeting took place. New components are two options for modifying the planned outage process:
 - Option 1: CalCCA Proposal - Develop Planned Outage Planning Reserve Margin for off peak months and allow all planned outages without substitution.
 - Option 2: SCE - CAISO develops substitution market

CAISO seemed to favor option 1 by expressing concerns with complexity and lack of incentives to show capacity under option 2. NCPA's primary issue with current process is CAISO's ability to cancel outages and then refer SCs to FERC if resubmitting outage as forced. The primary issue is that "forced" designation is set by the fact that it was submitted seven or fewer days prior to a given trade date. SCs should be able to submit forced outages further out and not be subject to denial, rather only be subject to reduced UCAP.

- NCPA will continue to advocate for must offer obligation exemption due to existing LF-MSS balancing requirements.

Day-Ahead Market Enhancements

- In latest proposal, CAISO is dropping new Reliability Energy product due to cost formation issues with bid in energy while retaining Reliability Up and Down Capacity. This is an improvement over current Residual Unit Capacity process in that it allows for procurement of downward capacity. Latest proposal does not address Load Following Metered Subsystem specific issues such as Reliability Capacity exemption and Imbalance Reserve Product settlements netting. We will continue to press on those issues.
- This initiative will explore new Day-Ahead products that will address ramping needs between intervals and uncertainty that can occur between the Day-Ahead and real-time markets.
- CAISO reviewed the need for new products along with data supporting uncertainty concerns:
 - Uncertainty between Day-Ahead and real-time market has increased from 2017 to 2019 and CAISO operators are addressing this development with out of market actions which disrupts market efficiency
 - Historically, generators had higher certainty to know if they would be scheduled in real-time
 - Due to uncertainty and changing resource fleet, commitment decisions are no longer necessarily known
 - Gas, hydro, storage, and imports need to cover costs to be available for dispatch in real-time – this will be accomplished with imbalance reserves
- Two new products:
 - Imbalance Reserve Product (IRP) will be designed to address granularity and uncertainty between Day-Ahead and real-time markets:
 - Hourly product; 15-minute dispatchable; Biddable; Covers granularity difference and uncertainty between DAM and FMM; All awards are co-optimized and settled simultaneously; DAM has no energy price formation issue because the market solves all hours in a single optimization; Stepped relaxation parameters (proposed)
 - Reliability Capacity: replaces RUC process used to address gaps between bid in demand and forecast demand.

Maximum Import Capability Stabilization

- In latest round of comments, NCPA advocated for the need to increase MIC allocations due to pending significant losses of capacity internal generation retirements. NCPA also advocated that a resource aggregation such as CVP should meet resource specification import RA requirement.

- MIC required for resource adequacy imports. NCPA Load-Following MSS is exempt from MIC, however, CAISO assigns NCPA's pre-RA contracts MIC in order to force it to fit its model. In comments, NCPA is advocating for pre-RA contracts and extension of such contracts to maintain grandfathering treatment in MIC allocation process.

Transmission Access Charge Structure Enhancements

- This initiative considers 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 determinant consisting of volumetric and peak demand functions in order to address cost shifts as well as the full impact of high coincident peak demand, low load factor UCD areas that have relatively lower volumetric use compared to high load factor areas. It received general support from the market and will be presented to the CAISO board in Q4 2020 or 2021, and targeted implementation in October 2021. The CAISO is working to align the TAC Board consideration with the Extended Day-Ahead Market (EDAM) process so they are aligned to the extent possible. The TAC proposal may possibly need to be updated if the EDAM proposal aspects related to transmission issues drive changes to the TAC initiative.
- 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.
- Initiative is currently on hold pending developments from EDAM initiative.

Western

Western Base Resource Tracking (NCPA Pool)

Western Base Resource Tracking - NCPA Pool							
	Actual			Costs & Rates			
	BR Forecast ¹ (MWh)	BR Delivered (MWh)	Difference (MWh)	Base Resource & Restoration Fund (\$)	Monthly Cost of BR ² (\$/MWh)	CAISO LMP Differential ³ (\$/MWh)	12-Mo Rolling Avg. Cost of BR ⁴ (\$/MWh)
Jul-19	95,615	81,155	(14,460)	\$2,134,816	\$ 26.31	\$ (0.02)	\$ 30.98
Aug-19	75,245	78,474	3,229	\$2,134,816	\$ 27.20	\$ (0.02)	\$ 30.65
Sep-19	46,290	47,422	1,133	\$2,049,840	\$ 43.23	\$ (0.17)	\$ 31.31
Oct-19	23,193	54,290	31,097	\$962,107	\$ 17.72	\$ 0.06	\$ 30.64
Nov-19	7,602	29,611	22,009	\$962,107	\$ 32.49	\$ 0.04	\$ 30.47
Dec-19	6,564	20,786	14,222	\$582,148	\$ 28.01	\$ 0.11	\$ 29.95
Jan-20	9,331	7,749	(1,582)	\$582,148	\$ 75.13	\$ 0.15	\$ 29.75
Feb-20	17,163	19,458	2,295	\$769,511	\$ 39.55	\$ (0.00)	\$ 29.59
Mar-20	27,643	34,397	6,754	\$962,107	\$ 27.97	\$ 0.03	\$ 28.70
Apr-20	52,877	57,797	4,920	\$1,826,020	\$ 31.59	\$ 0.09	\$ 27.68
May-20	84,464	79,422	(5,042)	\$1,826,020	\$ 22.99	\$ 0.47	\$ 28.01
Jun-20	90,039	-	(90,039)	\$1,826,020	\$ 20.28	\$ -	\$ 27.89

1/ As forecasted in NCPA 19/20 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.

- NCPA Pool received 79,422 MWh Base Resource (BR) energy in May 2020. This includes 7,804 MWh of Displacement Energy for an estimated savings of \$47,288 or about \$6.00/MWh.
- Pool Members' total savings under Market Efficiency Enhancement Agreement (MEEA) for Pool Members was approximately \$33,800 in May 2020. FY 2020 so far shows a net MEEA savings of \$39,262. There has been a few months with negative savings due to lower congestion prices for import at COTP as opposed to MEEA prices. Despite MEEA Benefits are negative June 2019 through September 2019 and February 2020, there are significant benefits for MEEA prices since the program started in December 2015. NCPA will continue to closely monitor MEEA Benefits.

2025 Base Resource Contract

- The contract service period begins January 1, 2025 and shall remain in effect through December 31, 2054, subject to prior termination. The contract permits termination or reduction of Base Resource share for any reason through June 30, 2024.
- Publication of the final contract has been delayed due to the COVID-19 work interruption. WAPA currently does not have an estimated date for final contract publication. They will send out a notice when they have an update. After the contract has been sent out, each entity will have six months to execute the contract.

- NCPA inquired WAPA about a 10-year Power Revenue Requirement (PRR) forecast (FY 2021 – FY 2030). WAPA plans to share the forecast by mid-late July.

Integrated Resource Plan (IRP)

- Pursuant to the Western Base Resource Contract, NCPA (on behalf of the assignment members) is required to file a structured Integrated Resource Plan with Western every five (5) calendar years, and is subsequently required to file an update to the IRP each year. NCPA filed the 2020 annual update report prior to the July 1st deadline. The report was accepted and approved by Western on May 27th, 2020.

Energy Imbalance Market (EIM)

- WAPA decided to join the CAISO Energy Imbalance Market (EIM). The expected go-live date is April 1, 2021. WAPA intends to file new formula rate schedule to capture the costs and benefits associated with EIM. The effective date of the new rate schedules is April 1, 2021. WAPA has held its first two informal customer meeting on the 2021 rate case, and expects to complete the informal process by July 2020. Next informal meeting is scheduled on June 25, 2020.

Interconnection Affairs

PG&E Update

Permanent Inter-Tie switch Between Geo Plants 1 and 2

- The permanent no load intertie switch has been approved by the CAISO. The switch can be used when either the Fulton or Lakeville line is out of service to combine the outputs of Geo Plant 1 and Plant 2.
- Next step is to seek buy in from PG&E, propose and finalize an operating procedure, and amend the GIA's if necessary.

TO-20 Rate Case

- Partial settlement was filed at FERC towards the end of March, 2020. Key items not settled are ROE, Capital Structure, and Depreciation.
- FERC 890 case/PG&E's self-approved projects case is now part of the TO-20 settlement. The project review process is called the Stakeholder Transmission Asset Review/STAR Process. The partial settlement finalized the STAR process, which begins June 1, 2020. NCPA is expecting a massive transmission project list from PG&E and plans to participate, supporting CPUC in this effort.

Cotenancy Agreement

- PG&E with support from NCPA and SVP filed an amendment that acknowledged CDWR's request for termination. The amendment rejected CDWR's request,

pending resolution of the Cost of Removal dispute. All other matters have been delayed until this issue is resolved.

- On September 27, 2019 FERC rejected PG&E's amendment stating PG&E cannot unilaterally extend the term of the Agreement. FERC did not address the cost of removal aspect and the calculation methodology. NCPA has initiated discussions with members as to how much capacity from CDWR's share should NCPA take. Pending the outcome of the capacity discussion, NCPA and SVP will look at next steps. More updates will be provided to members they become available.

Transmission Planning BPM Updated Modeling Data Submittal

- CAISO is requiring Generators to submit updated modeling data to ensure CAISO has current and accurate system information.
- NCPA has submitted updated data and power flow models for all Hydro, Geo, and CT units. The Alameda CTs have been deemed compliant by the CAISO, however CAISO pointed out a few quality issues which NCPA is working to address. NCPA is still waiting review and comments from CAISO on the remaining units.

Debt and Financial Management

- At the June 10th meeting, the Federal Reserve decided to hold interest rates steady at near-zero, signaling its intention to support a post-COVID economic recovery by keeping rates at the lower bound through at least 2022. By keeping rates low through at least 2022, the Fed hopes it will be able to steer the economy back to its pre-pandemic shape. The decision to hold rates at near-zero was unanimously agreed upon.
- Following the Fed's comments, the 2-year Treasury note fell to 0.177% while the 10-year and 30-year notes fell to 0.744% and 1.516%, respectively, marking its largest one-day drop since April 15th.
- In the coming weeks, the economy is expected to bring evidence of recovery in areas such as retail sales, industrial production and housing. However, that may not be enough to fuel another burst of optimism, given concern about the economy's ability to bring back jobs. The Fed said last week it expects the unemployment rate to fall to 9.3% in the final quarter of 2020, from 13.3% in May. It was 3.5% in February.
- On June 12th, Fitch Ratings affirmed the 'A' rating and 'Stable' outlook on NCPA's Lodi Energy Center Revenue Bonds, Issue One. The rating reflects the contractual terms and credit quality of the largest project participants, whose payments are ultimately used to pay operating expenses and debt service on the bonds.

Schedule Coordination Goals

Software Development

- Technology upgrade and development of the new Market Instruction Dispatch System (MIDS) application is in progress that will replace NCPA's legacy NADS application. IS staff in coordination with NCPA Power Management, Consultant and CAISO is preparing for Market Simulation during the month of July to incorporate CAISO modifications for further automation of solar curtailment logic and unannounced tests of ancillary services (i.e. Spin, Non-Spin, contingency dispatch instructions). The deployment date is scheduled to for July.
- PCWA expressed interest in utilizing NCPA's Deal Manager App and Risk Manager App. IS, in coordination with Power Management, provided a test environment for PCWA staff.
- The test upgrade of GP to the latest version 2018 and the ReQlogic procurement software to the latest version 12 were successful. User Acceptance Testing is now on-going through July 23rd, in which the production upgrade immediately follows. Go live anticipated for July 27th.

Network

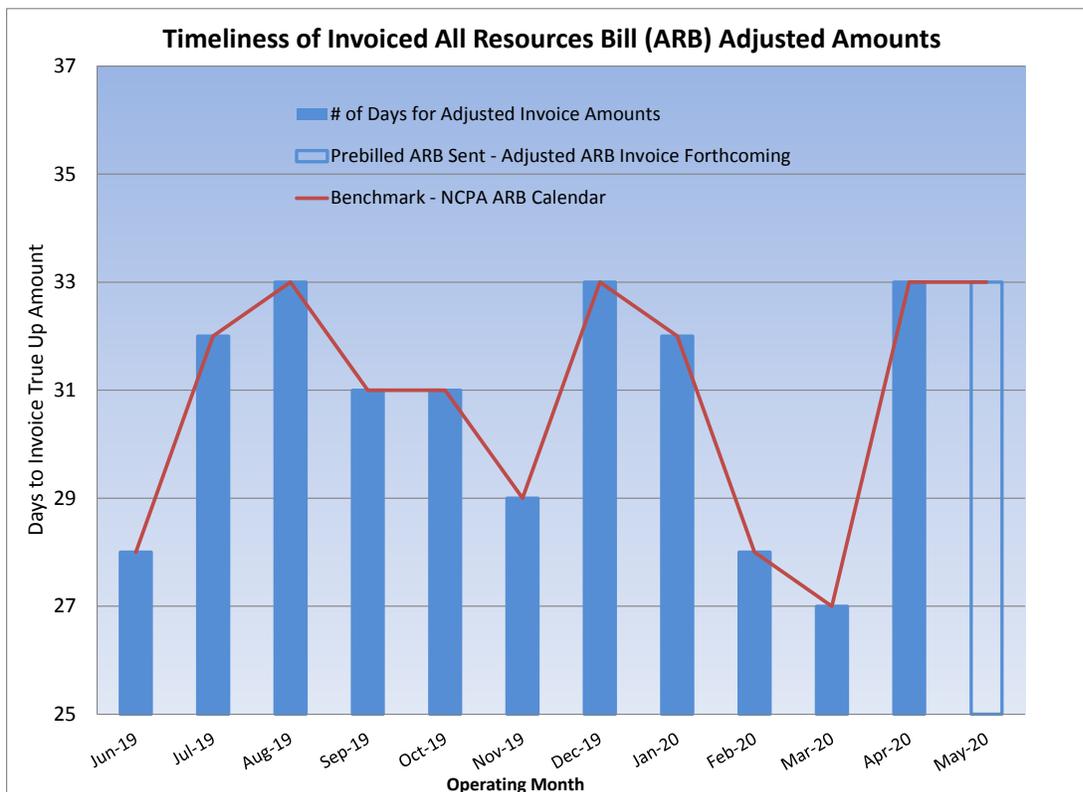
- Operations and Support has upgraded the Enterprise WIFI solution at Geo. Hydro will be completed in the coming weeks.
- Progress continues to be made upgrading staff to Windows 10 with over 87% of the Agency on the new Operating System. IS staff are working with individual departments to upgrade the few remaining Windows 7 machines and anticipate to be completed in the coming weeks.
- IS continues to work with NID technical staff to implement remote control shutoff of the South Combie Power Plant. Remote Desktop has been established and we are working to finalize procedures for HMI shut off.
- The Ops and Support group has been working alongside Power Management and Settlements in preparation for the CAISO MSG market simulation later this year. Part of this effort will include enhancements to SCADA control logic for LEC configurations along with updating dispatch control center screens.
- IS in coordination with the Compliance Working Group continue to review draft NERC CIP policies that will prepare us to be compliant in the anticipation that our Dispatch Control Center(s) will be considered Medium Impact in the near future.

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 May 2020 NCPA All Resources Bill (ARB) monthly invoice sent to members on April 21, 2020 contains:

- May 2020 monthly pre-billed budget/forecast amounts;
- March 2020 (1st Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- February 2020 (2nd Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
- December 2019 (3rd Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
- June 2019 (4th Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
- August 2018 (5th Adjustment) T+18 month recalculated CAISO settlement true-up allocations;
- May 2017 (6th Adjustment) T+33 month recalculated CAISO settlement true-up;
- February 2017 (7th Adjustment) T+35 month CAISO settlement true-up;



Legislative & Regulatory

Political Arena State/Federal/Western Programs

State Legislative Update

- Despite ongoing negotiations with the Governor, the State Legislature passed a budget for the 2020-21 fiscal year on June 15th, as required by the Constitution. Further modifications are expected in the coming weeks as the state learns more about the availability of federal funding as well as the status of state tax revenues. NCPA is closely engaged on discussions regarding potential budget trailer bill language that would include a proposal to modify the Cap-and-Trade program.
- NCPA will soon be joining the Low Carbon Fuel Standard (LCFS) as a reporting entity, having completed the necessary updates to the Market Purchase Program Agreement and the Energy Risk Management Regulations. Participation in the LCFS will allow NCPA to aggregate and sell LCFS credits on behalf of the Members, providing a streamlined method of monetizing LCFS credits so that the Members can invest the funds back into their EV programs. The internal processes for tracking and aggregating LCFS credits are currently under development, and will be formally announced to the Members once finalized.

State Regulatory Update

- NCPA is providing support to NCPA members as the statutory deadline approaches for electric utilities to submit Wildfire Mitigation Plans to the Wildfire Safety Advisory Board. NCPA is coordinating with CMUA and its public power partners to ensure that the wide array of programs being undertaken by members to reduce the risk of catastrophic wildfires is highlighted with the Wildfire Safety Advisory Board as the Board evaluates the effectiveness of statewide wildfire mitigation activities. Proactive engagement with the Board provides NCPA with an opportunity to demonstrate continued leadership in this arena, as well as our shared commitment with the state to reduce wildfire risk.

Federal Legislative Update

- **NCPA Virtual Delegation Meetings:** As part of our federal advocacy strategy to engage with policymakers and staff in light of COVID-19-related restrictions, we are scheduling virtual meetings during the week of June 22nd with congressional delegation staff to advance key priorities related to upcoming legislative action in the House. These virtual delegation meetings with NCPA member systems will be focused on major infrastructure, appropriations, and COVID-19-related stimulus bills slated for action in the House in the coming weeks before Congress adjourns for August Recess. The topics that will be raised include: restoring tax-exempt advance refunding of municipal bonds, providing direct aid to local governments and municipalities to address the revenue impacts of the COVID-19 pandemic, and advancing clean energy initiatives and potential NCPA projects in a federal infrastructure package. These virtual meetings are also important due to the cancellation of our annual Federal Policy Conference earlier this year, which provides the opportunity for our members to travel to Washington, D.C., and lobby their Member of Congress on issues of significance to their utility.

Human Resources

Hires:

Benjamin Hector was hired as a Schedule Coordinator II at our Headquarters offices effective May 18, 2020. Benjamin has two years of experience as a System Operator having most recently worked as an Electric Utility System Operator – Power with the City of Redding. Benjamin is NERC certified and has a Bachelor of Science degree in Business and Psychology from Liberty University.

Moses Avetisyan was hired as a Computer Technology Analyst I at our Headquarters offices effective May 18, 2020. Moses has experience as a controls engineer with Automation Group designing and troubleshooting SCADA equipment. Some of his skills include designing HMI displays, testing and implementing SCADA hardware and software as well as the ability to program in several languages including C++ and Python. Moses has a Bachelor of Science degree in Engineering and Bachelor of Arts in Physics.

Intern Hires:

None.

Promotions/Position Changes:

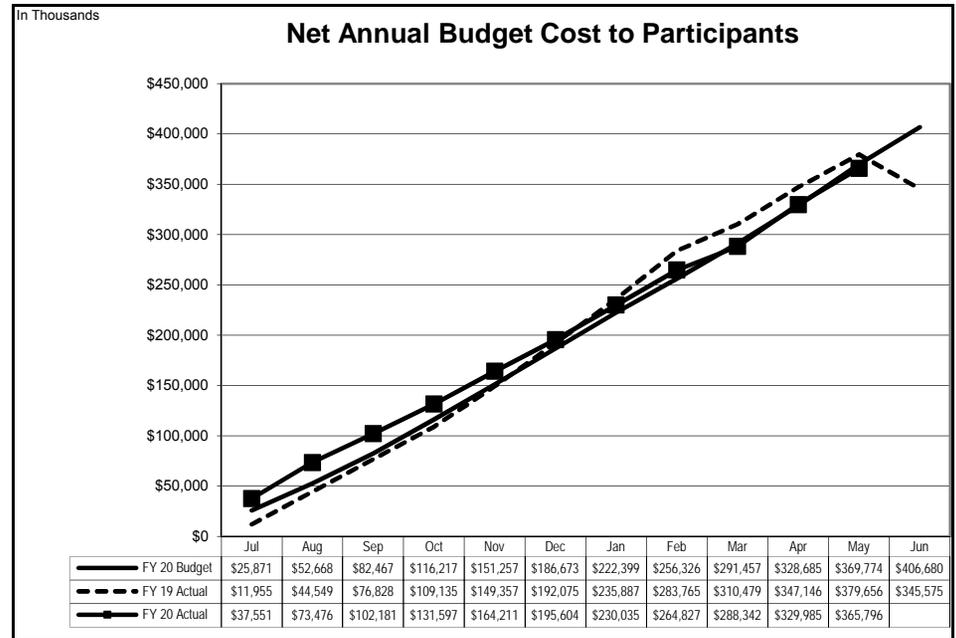
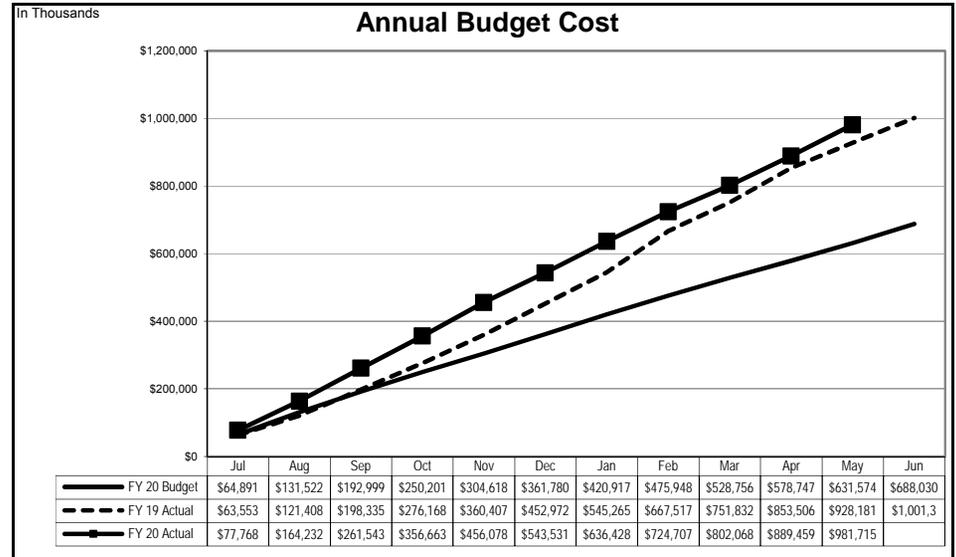
Ryan Johnson was promoted to Supervisor II, at our Lodi Energy Center effective May 24, 2020. Prior to his promotion Ryan was a Combustion Turbine Specialist– Lead Relief.

Separations:

Scott Sexton, Supervisor II, retired from his position at our Lodi Energy Center after over 34 years of service with NCPA, effective May 21, 2020.

**Annual Budget
2019-2020 Fiscal Year To Date
As of May 31, 2020**

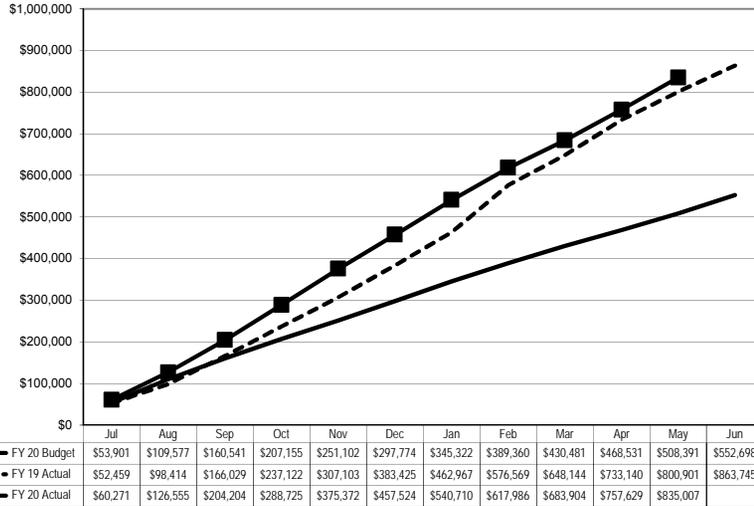
In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
GENERATION RESOURCES				
NCPA Plants				
Hydroelectric	54,074	47,961	\$ 6,113	11%
Geothermal Plant	35,311	33,686	1,625	5%
Combustion Turbine No. 1	6,170	5,218	952	15%
Combustion Turbine No. 2 (STIG)	9,438	8,388	1,050	11%
Lodi Energy Center	92,960	103,923	(10,963)	-12%
	197,953	199,176	(1,223)	-1%
Member Resources - Energy	56,229	57,896	(1,667)	-3%
Member Resources - Natural Gas	3,541	3,657	(116)	-3%
Western Resource	23,325	21,689	1,636	7%
Market Power Purchases	15,123	21,947	(6,824)	-45%
Load Aggregation Costs - ISO	256,030	528,086	(272,057)	-106%
Net GHG Obligations	497	2,556	(2,059)	-414%
	552,698	835,007	(282,309)	-51%
TRANSMISSION				
Independent System Operator	117,089	130,606	(13,517)	-12%
MANAGEMENT SERVICES				
Legislative & Regulatory				
Legislative Representation	2,132	1,725	407	19%
Regulatory Representation	748	620	129	17%
Western Representation	745	542	203	27%
Customer Programs	424	231	193	46%
	4,049	3,118	932	23%
Judicial Action	625	470	155	25%
Power Management				
System Control & Load Dispatch	6,082	5,361	722	12%
Forecasting & Prescheduling	2,934	2,268	666	23%
Industry Restructuring	414	330	85	20%
Contract Admin, Interconnection Svcs & Ext. Affairs	954	857	97	10%
Gas Purchase Program	77	58	19	25%
Market Purchase Project	111	81	30	27%
	10,573	8,954	1,619	15%
Energy Risk Management	212	138	73	35%
Settlements	980	694	286	29%
Integrated System Support	243	108	135	56%
Participant Pass Through Costs	1,560	1,100	461	30%
Support Services	-	1,520	(1,520)	-
	18,243	16,102	2,141	12%
TOTAL ANNUAL BUDGET COST	688,030	981,715	(293,685)	-43%
LESS: THIRD PARTY REVENUE				
Plant ISO Energy Sales	127,624	70,907	56,717	44%
Member Resource ISO Energy Sales	29,156	23,384	5,772	20%
Member Owned Generation ISO Energy Sales	67,108	56,078	11,030	16%
NCPA Contracts ISO Energy Sales	15,623	15,714	(91)	-1%
Western Resource ISO Energy Sales	18,304	18,685	(380)	-2%
Load Aggregation Energy Sales	-	308,217	(308,217)	-
Ancillary Services Sales	4,197	4,813	(616)	-15%
Transmission Sales	110	101	9	8%
Western Credits, Interest & Other Income	19,227	118,020	(98,792)	-514%
	281,350	615,919	(334,569)	-119%
NET ANNUAL BUDGET COST TO PARTICIPANTS	406,680	365,796	\$ 40,884	10%



Annual Budget Budget vs. Actual By Major Area As of May 31, 2020

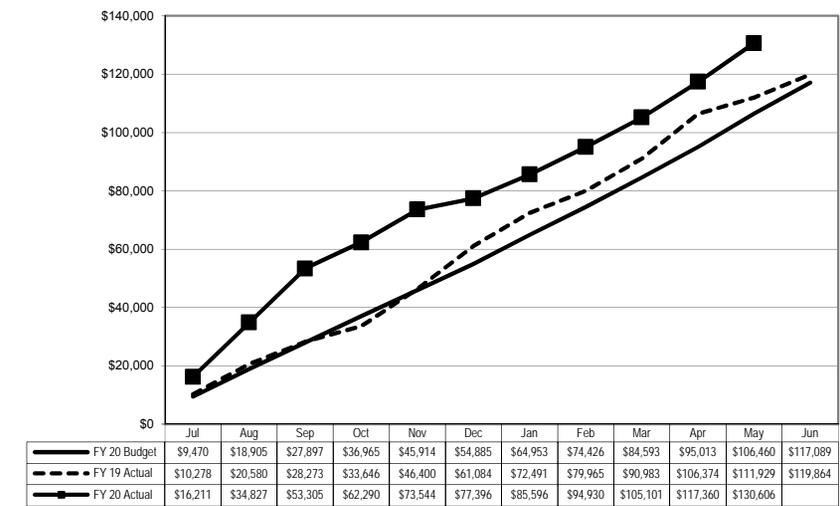
In Thousands

Generation Resources



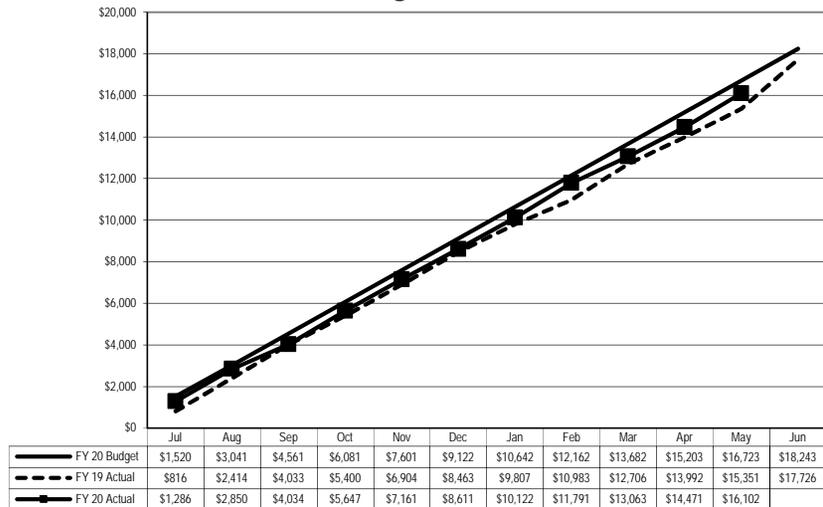
In Thousands

Transmission-ISO



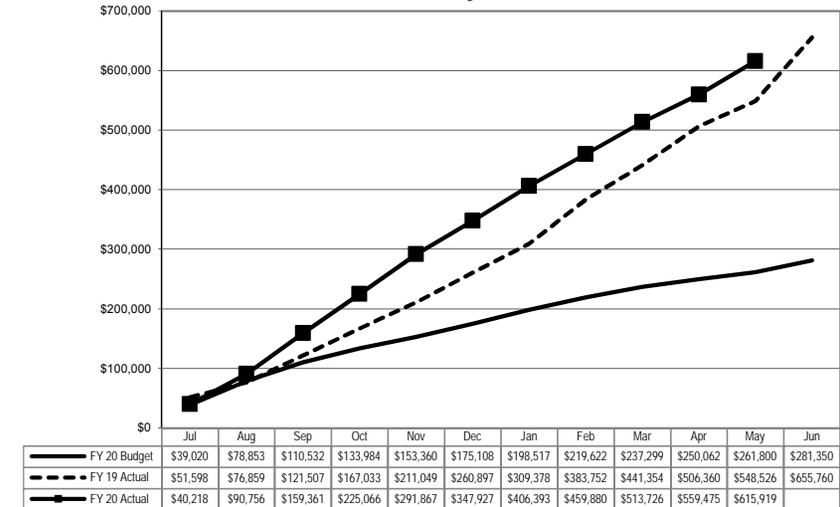
In Thousands

Management Services



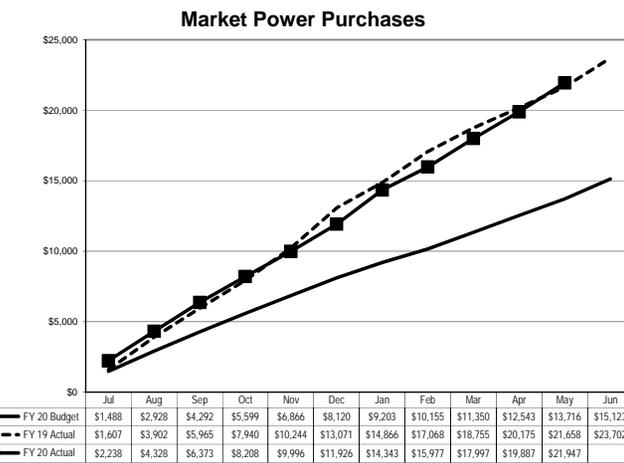
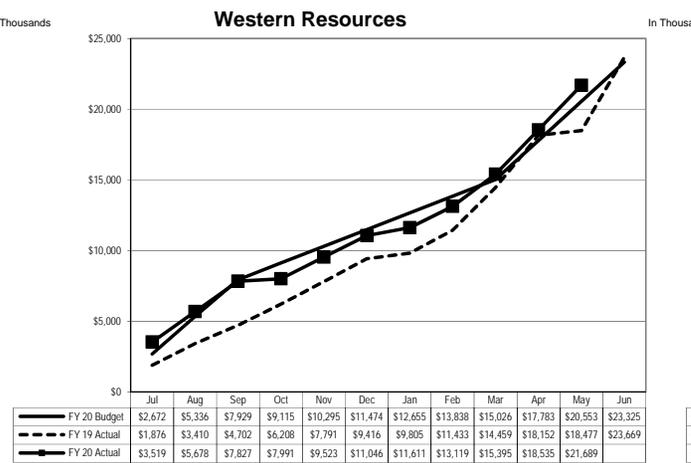
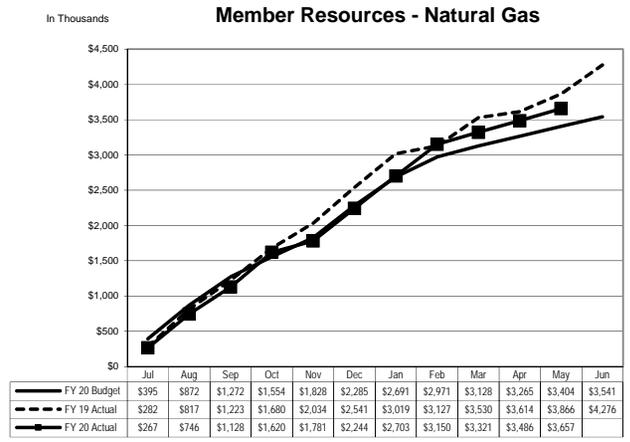
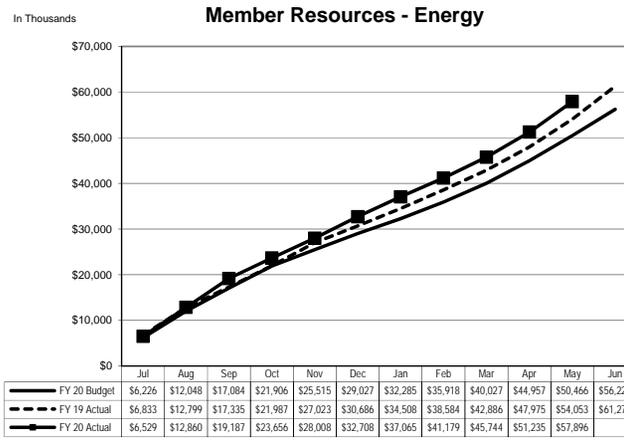
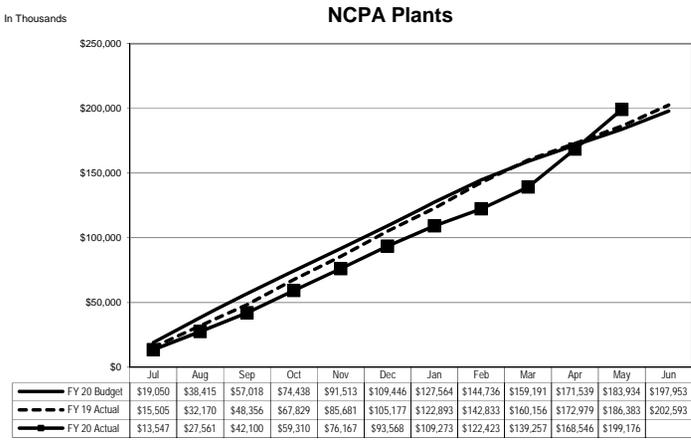
In Thousands

Third Party Revenue



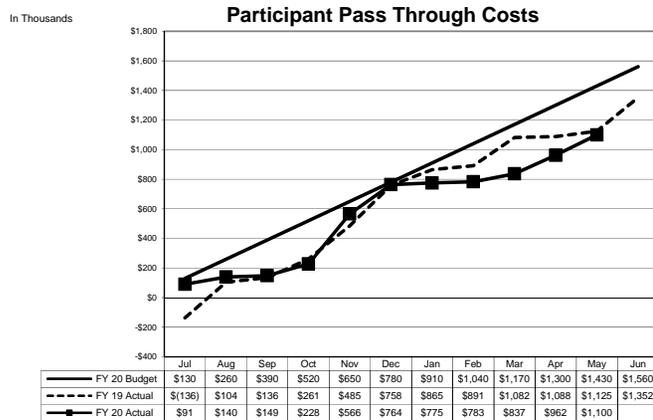
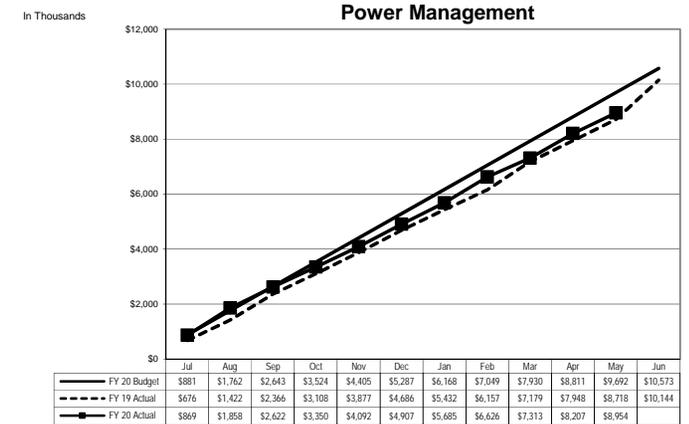
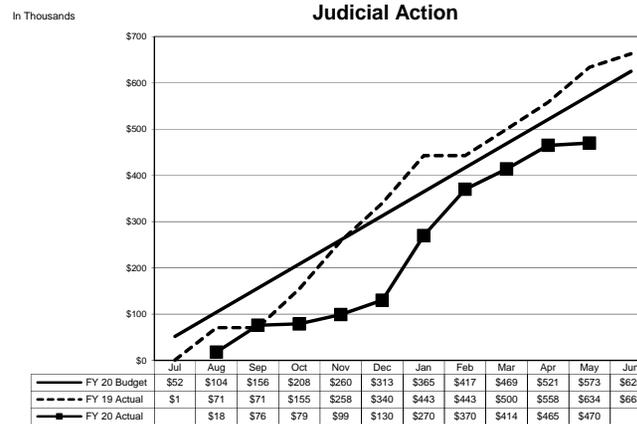
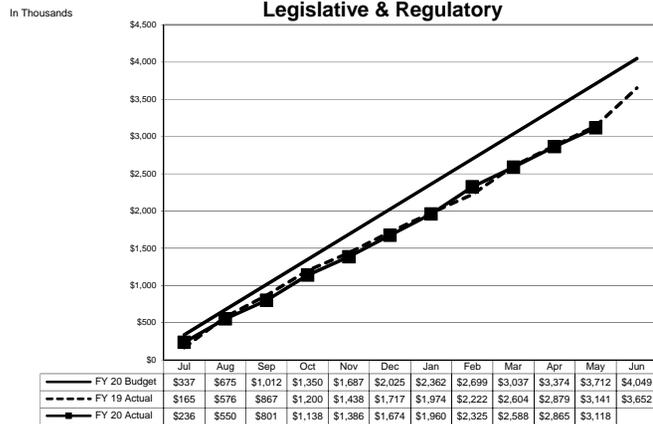
Footnote: Transmission is solely reflective of Independent System Operator (ISO) costs

Annual Budget Cost Generation Resources Analysis By Source As of May 31, 2020



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, 2020

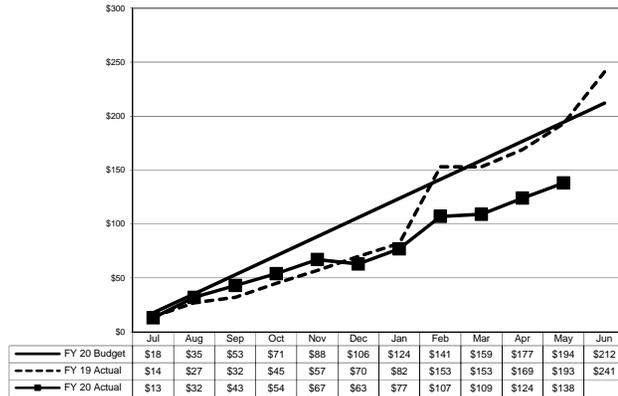


**Annual Budget Cost
Management Services Analysis By Source
As of May 31, 2020**

In Thousands

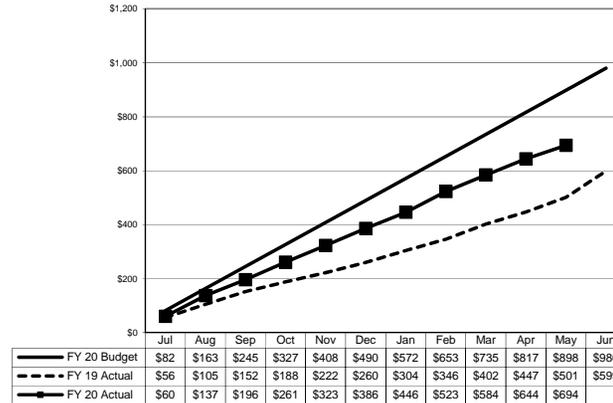
Energy Risk Management

In Thousands

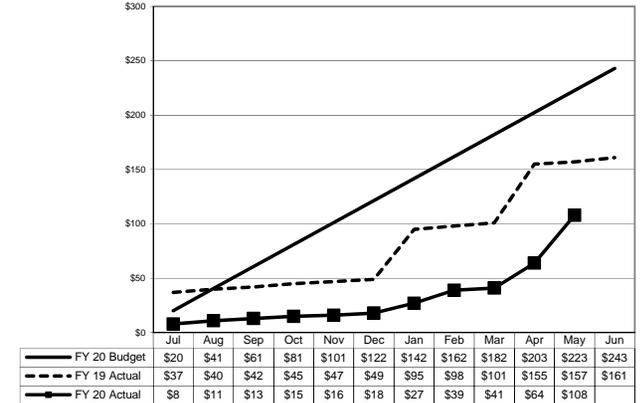


Settlements

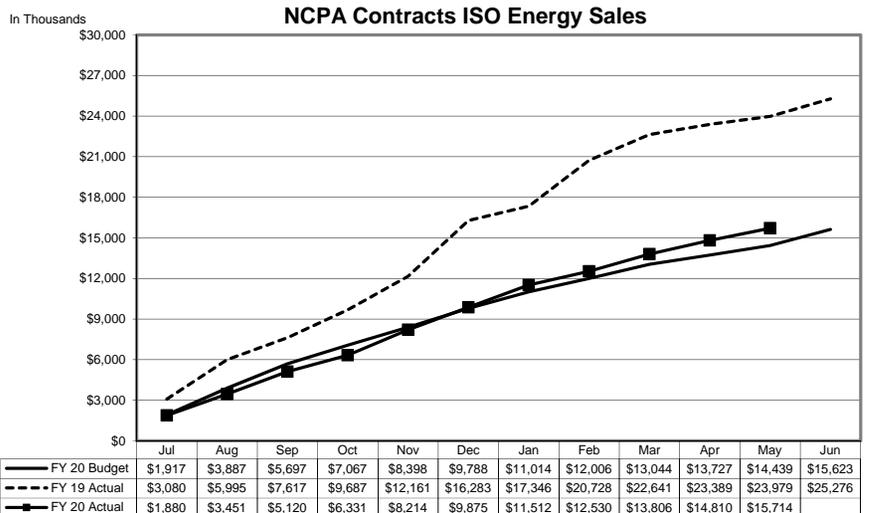
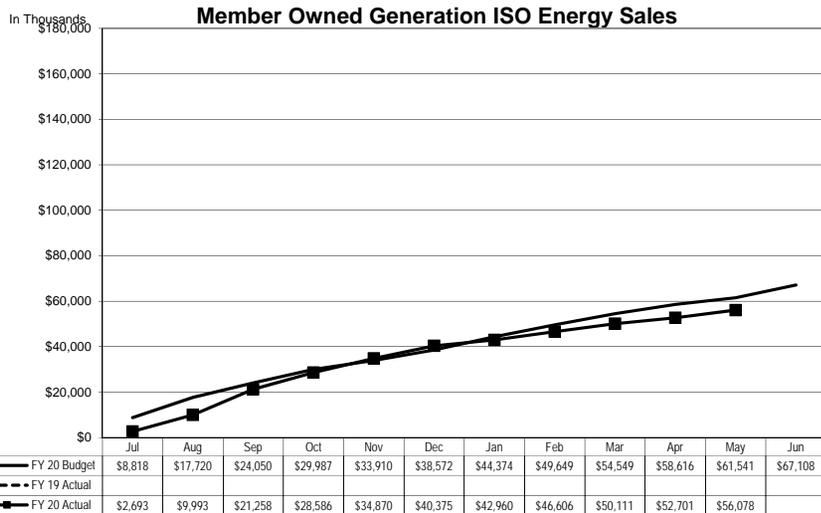
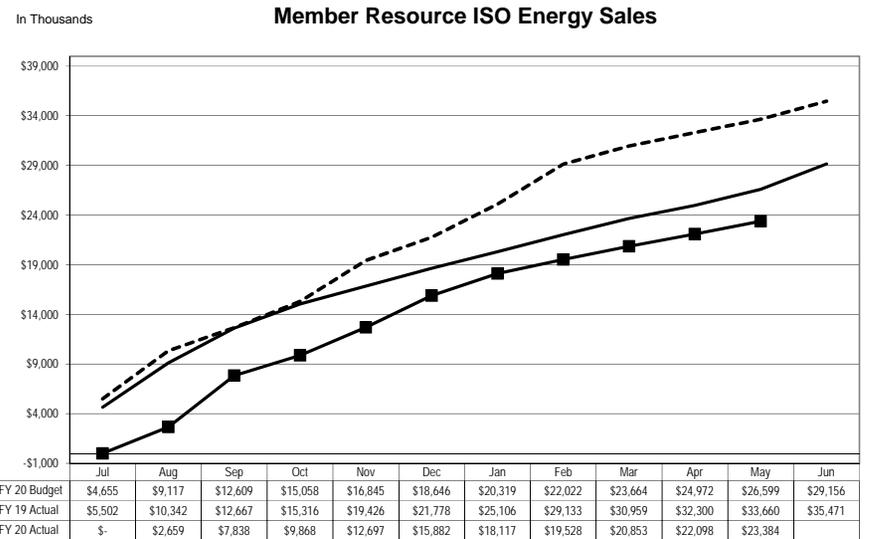
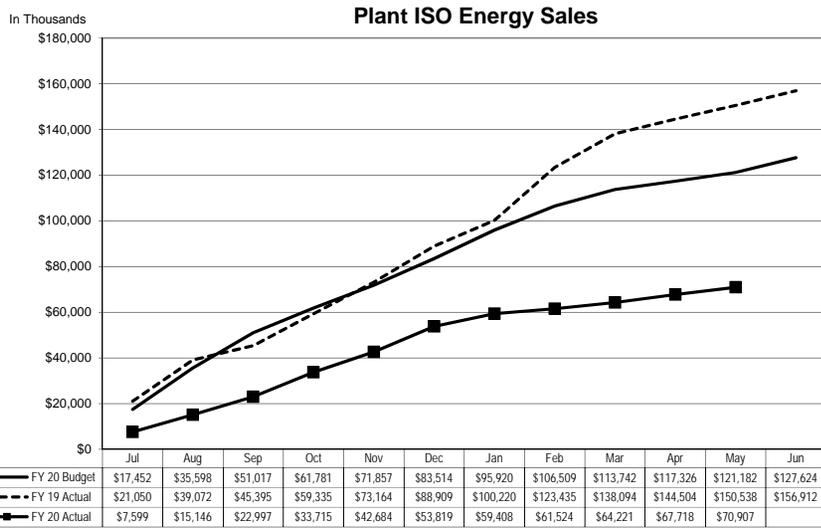
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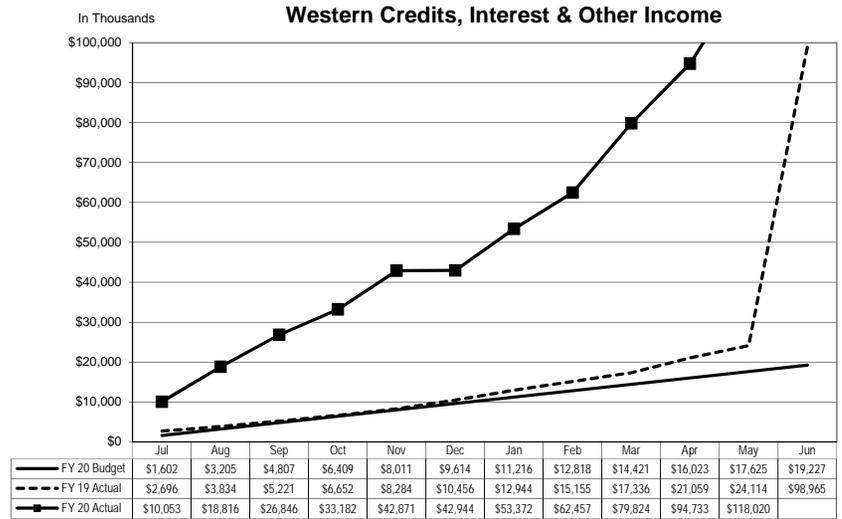
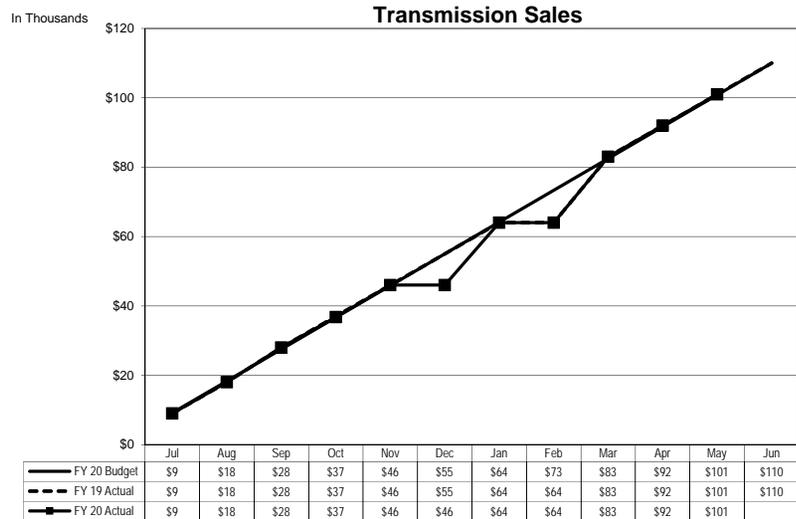
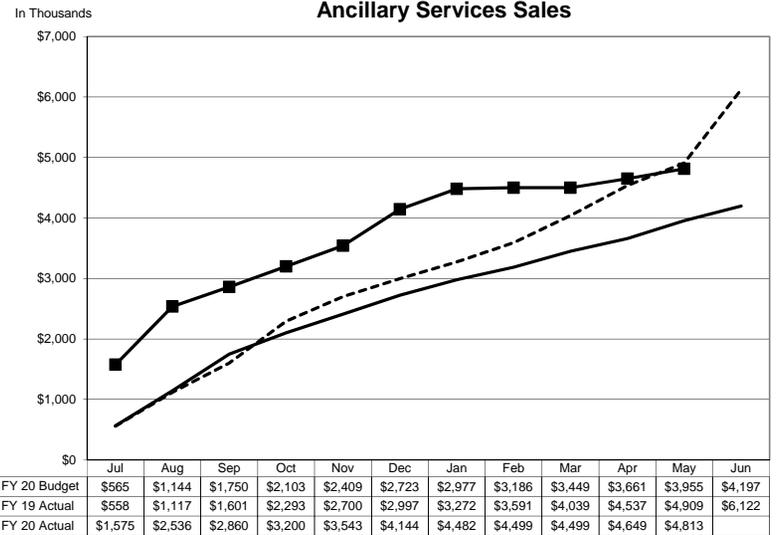
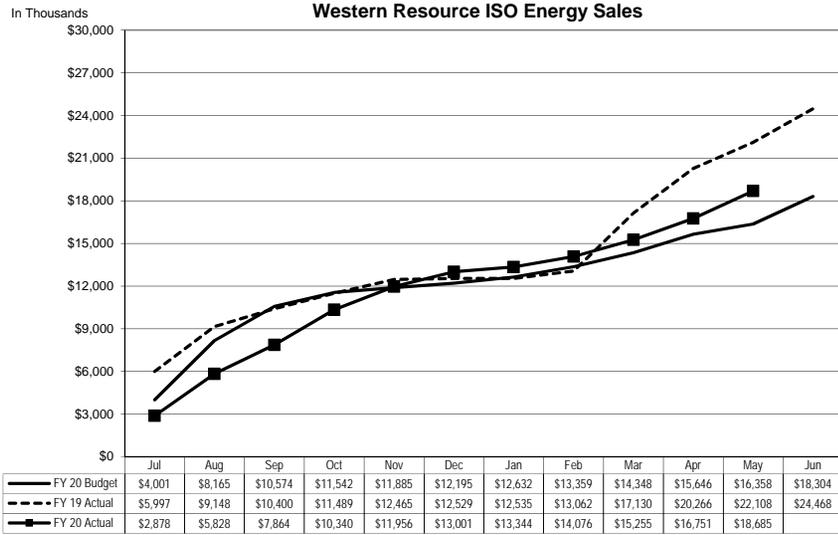
Integrated Systems Support



**Annual Budget Cost
Third Party Revenue Analysis By Source
As of May 31, 2020**



**Annual Budget Cost
Third Party Revenue Analysis By Source
As of May 31, 2020**



**Annual Budget
NCPA Generation Detail Analysis By Plant
As of May 31, 2020**

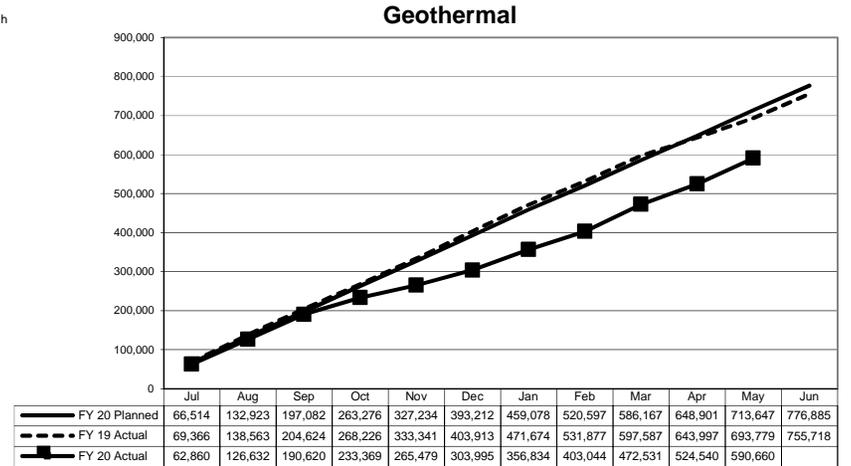
Generation Cost Analysis

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 18,456	\$ 17,533	\$ 29.68	\$ 923	5%
Capital Assets/Spare Parts Inventories	3,645	3,956	6.70	(311)	-9%
Other Costs	7,640	6,827	11.56	813	11%
CA ISO Charges	625	837	1.42	(212)	-34%
Debt Service	4,946	4,534	7.68	412	8%
Annual Budget	35,311	33,686	57.03	1,625	5%
Less: Third Party Revenue					
Interest Income	382	222	0.38	160	42%
ISO Energy Sales	29,481	18,396	31.14	11,085	38%
Ancillary Services Sales	-	-	-	-	-
Effluent Revenues	750	657	1.11	93	12%
Misc	110	104	0.18	7	6%
	30,723	19,378	32.81	11,345	37%
Net Annual Budget Cost to Participants	\$ 4,588	\$ 14,308	\$ 24.22	\$ (9,720)	-212%
Net Generation--MWh @ Meter	776,885	590,660			
\$/MWh (A)	\$ (0.46)	\$ 16.55			

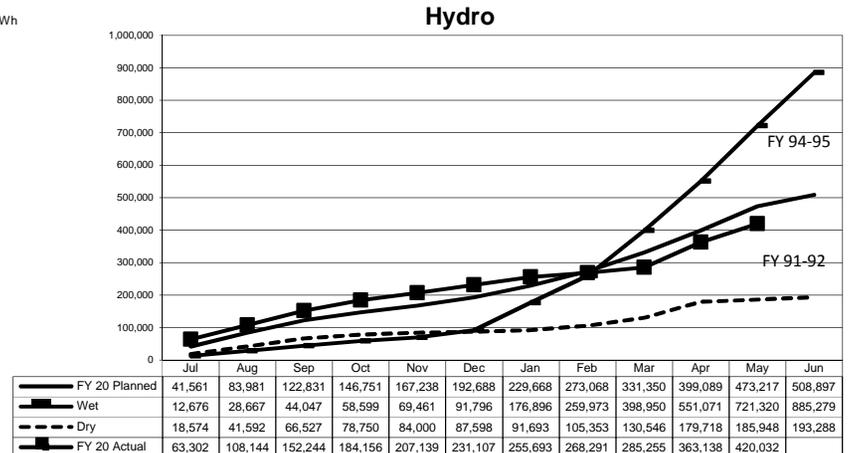
MWhs Generated

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 450	\$ 7,625	\$ 18.15	\$ (7,176)	-1596%
Capital Assets/Spare Parts Inventories	4,775	4,261	10.15	514	11%
Other Costs	12,078	2,876	6.85	9,202	76%
CA ISO Charges	3,465	2,667	6.35	798	23%
Debt Service	33,307	30,531	72.69	2,776	8%
Annual Budget	54,074	47,961	114.18	6,113	11%
Less: Third Party Revenue					
Interest Income	670	457	1.09	213	32%
ISO Energy Sales	23,455	16,312	38.84	7,143	30%
Ancillary Services Sales	2,539	3,394	8.08	(855)	-34%
Misc	-	404	0.96	(404)	-
	26,664	20,567	48.97	6,097	23%
Net Annual Budget Cost to Participants	\$ 27,410	\$ 27,394	\$ 65.22	\$ 16	
Net Generation--MWh @ Meter	508,897	420,032			
\$/MWh (A)	\$ (11.59)	\$ (7.47)			

In MWh



Footnotes:

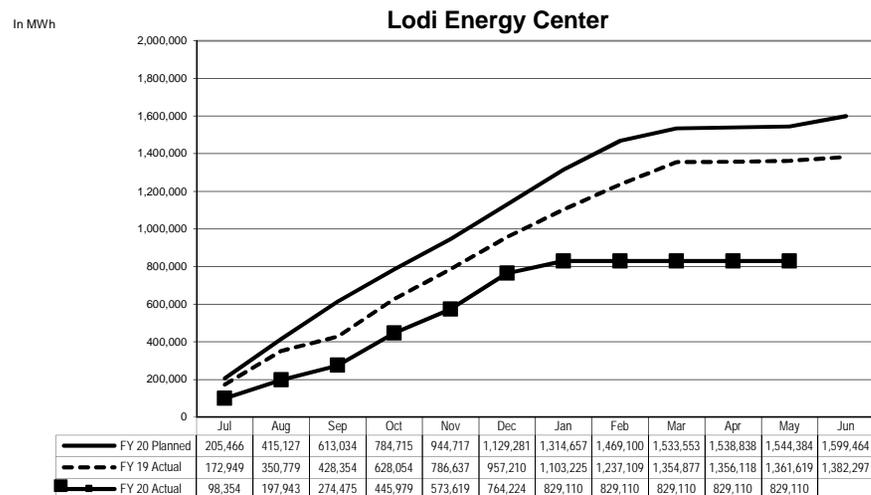
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

**Annual Budget
NCPA Generation Detail Analysis By Plant
As of May 31, 2020**

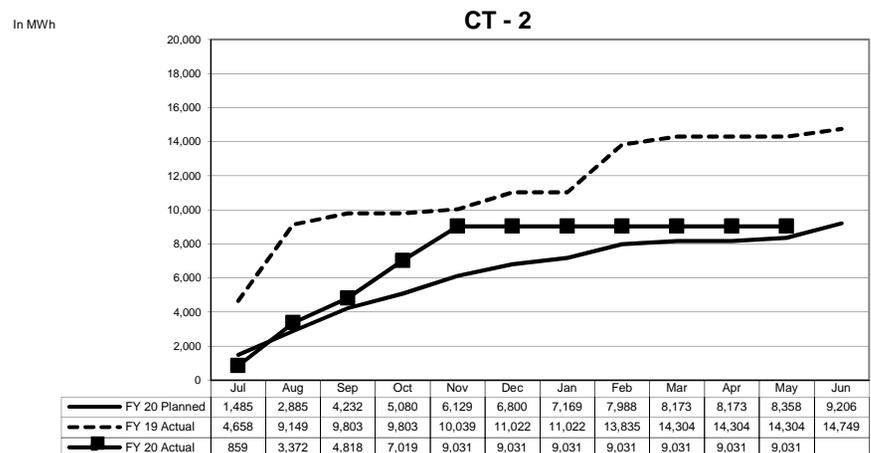
Generation Cost Analysis

	Lodi Energy Center				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 14,101	\$ 11,508	\$ 13.88	\$ 2,593	18%
Fuel	39,513	20,807	25.09	18,707	47%
AB 32 GHG Offset	-	-	-	-	0%
CA ISO Charges and Energy Purchases	4,710	2,718	3.28	1,993	42%
Capital Assets/Spare Parts Inventories	5,333	41,953	50.60	(36,620)	-687%
Other Costs	3,249	3,055	3.68	194	6%
Debt Service	26,054	23,883	28.81	2,171	8%
Annual Budget	92,960	103,923	125.34	(10,963)	-12%
Less: Third Party Revenue					
Interest Income	386	595	0.72	(209)	-54%
ISO Energy Sales	72,603	34,574	41.70	38,028	52%
Ancillary Services Sales	1,433	1,193	1.44	239	17%
Transfer Gas Credit	-	-	-	-	0%
Misc	-	36,402	43.90	(36,402)	0%
	74,421	72,764	87.76	1,657	2%
Net Annual Budget Cost to Participants	\$ 18,539	\$ 31,158	\$ 37.58	\$ (12,619)	-68%
Net Generation--MWh @ Meter	1,599,464	829,110			
\$/MWh (A)	\$ (4.70)	\$ 8.77			

MWhs Generated



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,595	\$ 1,301	\$ 144.09	\$ 294	18%
Fuel and Pipeline Transport Charges	1,089	926	102.49	164	15%
Capital Assets/Spare Parts Inventories	418	358	39.59	61	15%
Other Costs	486	414	45.79	73	15%
CA ISO Charges	53	77	8.55	(24)	-45%
Debt Service	5,796	5,313	588.37	483	8%
Annual Budget	9,438	8,388	928.87	1,050	11%
Less: Third Party Revenue					
Interest Income	109	95	10.54	13	12%
ISO Energy Sales	819	697	77.22	122	15%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	1,687	1,381	152.98	306	18%
Misc	-	0	0.00	(0)	0%
	2,615	2,174	240.74	441	17%
Net Annual Budget Cost to Participants	\$ 6,823	\$ 6,214	\$ 688.14	\$ 609	9%
Net Generation--MWh @ Meter	9,206	9,031			
\$/MWh (A)	\$ 111.53	\$ 99.77			



Footnotes:

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

**Annual Budget
NCPA Generation Detail Analysis By Plant
As of May 31, 2020**

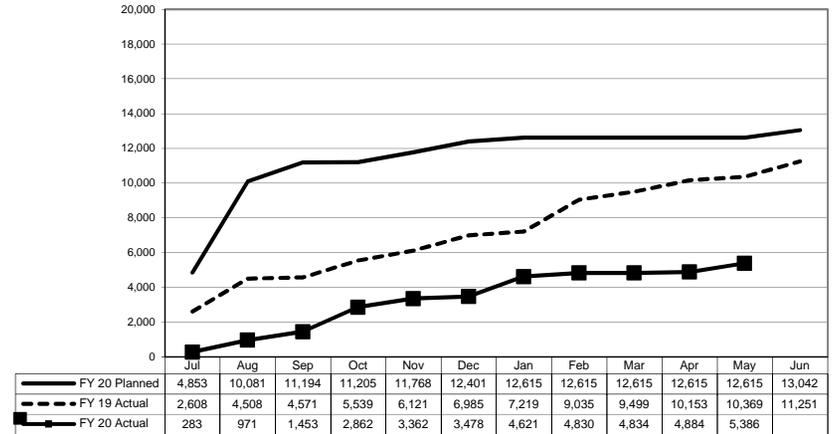
Generation Cost Analysis

	Combustion Turbine No. 1				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 2,268	\$ 2,166	\$ 402.23	\$ 102	4%
Fuel and Pipeline Transport Charges	975	401	74.44	574	59%
Capital Assets/Spare Parts Inventories	2,110	1,806	335.24	304	14%
Other Costs	747	659	122.44	87	12%
CA ISO Charges	69	186	34.47	(116)	-168%
Debt Service	-	-	-	-	-
Annual Budget	6,170	5,218	968.83	952	15%
Less: Third Party Revenue					
Interest Income	-	30	-	(30)	-
ISO Energy Sales	1,266	927	172.20	339	27%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	16	2.90	(16)	0%
	1,266	973	175.10	293	23%
Net Annual Budget Cost to Participants	\$ 4,904	\$ 4,245	\$ 788.17	\$ 659	13%
Net Generation--MWh @ Meter	13,042	5,386			
\$/MWh (A)	\$ 375.97	\$ 788.17			

MWhs Generated

In MWh

CT - 1



Footnotes:

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