



20/20

BUSINESS PROGRESS  
REPORT

MAY



Northern California Power Agency  
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# Table of Contents

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Generation Costs & Reliability .....	1
Environmental, Health & Safety Projects .....	4
Power Management/NCPA Market Results.....	5
Debt & Financial Management .....	16
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 April 2020

Unit	Availability		Production			Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	21.5	MWh	CAISO / CAISO
	97.4%	0.0%	Unit 2	0.0	MWh	
Curtailments, Outages, and Comments:						
Unit 1:	4/20 @ 6:45-13:24 Diesel motor emissions test 4/23 @ 20:39 - 4/24 @ 8:35 Communications equipment trouble.					
Unit 2:	3/2 @ 00:00 - 4/15 @ 23:59 Annual maintenance planned, OMS 7821165 4/15 @ 00:00 - 4/30 @ 23:59 Annual maintenance forced, OMS 8492990. ETR 5/22.					
Unit	Availability		Production			Reason for Run
CT1 Lodi	99.7%		30.0 MWh			CAISO
Curtailments, Outages, and Comments:						
	4/11 @ 13:00 - 15:15 Transmission induced OMS 8484808 4/29 @ 8:58 - 10:10 SEL 300G upgrade					
Unit	Availability		Production			Reason for Run
CT2 STIG	100.0%		0.0 MWh			CAISO
Curtailments, Outages, and Comments:						
	Normal operation.					
Unit	Availability		Production			Reason for Run
LEC	#N/A		#N/A MWh			#N/A
Curtailments, Outages, and Comments:						
	4/1 - 4/30 - LEC CT Failure, OMS 8344634.					

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

**Geothermal Facilities**

**Availability/Production for April 2020**

<b>Unit</b>	<b>Availability</b>	<b>Net Electricity Generated/Water Delivered</b>	<b>Out-of-Service/Descriptors</b>
<b>Unit 1</b>	100 %	27,683 MWh	U1 had no outages for the month
<b>Unit 2</b>	85.90 %	*24,278 MWh	U2 was off line 4/20 0200 until 4/22 1550 for 2.4 XFMR replacement. U2 was off line 4/24 2100 until 4/26 1230 due to circ pump trip/2.4 XFMR tap adjustment
<b>Unit 3</b>	N/A %	N/A	Unit 3 remains out of service.
<b>Unit 4</b>	0 %	0 MWh	U4 was OOS for the month due to Turbine repair/replacement
<b>Southeast Geysers Effluent Pipeline</b>	2.082 %	181.9 mgallons	Average flow rate: 4,193 gpm
<b>Southeast Solar Plant</b>	N/A	33,675 KWh	Year-to-date KWh: 2,632,670
<b>Bear Canyon Pump Station Zero Solar</b>	N/A	93,702 KWh	Year-to-date KWh: 3,972,203

\* Accounts for an additional 1,716 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

## Hydroelectric Project

### Availability/Production for April 2020

Units	Availability	Net Electricity Generated	Out-of-Service
<b>Collierville Unit 1</b>	100%	37386 MWh	No Outages to Report.
<b>Collierville Unit 2</b>	100%	40491 MWh	No Outages to Report.
<b>Spicer Unit 1</b>	4.31 %	0 MWh	NSM1 was out of service on 4/2/20 to 4/30/20 from 0700 to 2359 for PG&E Work at Tiger Creek.
<b>Spicer Unit 2</b>	4.31 %	0 MWh	NSM2 was out of service on 4/2/20 to 4/30/20 from 0700 to 2359 for PG&E Work at Tiger Creek.
<b>Spicer Unit 3</b>	4.31 %	5.59 MWh	NSM3 was out of service on 4/2/20 to 4/30/20 from 0700 to 2359 for PG&E Work at Tiger Creek.

#### Operations & Maintenance Activities:

- CMMS work orders
- NSM Powerhouse Annual Maintenance during PGE Outage

## 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 April 25, 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.

### April 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	311	641	1,846	6,830
Work Hours Since Last Recordable	27,441	134,476	273,973	2,523,861
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	4,580	1,709	9,750	5,843
Work Hours without LTA	416,338	351,451	684,517	2,145,879
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 April 25, 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

	April 2020		Calendar Year 2020	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	307.49 4/28 @1800	165,457	336.72 1/16 @1900	721,992
SVP	473.35 4/28 @1500	296,015	484.02 2/27 @1600	1,219,052
MSSA	770.47 4/28 @ 1800	461,472	804.23 1/16 @ 1200	1,941,044

#### Last Year 2019 Data\*

	April 2019		Calendar Year 2019	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	367.71 4/24 @1800	178,691	478.77 8/15 @ 1700	745,076
SVP	519.61 4/24 @1500	298,348	587.78 6/11 @1600	1,191,427
MSSA	880.9 4/24 @ 1700	477,039	1057.99 8/15 @ 1700	1,936,503

\* 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	336.72 1/16 @ 1900
SVP	587.78 MW on 6/11/19 @ 1600	484.02 2/27 @1600
MSSA	1070.79 MW on 9/1/17 @ 1700	804.23 1/16 @ 1200

- 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		
	April 2020	Calendar Year 2020
MSSA % Within the Band	96.99%	96.05%

- Dispatch and SC group continue operating in split mode occupying both Roseville HQ and DRC
- Spicer Meadows:
  - April 2, units separated from the grid for PG&E work at Tiger Creek. Unit 3 remained on providing station service power. ETR May 9
  - April 27, Unit 3 shut down for annual maintenance
- Geothermal Units:
  - April 1 – 30, Unit 4 o/s for annual maintenance and turbine replacement
  - April 20 – 22, Unit 2 o/s for annual maintenance
  - April 24 – 26, Unit 2 o/s due to 2.4kV transformer trouble
- Lodi Energy Center:
  - April 1 - 30, Unit remains o/s for combustion turbine replacement. ETR 6/30
- Alameda CTs:
  - April 20, Unit 1 o/s for diesel cranking motor emission testing
  - April 23 - 24, Units unavailable due to comm trouble, no remote start capability
  - April 1 – 30, Unit 2 remains on annual maintenance outage
- Lodi CT:
  - April 11, unit unavailable due to City of Lodi transmission work
  - April 29, unit o/s for SEL300G upgrade
- Collierville Units:
  - No curtailments
- STIG:
  - No curtailments



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

- NCPA Pool load during April 2020 was 165,033 MWh, or 90.9% of forecast. The stay-at-home mandate issued on March 19<sup>th</sup> has changed load patterns across the state. Pool load through May is also expected to be lower as compared to the same period last year, due to reduced demand related to COVID-19 impacts.
- Lodi Energy Center (LEC) did not operate during April. LEC is expected to be offline through June 30, 2020.
- During April 2020, 3.68” of rain was recorded at the Big Trees gauge. Average April Big Trees precipitation is 4.64”.
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) is being maintained \$75/MWh.
- NSMR storage as of April 30, 2020 was at 113,350 acre feet. The historical average NSMR storage at the end of April is 101,204 acre feet. As of May 11, 2020 NSMR storage is 126,820 acre feet. The current NCPA Pool share of NSMR storage is 64,833 acre feet.
- Combined Calaveras Project generation for the Pool in April 2020 totaled 39.9 GWh, up from 8.6 GWh in March 2020. The Pool’s 39.9 GWh in April 2020 was greater than the pre-month forecast of 14.4 GWh – due to higher than expected side flows during April.
- Western Base Resource (BR) deliveries for the Pool during April 2020 were 57,797 MWh, including Displacement energy totaling 4,841 MWh. Energy received was 94.2% of the pre-month forecast, possibly due to the previous month exceeding forecast. Western’s forecast for the pool’s share of May generation is 84,169 MWh.
- The PG&E Citygate gas index averaged \$2.595/MMBtu for delivery on May 13, 2020, well above the average PG&E gas price during April of \$2.323/MMBtu as gas prices have increased due to potential production curtailments. The May 2020 PG&E Citygate Bidweek price is \$2.525/MMBtu, up 19 cents from the April Bidweek price – but still \$1.02 lower than January’s \$3.54/MMBtu.
- Day-Ahead NP15 electricity prices averaged \$21.66/MWh (HLH) and \$21.54 (LLH) during April 2020, with evening ramp hour prices never quite reaching \$50 at TH\_NP15 as demand fell and heavy renewables curtailments flattened prices toward the end of the month.

NCPA Pool Loads & Resources Value Summary								
Peak and Energy Summary					Estimated Production Costs		Cost of Serving Demand	
Apr-20								
	Coincident Peak (MW)	Total MWh	Pre-Month Forecast Values		NCPA Pool		Totals	Avg (\$/MWh)
			Apr-28-20 Hour 18		Cost/Revenue (Estimate)	Variable Cost (\$/MWh)		
Demand	306.1	165,033	182,115	229.2	N/A	N/A		
WAPA	-	57,797	61,359	80.3	\$ 2,134,816	\$ 36.94	\$ 3,759,395	\$ 22.78
Geothermal	-	21,529	19,584	29.9	409,060	19.00		
Hydro	-	39,900	14,700	55.4	239,400	6.00		
Stig & CTs	-	30	-	0.0	418	14.10		
LEC	-	-	-	-	-	32.38		
Contracts	-	80,988	90,172	112.5	4,794,338	59.20	\$ 6,245,504	\$ 37.84
Market - Net	306.1	(35,211)	(3,700)	(48.9)	(793,909)	22.55		
(Net Sales = Negative)								
<b>Net Total</b>	<b>306.1</b>	<b>165,033</b>	<b>182,115</b>	<b>229.2</b>	<b>\$ 6,784,123</b>	<b>\$ 37.84</b>		

Monthly Market Summary						
	Pool Energy (MWh)	HLH Avg MCP (\$/MWh)	Avg Variable Cost of Pool Generation (\$/MWh)	Forward Prices (EOX NP15 HLH Ask Prices)		
				NP15 4/1/2020 (\$/MWh)	5/13/2020 (\$/MWh)	
Jul-19	212,102	\$ 33.30	\$ 56.98	May-20	\$ 18.86	\$ 19.82
Aug-19	224,328	\$ 34.79	\$ 37.80	Jun-20	26.13	25.63
Sep-19	200,894	\$ 37.46	\$ 40.97	Jul-20	39.49	37.31
Oct-19	186,955	\$ 38.43	\$ 33.39	Q3 2020	\$ 40.66	\$ 40.01
Nov-19	182,993	\$ 43.69	\$ 40.97	Q4 2020	38.99	42.88
Dec-19	182,993	\$ 43.69	\$ 48.09	Q1 2021	38.05	42.78
Jan-20	191,771	\$ 32.76	\$ 39.71	CY2021	\$ 38.95	\$ 42.90
Feb-20	177,169	\$ 27.58	\$ 46.65	CY2022	37.93	40.46
Mar-20	181,339	\$ 27.90	\$ 40.59	CY2023	36.33	39.44
Apr-20	165,033	\$ 22.78	\$ 37.84	CY2024	35.34	38.63
May-20				CY2025	35.09	38.18
Jun-20				CY2026	34.95	37.96

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.

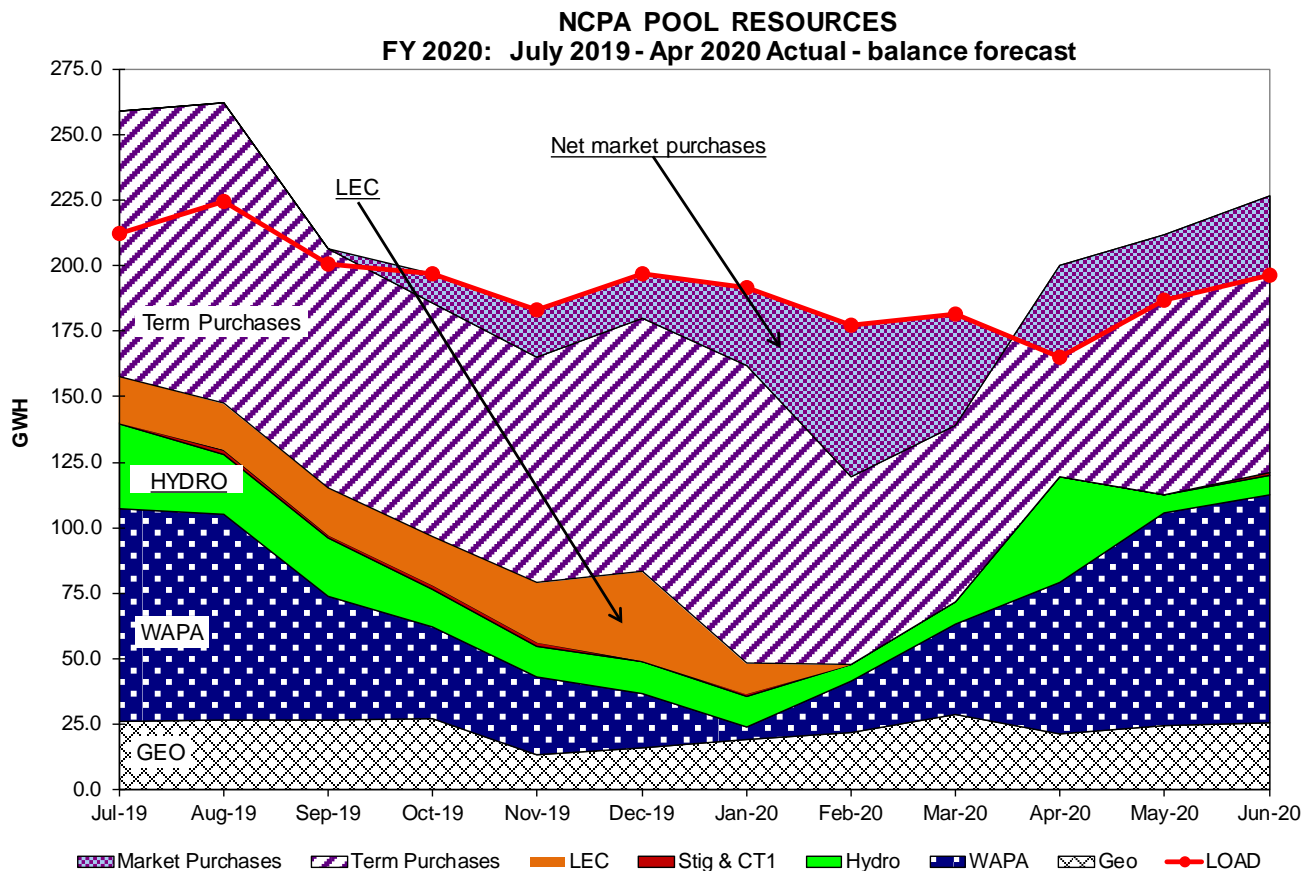
\* STIG and CT costs include forward natural gas and basis hedge transactions.

\* 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 July 2020:
  - Monthly System Resource Adequacy Demonstration (filed May 17, 2020)
  - Monthly Supply Plan (May 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**

- 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**

- 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.

#### **Extended Day-Ahead Market**

- 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 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.
- Next meeting: June 22, 2020.

### 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 for System capacity and replacing it with "less complicated" counting rules similar to eastern RTOs, import eligibility, exemptions, and redefining Planned and Forced outages.
- CAISO published a Third Revised Straw Proposal and scheduled a stakeholder meeting for 1/7/2020. Maximum import capability calculation and allocation portions were moved to a separate and distinct placeholder initiative. CAISO removed long and fast ramp proposals. However, CAISO failed to adequately address NCPA's concerns regarding jurisdiction, hydro counting, and the UCAP deficiency tool, among others. NCPA will continue to advocate at meetings and in comments.
- 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 marketCAISO 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 that 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.
- Next meeting: June 15, 2020.

## Day-Ahead Market Enhancements

- 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.
- CASIO 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 Energy: replaces RUC process used to address gaps between bid in demand and forecast demand.
- CAISO reviewed two options for applying IRP and REN:
  - Option 1 – Financial
    - Co-optimizes bid-in demand, ancillary services and imbalance reserves
    - Imbalance reserves cover historical uncertainty between IFM cleared net load and FMM net load
    - Exceptional dispatch if IFM clears inconsistent with operational needs
  - Option 2 – Financial + Forecast
    - Co-optimizes bid-in demand, ISO reliability capacity, ancillary services and imbalance reserves
    - Imbalance reserves cover historical uncertainty between ISO's Day-Ahead net load forecast and FMM net load
    - Reliability capacity covers differences between ISO net load and cleared net load
    - Exceptional dispatch if IFM/RUC clears inconsistent with operational needs
- CAISO reviewed policy alignment and relationships among Day-Ahead Market Enhancements, Extending Day-Ahead Market to EIM, and Resource Adequacy Enhancements. Fall 2021 target.
- NCPA Comments included tentative support of Option 2 along with requests for special Load Following MSS cost allocation netting.
- March stakeholder meetings were contentious with significant opposition to the Reliability Energy/Capacity products. NCPA's cost allocation concerns still have not

yet been addressed and we will express such concerns in the next round of comments. Fall 2021 implementation is unlikely for this initiative as well. Seems as if all timelines should be reassessed once the new CAISO CEO is onboard.

- Next meeting scheduled for June 4, 2020.

#### Maximum Import Capability Stabilization

- 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.
- Next meeting: May 28, 2020.

#### 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 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 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 <sup>1</sup> (MWh)	BR Delivered (MWh)	Difference (MWh)	Base Resource & Restoration Fund (\$)	Monthly Cost of BR <sup>2</sup> (\$/MWh)	CAISO LMP Differential <sup>3</sup> (\$/MWh)	12-Mo Rolling Avg. Cost of BR <sup>4</sup> (\$/MWh)
Jul-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	\$962,107	\$ 46.29	\$ 0.11	\$ 30.64
Jan-20	9,331	7,749	(1,582)	\$962,107	\$ 124.16	\$ 0.15	\$ 31.14
Feb-20	17,163	19,458	2,295	\$962,107	\$ 49.45	\$ (0.00)	\$ 31.33
Mar-20	27,643	34,397	6,754	\$962,107	\$ 27.97	\$ 0.03	\$ 30.38
Apr-20	52,877	57,797	4,920	\$2,167,410	\$ 37.50	\$ 0.09	\$ 29.89
May-20	84,464	-	(84,464)	\$2,167,410	\$ 25.66	\$ -	\$ 30.60
Jun-20	90,039	-	(90,039)	\$2,167,410	\$ 24.07	\$ -	\$ 31.00
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 57,797 MWh Base Resource (BR) energy in April 2020. This includes 4,841 MWh of Displacement Energy for an estimated savings of \$27,737 or about \$5.70/MWh.
- Pool Members' total savings under Market Efficiency Enhancement Agreement (MEEA) for Pool Members was approximately \$4,900 in April 2020. FY 2020 so far shows a net MEEA savings of \$5,400. 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. The earliest Base Resource customers can expect the contract would be June 2020. WAPA will send a notice on the updated contract publication timeline by the end of May. After the contract has been sent out, each entity will have six months to execute the contract.

### FY2020 Restoration Fund Mid-Year Adjustment

- On May 12, 2020 WAPA announced that the Bureau of Reclamation will forego a mid-year Central Valley Project Improvement Act (CVPIA) Mitigation and Restoration Fund adjustment to power due to the court's decision. WAPA will continue to bill at the current rate of \$19,104,721.85 until the next assessment begins in September. Reclamation will evaluate the power customers' CVPIA mitigation and restoration assessment methodology in conjunction with the CVPIA true-up and Business Practice Guidelines (BPG) update. NCPA expects Reclamation to share additional information on the BPG review and process early June 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 associated with EIM. WAPA held its first informal customer meeting on the 2021 rate case, and expects to complete the informal process by July 2020. The effective date of the new rate schedules in April 1, 2021. Next informal meeting: June 8, 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 approval from PG&E, propose and finalize an operating procedure, and amend the Generator Interconnection Agreements.

#### 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 CASIO 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 ISO, however CAISO pointed out a few quality issues which NCPA is working to address. NCPA is still waiting review and comments from ISO on the remaining units.

## **Debt and Financial Management**

- After having reduced rates essentially to zero in March, the Federal Reserve focused on mobilizing its arsenal of emergency lending programs to shore up corporations and stabilize the fragile markets.
- At its April meeting, the Federal Open Market Committee acknowledged the hardships the pandemic has caused, noted considerable risks for the U.S. economy over the medium term, and signaled it will maintain current policy until “the economy has weathered recent events and is on track to achieve its maximum employment and price stability goals.” Fed Chair Jerome Powell commented that the Fed would use all of its tools to support the economy “forcefully, proactively, and aggressively.”
- The U.S. economy lost 20.5 million jobs in April, erasing nearly all the jobs created since the 2008-2009 recession. Unemployment spiked to 14.7%, the highest level since the Great Depression, and is likely still under-reported. Some 6.4 million people left the workforce, pushing the labor force participation rate down to 60.2%, the lowest since 1973. The number of Americans applying for unemployment benefits topped 30 million.
- In light of the given economic situation and the belief we may remain at these depressed levels for quite some time, the Finance Committee recommended we pause on entering into a forward starting swap regarding the refunding of the 2012 Hydroelectric bonds. The Committee requested that NCPA staff continue to monitor the market and provide updates at the quarterly meetings.

## **Schedule Coordination Goals**

### **Software Development**

- Technology upgrade and development of the NADS application is in progress. IS staff in coordination with NCPA Power Management, Consultant and CAISO is preparing for Market Simulation this month of April. The go-live date is scheduled to coincide with the MSG rollout for LEC.
- IS Staff continues to provide support for activities related to the COVID-19 to ensure that all schedule apps remain accessible for both internal and external access. Collaboration and productivity maintained through the use of the Microsoft Teams platform.
- Review of the current Accounting Business Process was done via online meetings sessions. Accounting, IS, and the vendor are moving forward with the Accounting Systems upgrade plan. Target completion in July 2020.

## **Network**

- Operations and Support has upgraded the Enterprise WIFI solution and access points within the HQ building and CTs with updated technology to increase network throughput. Geo and Hydro will be completed in the coming weeks.
- Progress continues to be made upgrading staff to Windows 10 with over 86% 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 helped to integrate NID's South Combie Power House into NCPA's real-time dispatch and scheduling systems as it went live on May 1<sup>st</sup>. We are continuing to work with their staff to implement remote control functionality of the project in the coming weeks.
- 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.

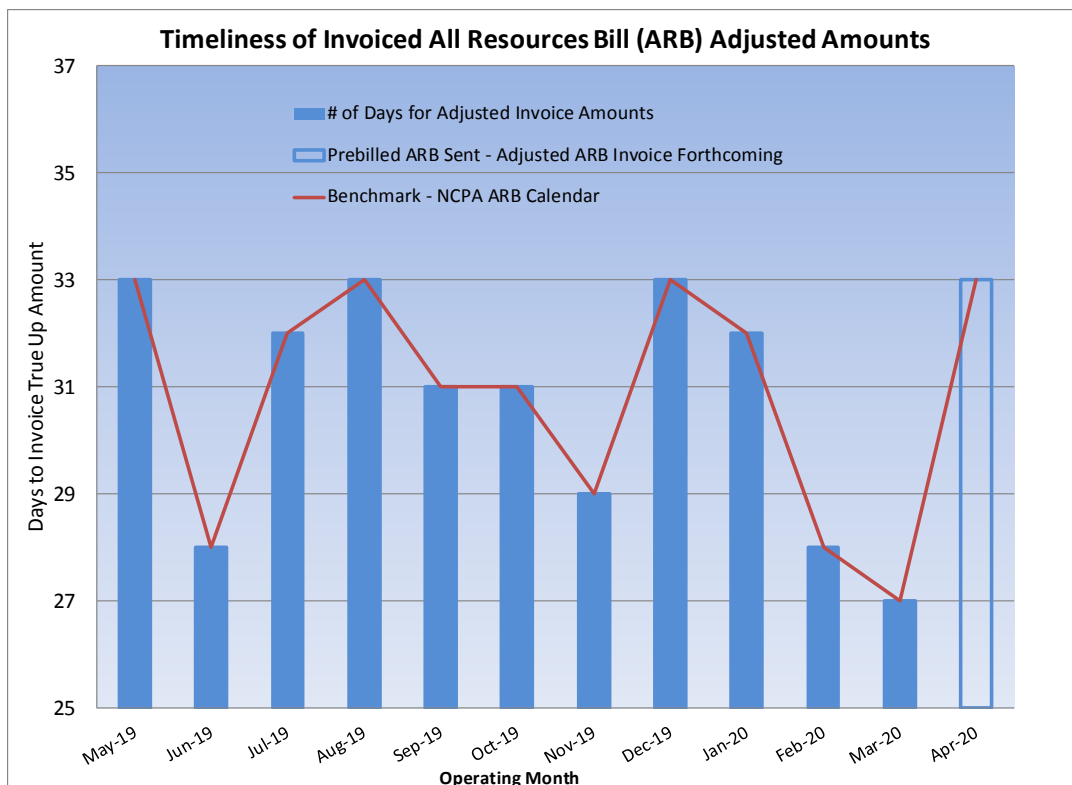
## **NCPA Bills & Settlements**

### **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 April 2020 NCPA All Resources Bill (ARB) monthly invoice sent to members on March 24, 2020 contains:

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



## **Legislative & Regulatory**

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

#### **State Legislative Update**

The State Assembly returned from recess on May 4 and the State Senate reconvened on May 11. Both houses are holding policy committee hearings, with a prioritized focus on bills related to COVID-19, wildfires, and homelessness. NCPA continues to analyze and discuss legislation with members, as well as with legislative staff.

- On May 14, the Governor released the May revision of the state budget for fiscal year 2020-21. The proposal includes spending reductions, draws from reserves, and borrowing from special funds to attempt to balance the more than \$54 billion anticipated reserve. Legislators are beginning their budget review process and must pass a proposal for a balanced budget by June 15<sup>th</sup>. Adjustments to the budget are expected late summer, after the state has a better idea of the fiscal impacts of COVID-19.
- As part of its external affairs function, the NCPA L&R Team has been reviewing NCPA's website and refreshing content. Staff will continue to work with all Agency staff to implement changes as needed to ensure information remains current.

## **Federal Legislative Update**

To date, Congress has passed a total of four coronavirus relief packages and will soon return to DC to consider additional aid measures. NCPA continues to work with our delegation to include measures to help protect and mitigate the impacts of the health crisis on our member utilities and their communities.

- In light of the COVID-19 outbreak and the difficulties in hosting in-person policy conferences, NCPA is launching a web-based Speaker Series designed to educate policymakers and inform our members of the rapidly-evolving state and federal policy landscape via a user-friendly online platform. Speakers will include influential lawmakers and thought leaders on the front lines of the policy discussions surrounding the COVID-19 outbreak. Assemblymember Jim Wood (D-Healdsburg) will kick off the Speaker Series on May 12<sup>th</sup> with a discussion on wildfires, COVID-19, and the state budget.

## **Human Resources**

### **Hires:**

- Marc Pelletier was hired as Plant Manager at our Geothermal Facilities effective April 6, 2020. He brings over 20 years of management, engineering, and operations experience in the electric utility including Geothermal and Gas Turbine operations. Marc spent the last six years with WorleyParsons Engineering in roles ranging from Manager of Engineering, Manager of Power Generation Projects, Director of Operations, to his last position as Program Director managing teams over 80 staff. Marc earned a BS in Marine Engineering from the California Maritime Academy.
- Jerel Moore was hired as a Hydro Tech at our Hydroelectric Facilities effective April 20, 2020. Jerel brings over 16 years of technician experience having most recently worked as a Test Technician at Southern California Edison. He is also a military veteran having served in the Navy as a Reactor Operator/Electronics Technician (Nuclear). Jerel earned an MBA from Pepperdine University.

### **Intern Hires:**

None.

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

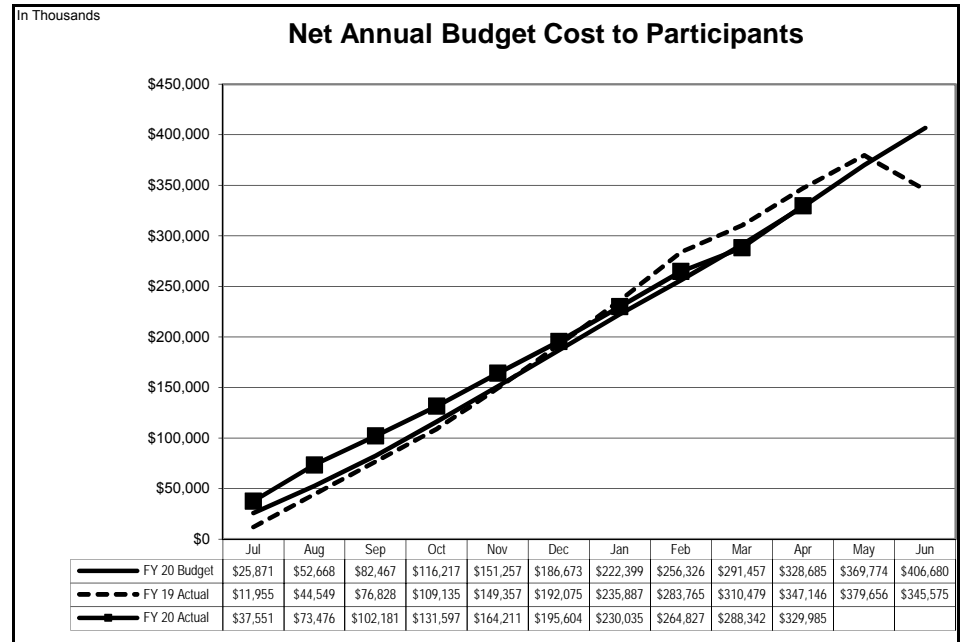
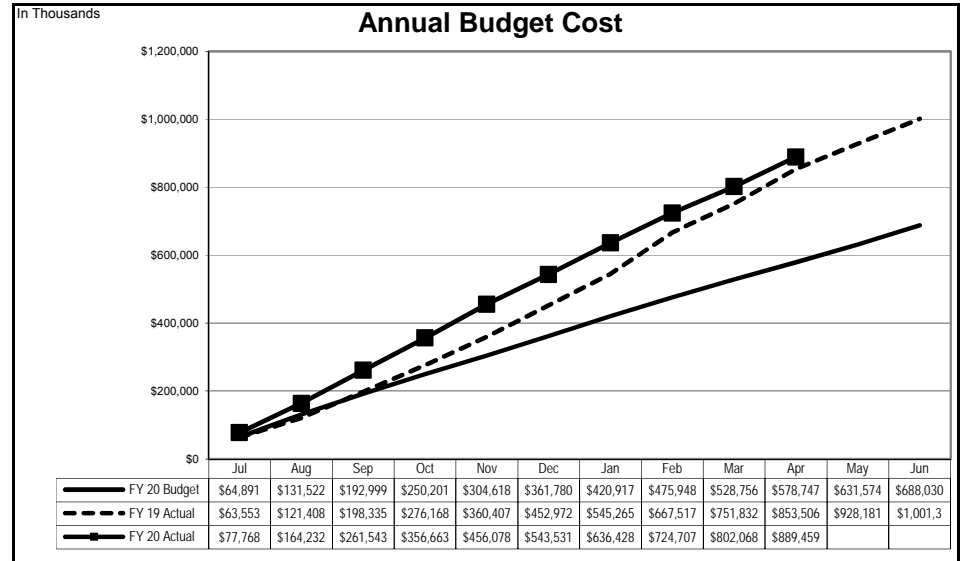
None.

### **Separations:**

- Vicki Cichocki, Human Resources Manager, retired from her position at our Headquarters office after five years of service with NCPA, effective April 10, 2020.

**Annual Budget  
2019-2020 Fiscal Year To Date  
As of April 30, 2020**

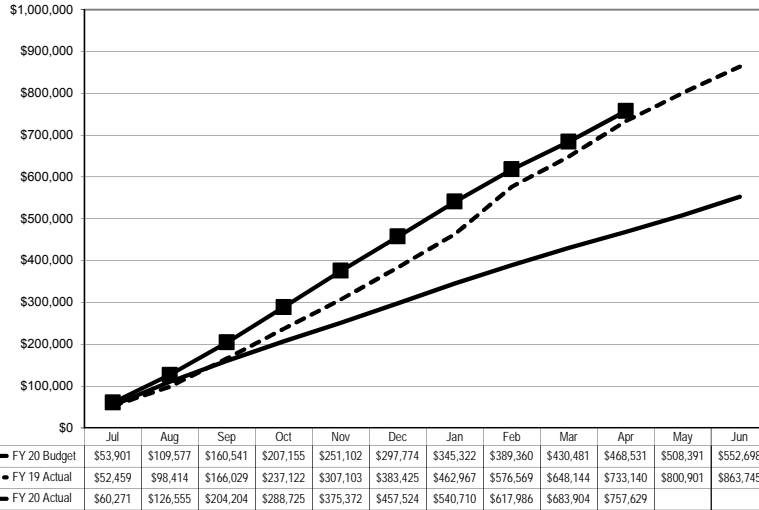
In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
<b>GENERATION RESOURCES</b>				
<b>NCPA Plants</b>				
Hydroelectric	54,074	43,759	\$ 10,315	19%
Geothermal Plant	35,311	30,054	5,257	15%
Combustion Turbine No. 1	6,170	4,875	1,294	21%
Combustion Turbine No. 2 (STIG)	9,438	7,655	1,783	19%
Lodi Energy Center	92,960	82,203	10,757	12%
	197,953	168,546	29,407	15%
<b>Member Resources - Energy</b>	56,229	51,235	4,994	9%
<b>Member Resources - Natural Gas</b>	3,541	3,486	55	2%
<b>Western Resource</b>	23,325	18,535	4,790	21%
<b>Market Power Purchases</b>	15,123	19,887	(4,764)	-31%
<b>Load Aggregation Costs - ISO</b>	256,030	493,384	(237,354)	-93%
<b>Net GHG Obligations</b>	497	2,556	(2,059)	-414%
	552,698	757,629	(204,930)	-37%
<b>TRANSMISSION</b>				
Independent System Operator	117,089	117,360	(271)	0%
<b>MANAGEMENT SERVICES</b>				
<b>Legislative &amp; Regulatory</b>				
Legislative Representation	2,132	1,596	536	25%
Regulatory Representation	748	561	188	25%
Western Representation	745	495	250	34%
Customer Programs	424	213	211	50%
	4,049	2,865	1,185	29%
<b>Judicial Action</b>	625	465	160	26%
<b>Power Management</b>				
System Control & Load Dispatch	6,082	4,924	1,158	19%
Forecasting & Prescheduling	2,934	2,070	864	29%
Industry Restructuring	414	303	111	27%
Contract Admin, Interconnection Svcs & Ext. Affairs	954	782	172	18%
Gas Purchase Program	77	53	24	31%
Market Purchase Project	111	74	37	33%
	10,573	8,207	2,366	22%
<b>Energy Risk Management</b>	212	124	88	41%
<b>Settlements</b>	980	644	335	34%
<b>Integrated System Support</b>	243	64	179	74%
<b>Participant Pass Through Costs</b>	1,560	962	598	38%
<b>Support Services</b>	-	1,140	(1,140)	
	18,243	14,471	3,772	21%
<b>TOTAL ANNUAL BUDGET COST</b>	688,030	889,459	(201,429)	-29%
<b>LESS: THIRD PARTY REVENUE</b>				
Plant ISO Energy Sales	127,624	67,718	59,905	47%
Member Resource ISO Energy Sales	29,156	22,098	7,058	24%
Member Owned Generation ISO Energy Sales	67,108	52,701	14,407	21%
NCPA Contracts ISO Energy Sales	15,623	14,810	813	5%
Western Resource ISO Energy Sales	18,304	16,751	1,553	8%
Load Aggregation Energy Sales	-	285,922	(285,922)	
Ancillary Services Sales	4,197	4,649	(452)	-11%
Transmission Sales	110	92	18	17%
Western Credits, Interest & Other Income	19,227	94,733	(75,505)	-393%
	281,350	559,475	(278,124)	-99%
<b>NET ANNUAL BUDGET COST TO PARTICIPANTS</b>	406,680	329,985	\$ 76,695	19%



## Annual Budget Budget vs. Actual By Major Area As of April 30, 2020

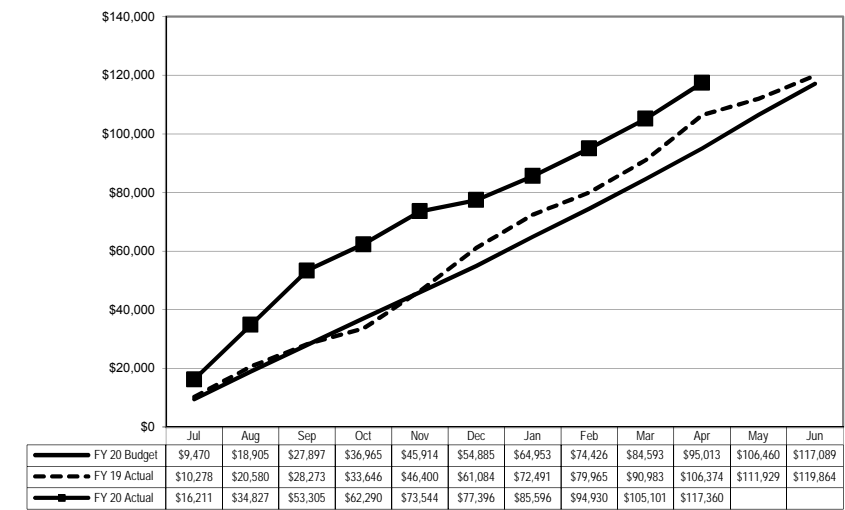
In Thousands

### Generation Resources



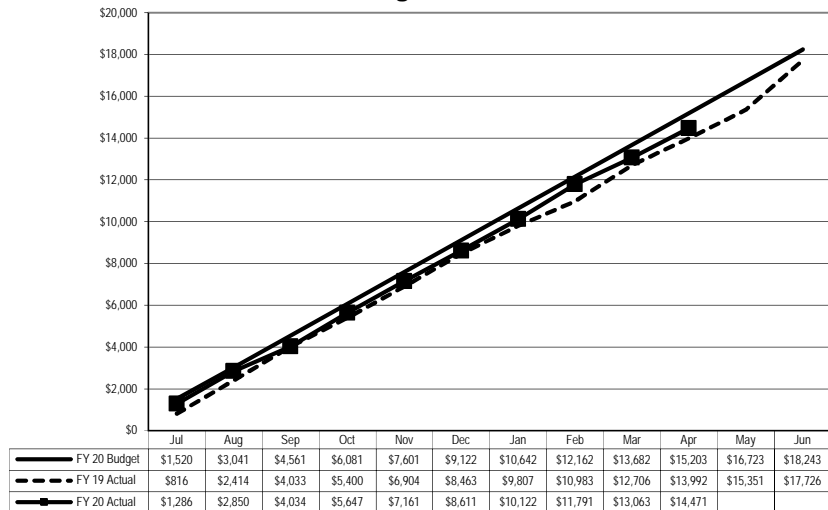
In Thousands

### Transmission-ISO



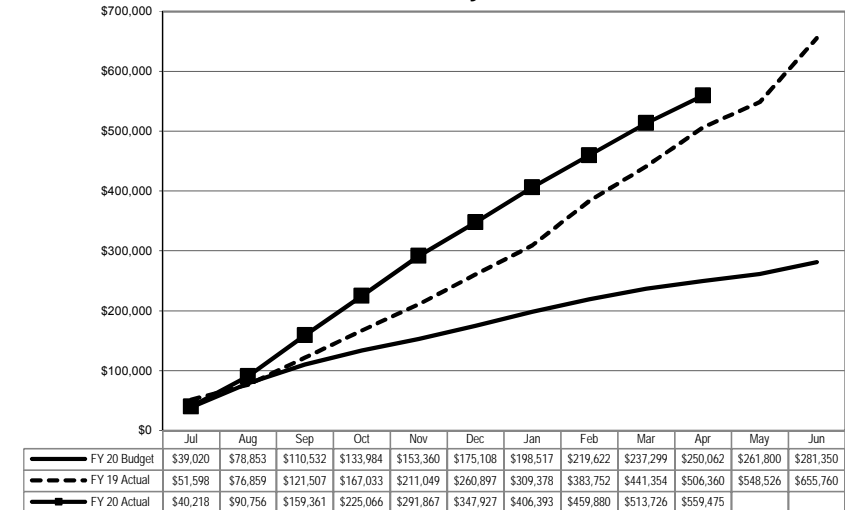
In Thousands

### Management Services



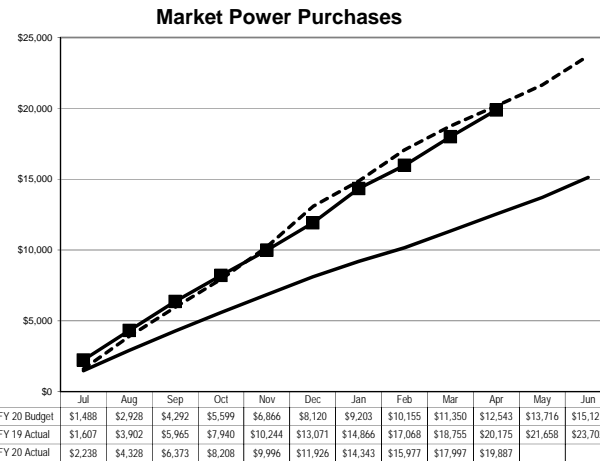
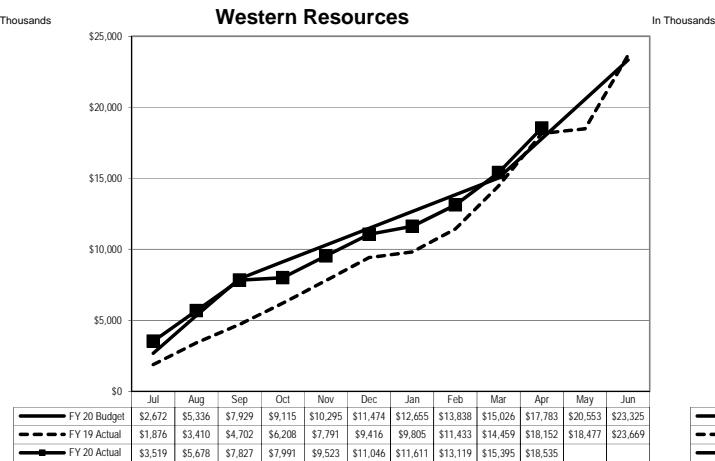
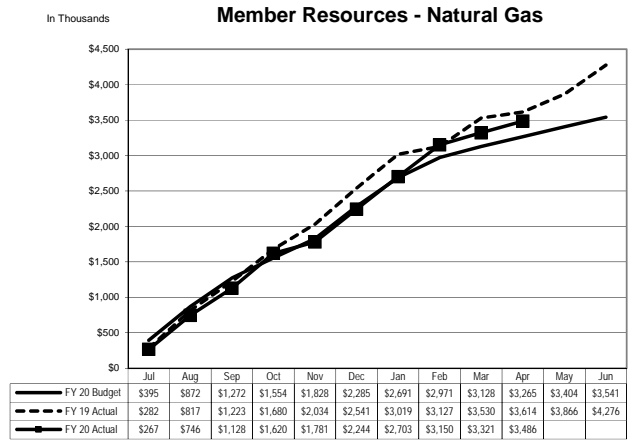
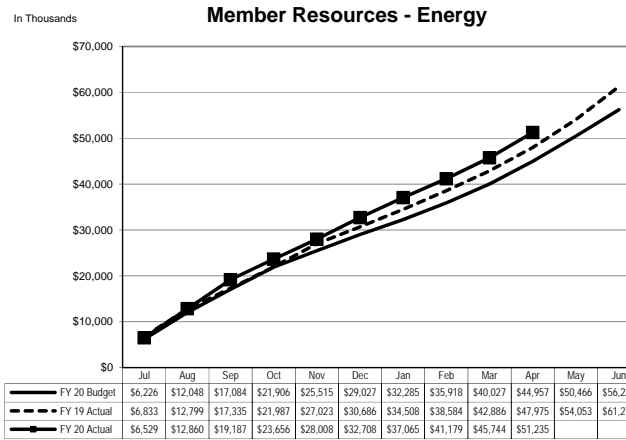
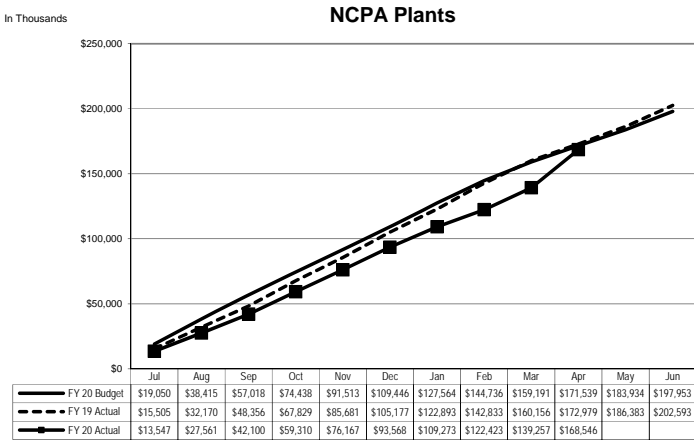
In Thousands

### Third Party Revenue



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

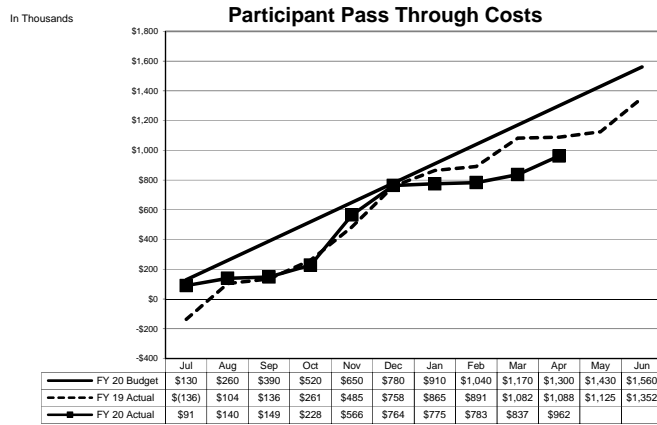
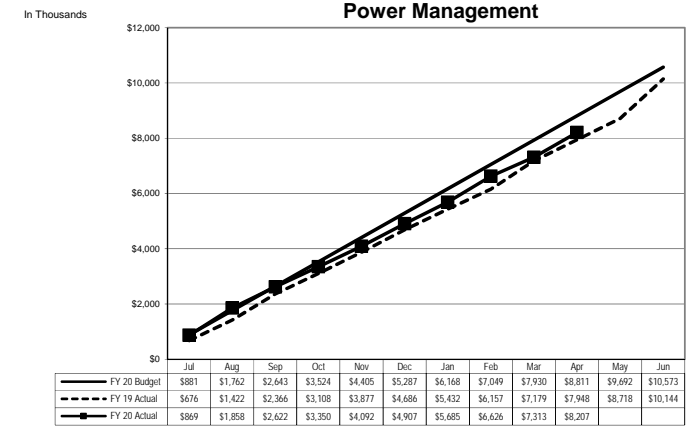
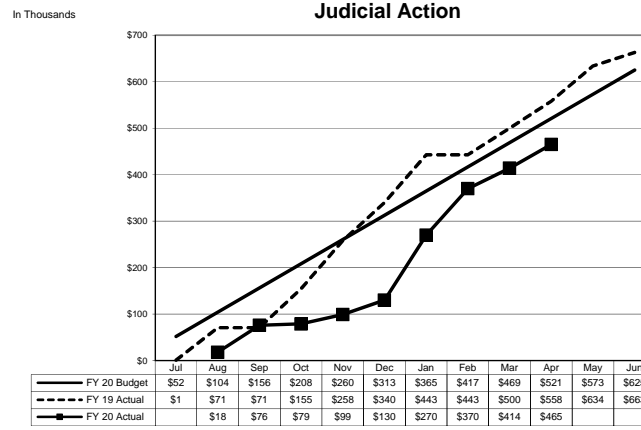
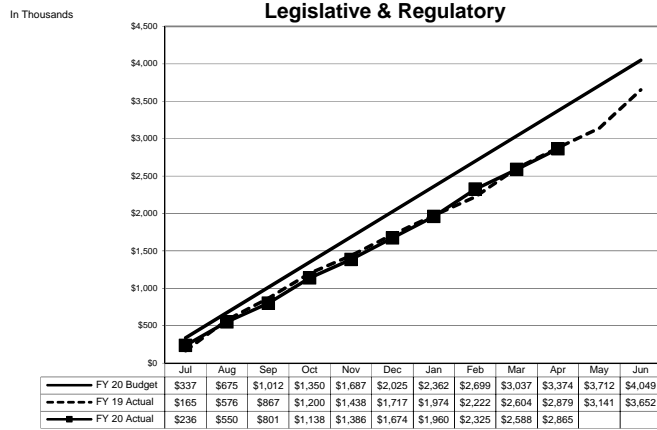
## Annual Budget Cost Generation Resources Analysis By Source As of April 30, 2020



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



## Annual Budget Cost Management Services Analysis By Source As of April 30, 2020

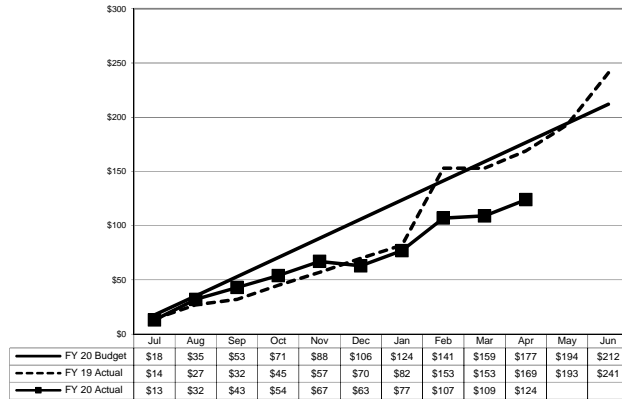


**Annual Budget Cost  
Management Services Analysis By Source  
As of April 30, 2020**

In Thousands

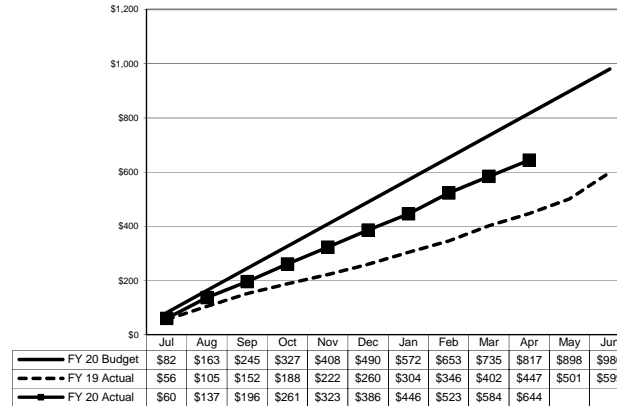
**Energy Risk Management**

In Thousands

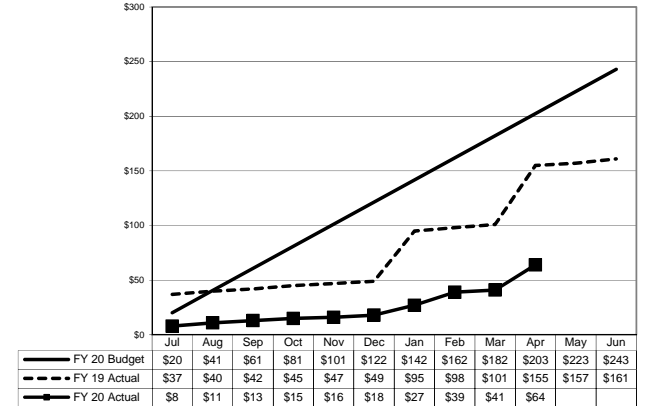


**Settlements**

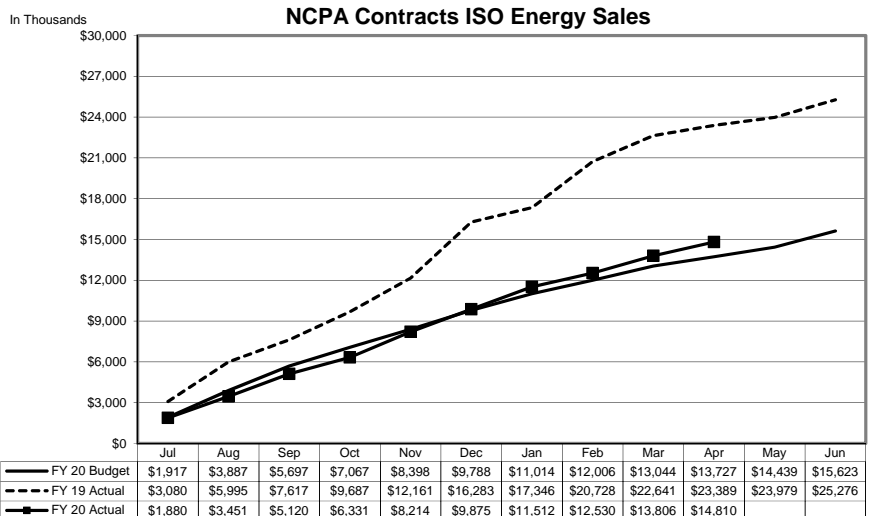
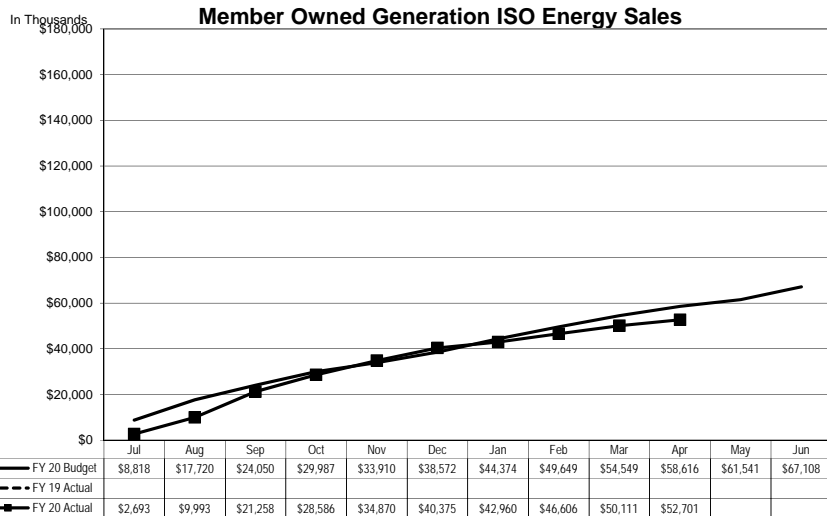
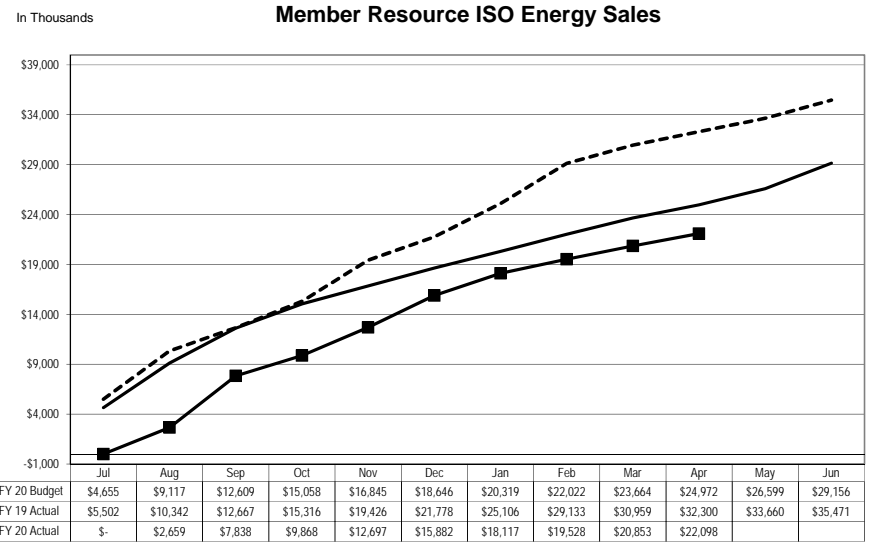
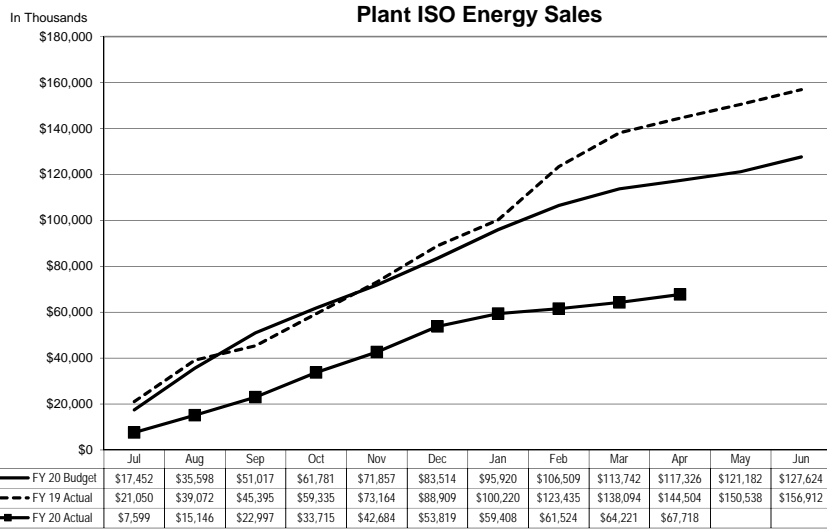
In Thousands



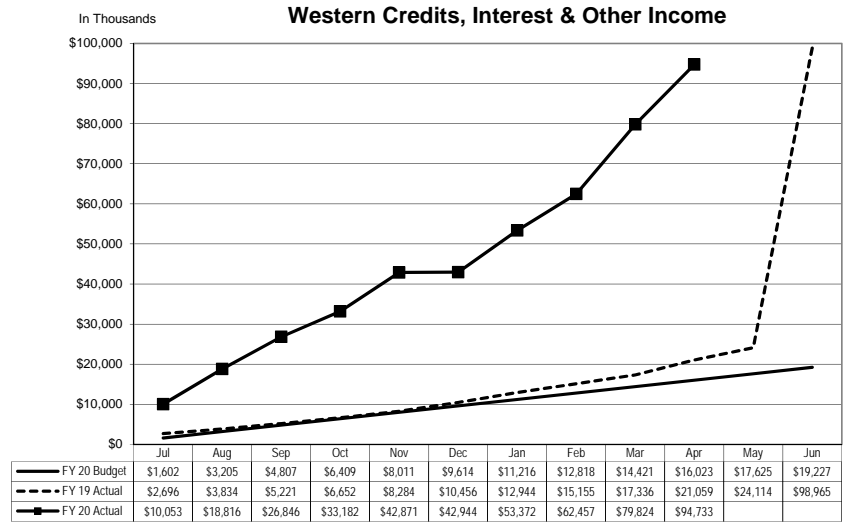
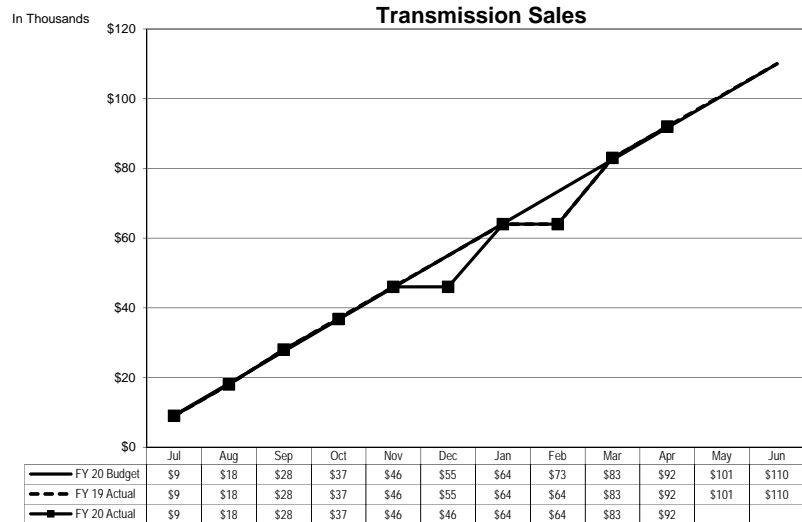
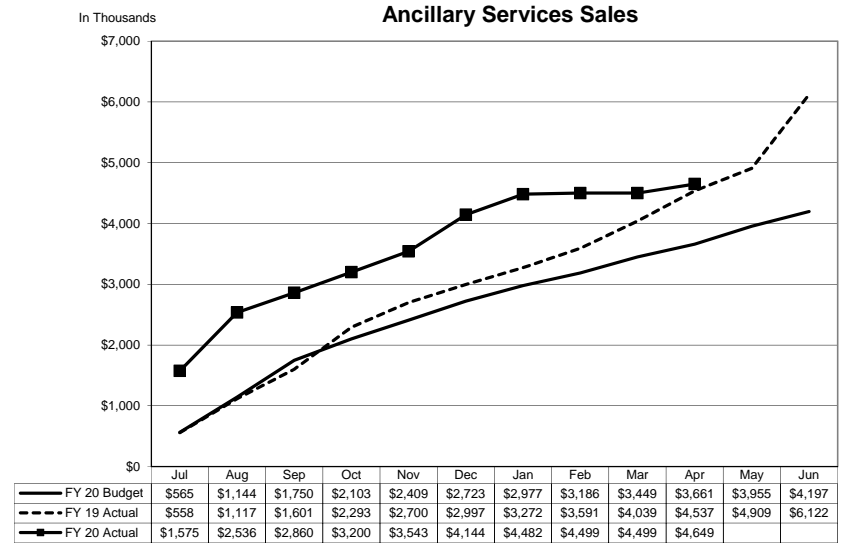
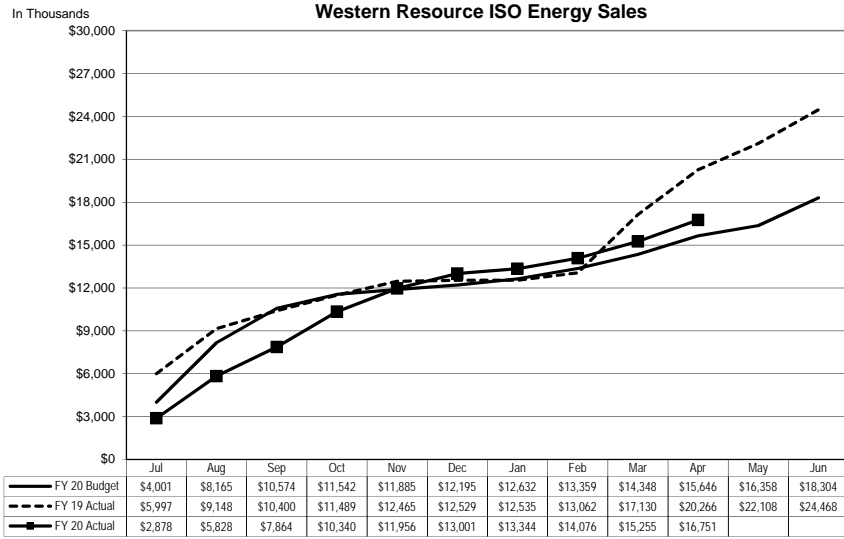
**Integrated Systems Support**



**Annual Budget Cost  
Third Party Revenue Analysis By Source  
As of April 30, 2020**



**Annual Budget Cost  
Third Party Revenue Analysis By Source  
As of April 30, 2020**



**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of April 30, 2020**

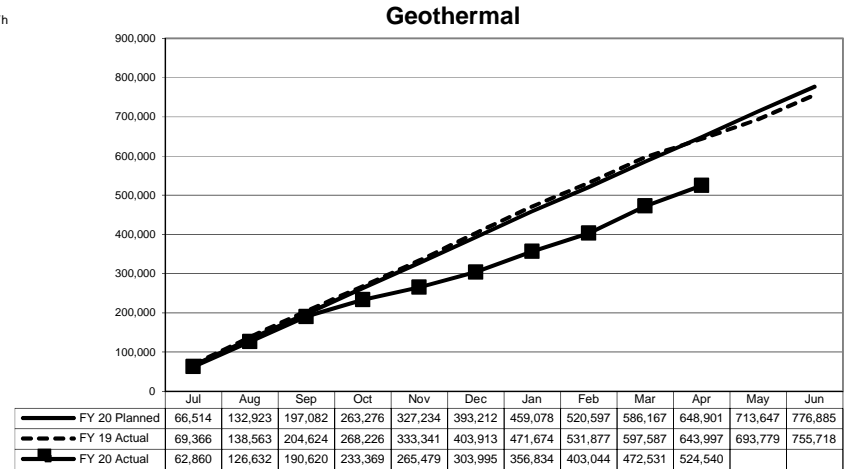
**Generation Cost Analysis**

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 18,456	\$ 15,519	\$ 29.59	\$ 2,937	16%
Capital Assets/Spare Parts Inventories	3,645	3,553	6.77	92	3%
Other Costs	7,640	6,105	11.64	1,535	20%
CA ISO Charges	625	756	1.44	(131)	-21%
Debt Service	4,946	4,121	7.86	824	17%
Annual Budget	35,311	30,054	57.30	5,257	15%
Less: Third Party Revenue					
Interest Income	382	205	0.39	177	46%
ISO Energy Sales	29,481	17,024	32.45	12,457	42%
Ancillary Services Sales	-	-	-	-	-
Effluent Revenues	750	657	1.25	93	12%
Misc	110	94	0.18	16	15%
	30,723	17,980	34.28	12,743	41%
Net Annual Budget Cost to Participants	\$ 4,588	\$ 12,074	\$ 23.02	\$ (7,487)	-163%
Net Generation--MWh @ Meter	776,885	524,540			
\$/MWh (A)	\$ (0.46)	\$ 15.16			

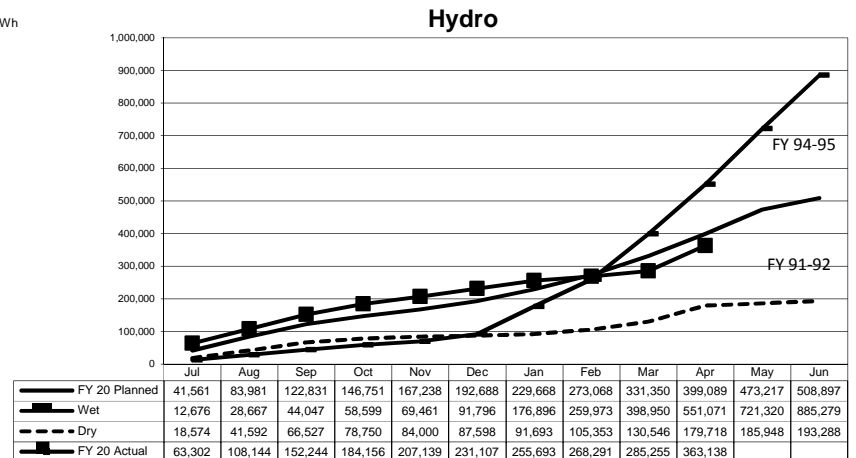
**MWhs Generated**

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 450	\$ 6,965	\$ 19.18	\$ (6,515)	-1449%
Capital Assets/Spare Parts Inventories	4,775	3,890	10.71	885	19%
Other Costs	12,078	2,616	7.20	9,461	78%
CA ISO Charges	3,465	2,531	6.97	934	27%
Debt Service	33,307	27,756	76.43	5,551	17%
Annual Budget	54,074	43,759	120.50	10,315	19%
Less: Third Party Revenue					
Interest Income	670	413	1.14	257	38%
ISO Energy Sales	23,455	14,601	40.21	8,854	38%
Ancillary Services Sales	2,539	3,245	8.94	(706)	-28%
Misc	-	404	1.11	(404)	
	26,664	18,664	51.40	8,000	30%
Net Annual Budget Cost to Participants	\$ 27,410	\$ 25,094	\$ 69.10	\$ 2,315	
Net Generation--MWh @ Meter	508,897	363,138			
\$/MWh (A)	\$ (11.59)	\$ (7.33)			

In MWh



Footnotes:

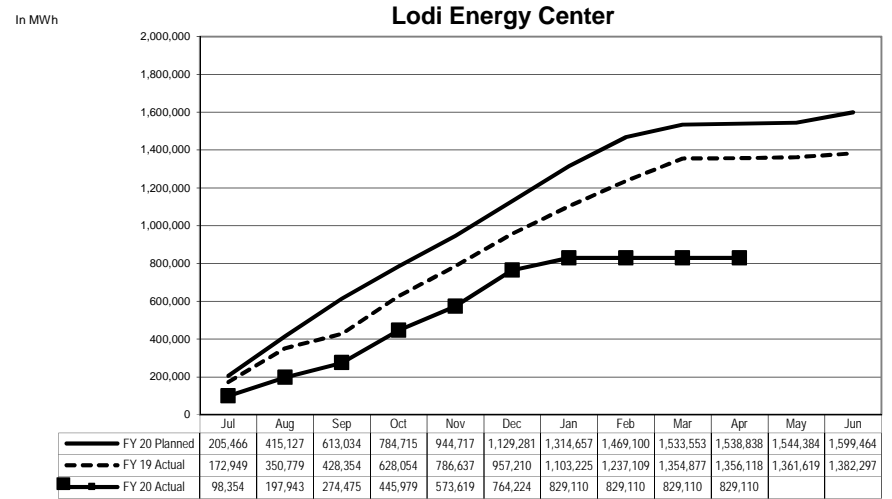
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of April 30, 2020**

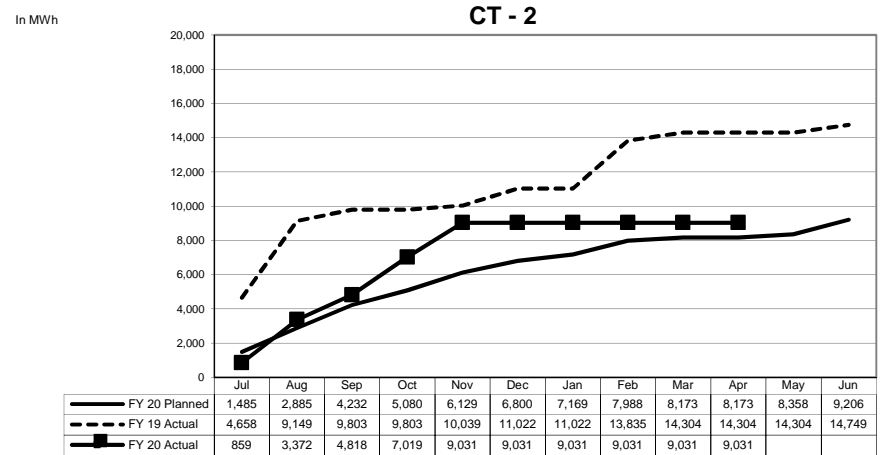
**Generation Cost Analysis**

	Lodi Energy Center				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 14,101	\$ 10,662	\$ 12.86	\$ 3,439	24%
Fuel	39,513	20,668	24.93	18,845	48%
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	23,576	28.44	(18,243)	-342%
Other Costs	3,249	2,867	3.46	382	12%
Debt Service	26,054	21,712	26.19	4,342	17%
Annual Budget	92,960	82,203	99.15	10,757	12%
Less: Third Party Revenue					
Interest Income	386	552	0.67	(167)	-43%
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	-	21,422	25.84	(21,422)	0%
	74,421	57,742	69.64	16,679	22%
Net Annual Budget Cost to Participants	\$ 18,539	\$ 24,461	\$ 29.50	\$ (5,922)	-32%
Net Generation--MWh @ Meter	1,599,464	829,110			
\$/MWh (A)	\$ (4.70)	\$ 3.32			

**MWhs Generated**



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,595	\$ 1,170	\$ 129.61	\$ 425	27%
Fuel and Pipeline Transport Charges	1,089	870	96.31	219	20%
Capital Assets/Spare Parts Inventories	418	328	36.36	90	21%
Other Costs	486	379	41.99	107	22%
CA ISO Charges	53	77	8.55	(24)	-45%
Debt Service	5,796	4,830	534.88	966	17%
Annual Budget	9,438	7,655	847.69	1,783	19%
Less: Third Party Revenue					
Interest Income	109	88	9.78	20	19%
ISO Energy Sales	819	697	77.22	122	15%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	1,687	1,301	144.11	386	23%
Misc	-	-	-	-	0%
	2,615	2,087	231.11	528	20%
Net Annual Budget Cost to Participants	\$ 6,823	\$ 5,568	\$ 616.58	\$ 1,255	18%
Net Generation--MWh @ Meter	9,206	9,031			
\$/MWh (A)	\$ 111.53	\$ 81.70			



**Footnotes:**

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

**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of April 30, 2020**

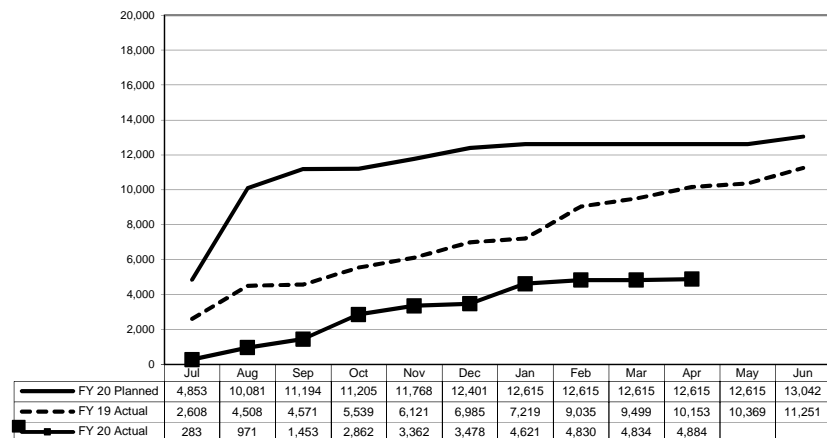
**Generation Cost Analysis**

	Combustion Turbine No. 1				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 2,268	\$ 1,995	\$ 408.39	\$ 273	12%
Fuel and Pipeline Transport Charges	975	394	80.77	581	60%
Capital Assets/Spare Parts Inventories	2,110	1,707	349.42	403	19%
Other Costs	747	604	123.70	143	19%
CA ISO Charges	69	175	35.83	(106)	-153%
Debt Service	-	-	-	-	-
Annual Budget	6,170	4,875	998.10	1,294	21%
Less: Third Party Revenue					
Interest Income	-	26		(26)	
ISO Energy Sales	1,266	822	168.20	444	35%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	16	3.20	(16)	0%
	1,266	863	171.40	403	32%
Net Annual Budget Cost to Participants	\$ 4,904	\$ 4,012	\$ 821.43	\$ 891	18%
Net Generation--MWh @ Meter	13,042	4,884			
\$/MWh (A)	\$ 375.97	\$ 821.43			

**MWhs Generated**

In MWh

**CT - 1**



**Footnotes:**

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