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# BUSINESS PROGRESS REPORT

## February 2023

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# Generation Costs & Reliability

## Combustion Turbine Project

### Unit Operation for January 2023

Unit	Availability		Production			Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	0.0	MWh	CAISO / CAISO
	100.0%	100.0%	Unit 2	0.0	MWh	
Curtailments, Outages, and Comments:						
Unit 1: Normal Operation.						
Unit 2: Normal Operation.						
Unit	Availability		Production			Reason for Run
CT1 Lodi	100.00%		0.0 MWh			CAISO
Curtailments, Outages, and Comments:						
Normal operation.						
Unit	Availability		Production			Reason for Run
CT2 STIG	99.0%		0.1 MWh			CAISO
Curtailments, Outages, and Comments:						
1/09 @ 14:18 - 21:54; GSU transformer bus duct repair, OMS 12965926						
Unit	Availability		Production			Reason for Run
LEC	100.0%		166,178 MWh			CAISO
Curtailments, Outages, and Comments:						
Normal operation.						

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

## Geothermal Facilities

### Availability/Production for January 2023

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	94.35 %	27,439 MWh	U1 In service, down on 1/26/23 due to PGE line outage
Unit 2	92.64 %	25,370 MWh	U2 was in service, down on 1/26/23 due to PGE line outage
Unit 3	N/A %	N/A -	Unit 3 remains out of service.
Unit 4	0 %	0 MWh	Unit 4 was in an outage
Southeast Geysers Effluent Pipeline	94 %	120.4 mgallons	Average flow rate: 2,680 gpm
Southeast Solar Plant	N/A	52,044 KWh	Year-to-date KWh: 1,531,919
Bear Canyon Pump Station Zero Solar	N/A	36,593 KWh	Year-to-date KWh: 1,155,726

\* Accounts for an additional 1,092 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

## Hydroelectric Project

### Availability/Production for January 2023

Units	Availability	Net Electricity Generated	Out-of-Service
<b>Collierville Unit 1</b>	99.73%	54476 MWh	CV Unit 1 – Out of Service on 1/1/23 from 0000 to 0158 due to High Tailwater.
<b>Collierville Unit 2</b>	99.62%	52392 MWh	CV Unit 2 – Out of Service on 1/1/23 from 0000 to 0113 for High Tailwater and on 1/4/23 from 0731 to 2106 Unit Trip
<b>Spicer Unit 1</b>	96.51%	715 MWh	NSM1- Out of Service on 1/30/23 to 1/31/23 from 1231 to 1428 for 480 Volt Bus Trouble
<b>Spicer Unit 2</b>	98.35%	734 MWh	NSM2- Out of Service on 1/19/23 from 0151 to 1409 for Failed to Start.
<b>Spicer Unit 3</b>	66.55%	132 MWh	NSM3- Out of Service on 1/1/23 to 1/3/23 from 0000 to 1347 for DTT Comm Trouble and on 1/16/23 to 1/18/23 from 0611 to 1603 and on 1/26/23 to 1/31/23 from 0007 to 1344 for 480 Volt Bus Trouble

#### Operations & Maintenance Activities:

- CMMS work orders
- Winter Access Issues
- Plant Emergency issues

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

- There were Lost Time Accidents in the month of January. CT's reported that a contractor hit a bollard with their vehicle on January 27, 2023, resulting in a scratch on the bollard and a scratch on the truck; no injuries were reported. Geo had one CAL OSHA Recordable incident which occurred on January 30, 2023: an employee working on top of temporary scaffolding slipped, twisting his left knee. After being examined by a doctor, the employee was placed on light duty. NOTE: Since this injury occurred after the last day of the final payroll period for the month of January, this injury will be calculated in the February 2023 Safety Report table.
- 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 January 28, 2023.
- 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.

### January 2023 Generation Services Safety Report

	Hydro	GEO	CT Group *	NCPA HQ **
Cal OSHA Recordable (this month)	0	1	0	0
Cal OSHA Recordable (calendar year)	0	1	0	0
Days since Recordable	839	463	2,854	3,838
Work Hours Since Last Recordable	71,541	98,362	430,231	2,908,481
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	5,588	2,717	10,758	6,851
Work Hours without LTA	504,110	262,572	841,775	2,530,499
Vehicle Incident (month)	0	0	1	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 January 28, 2023.

## 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 2023 Data

	January 2023		Calendar Year 2023	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	327.21 1/30 @ 1900	196,816	327.21 1/30 @ 1900	196,816
SVP	555.75 1/31 @ 1000	384,576	555.75 1/31 @ 1000	384,576
MSSA	880.4 1/31 @ 0900	581,392	880.4 1/31 @ 0900	581,392

#### Last Year 2022 Data\*

	January 2022		Calendar Year 2022	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	322.82 1/3 @ 1800	191,150	511.56 9/6 @ 1600	191,150
SVP	527.78 1/12 @ 1500	364,403	687.74 9/6 @ 1300	364,403
MSSA	841.28 1/3 @ 1800	555,553	1176.2 9/6 @ 1400	555,553

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

#### System Peak Data

	All Time Peak Demand	2023 Peak Demand
NCPA Pool	517.83 MW on 7/24/06 @ 1500	327.21 1/30 @ 1900
SVP	687.74 MW on 9/6/22 @ 1300	555.75 1/31 @ 1000
MSSA	1176.20 MW on 9/6/22 @ 1400	880.4 1/31 @ 0900

- 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		
	January 2023	Calendar Year 2023
MSSA % Within the Band	98.94%	98.94%

### **CAISO Grid TEST NOTICE [202302746] 2023-01-03 06:01:00**

This is the monthly test of the California ISO Alert, Warning & Emergency (AWE) Notification System.

This is only a test - NO ACTION REQUIRED.

### **CAISO Grid TEST NOTICE [202302748] 2023-02-06 08:10:00**

This is the monthly test of the California ISO Alert, Warning & Emergency (AWE) Notification System.

This is only a test - NO ACTION REQUIRED.

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

- NCPA Pool loads during January 2023 were 196,817 MWh versus the budget forecast of 194,945 MWh, resulting in a forecast error of 0.95%. The current weather outlook for February 2023 is for near normal temperatures and below normal rainfall. The Pool's February load forecast is 173,885 MWh compared with extrapolated actuals of 178,285 MWh as of February 13, 2023.
- Lodi Energy Center (LEC) ran 626 hours out of a possible 744 producing 166,180 MWh. Natural gas and power prices are significantly higher than a year ago due to gas basis difference between PG&E City and Henry Hub.
- During January 2023, 16.86" of rain was recorded at the Big Trees gauge. January average rainfall at Big Trees is 8.04". New Spicer Meadows storage increased by just under 1,500 acre feet in January.
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) has been reduced to \$125/MWh. Releases from NSMR have been increased to make room for the above average snowpack. Currently the Central Sierra snowpack is ~139% of April 1<sup>st</sup> average.
- New Spicer Meadows storage as of January 31, 2023 was 80,420 acre feet. The historical average storage at the end of January is 76,149 acre feet. As of February 13<sup>th</sup>, storage was 71,220 acre feet.
- Combined Calaveras Project generation for the Pool in January 2023 totaled 55,140MWh, up from 13,775 MWh in December 2022.
- Western Base Resource (BR) deliveries for the Pool during January 2023 were 4,782 MWh. Displacement program energy totaled 0 MWh. The Pool's share of expected total delivery from the Western Base Resource for February 2023 is 1,300 MWh, with 663 MWh having been delivered through February 14, 2023.
- The PG&E Citygate gas index averaged \$16.32 / MMBtu during the month of January as compared to an average of \$30.53 for December. February 2023 average price is \$6.60 through the 14<sup>th</sup>. The March 2023 PG&E Citygate forward price is \$5.30 / MMBtu.



- Day-Ahead PG&E DLAP electricity prices for January averaged \$153.00 / MWh On-Peak and \$13.55 Off-Peak, with a high of \$264.84. DLAP prices have averaged \$68.78 On-Peak and \$64.07 Off-Peak for the period February 1<sup>st</sup> through the 14<sup>th</sup>. The forward power prices for March are \$58.24 On-Peak and \$52.50 Off-Peak.

## **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 of April 2023:
  - Monthly System Resource Adequacy Demonstration (filed February 15, 2023)
  - Monthly Supply Plan (filed February 15, 2023)

### **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:

#### **Transmission Service and Market Scheduling Priorities**

As part of the Market Enhancements for Summer 2021 Readiness initiative conducted earlier in the year, the ISO committed to undertaking an initiative to develop a long-term, holistic, framework for establishing scheduling priorities in the ISO market. This initiative will evaluate the development of this holistic, long-term, framework while also evaluating near-term enhancements to the current scheduling priority framework.

Approved at February 2023 ISO Board of Governors meeting.

- Next steps:
  - Deployment and activation in fall 2024

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

This initiative will develop an approach to extend participation in the day-ahead market to the Western Energy Imbalance Market (WEIM) entities in a framework similar to the existing WEIM approach for the real-time market, rather than requiring full integration into the CAISO 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.

Approved at February 2023 ISO Board of Governors and WEIM Governing Body joint meeting.

- Next steps:
  - Implementation fall 2024
  - Onboarding spring 2025

#### **Day-Ahead Market Enhancements**

This initiative will explore a new day-ahead product that will address ramping needs between intervals and uncertainty that can occur between the day-ahead and real-time markets.

- Next steps
  - Feb 27, 2023 Workshop
  - Mar 7-8 Workshop
  - Mar 24, 2023 Comments due
  - TBD - Draft business requirements specification and tariff development
  - TBD – Board approval

**Western**

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-22	51,082	26,633	(24,449)	\$1,733,503	\$ 65.09	\$ (0.41)	\$ 68.38
Aug-22	33,542	18,632	(14,910)	\$1,733,503	\$ 93.04	\$ 2.72	\$ 80.68
Sep-22	20,613	7,893	(12,720)	\$1,605,598	\$ 203.42	\$ (0.55)	\$ 92.15
Oct-22	8,931	10,637	1,706	\$609,688	\$ 57.32	\$ 0.67	\$ 100.68
Nov-22	-	4,164	4,164	\$609,688	\$ 146.42	\$ 0.04	\$ 102.78
Dec-22	-	3,591	3,591	\$609,688	\$ 169.78	\$ 0.28	\$ 99.99
Jan-23	12,388	4,782	(7,606)	\$609,688	\$ 127.50	\$ (0.03)	\$ 96.36
Feb-23	18,712	-	0	\$609,688	\$ 32.58	\$ -	\$ 88.18
Mar-23	12,955	-	0	\$609,688	\$ 47.06	\$ -	\$ 86.25
Apr-23	41,280	-	0	\$1,571,328	\$ 38.07	\$ -	\$ 73.19
May-23	74,195	-	0	\$1,571,328	\$ 21.18	\$ -	\$ 56.75
Jun-23	78,807	-	0	\$1,571,328	\$ 19.94	\$ -	\$ 45.37
1/ As forecasted in NCPA 22/23 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 4,782 MWh of Base Resource (BR) energy in January 2023 with an estimated MEEA savings of \$(140). There was zero displaced energy as the program is temporarily suspended.

**CVP Rate Case (Rate Order No. WAPA-207)**

WAPA intends to file a 5-Year Power Formula Rate under Rate Order No. WAPA-207 for Central Valley Project (CVP) Power, Transmission, and Ancillary Services; and the California-Oregon Transmission Project (COTP) Transmission. This is for rate schedules that are set to expire on September 30, 2024 and December 31, 2024. A separate rate case will be conducted for the Pacific Alternating Current Intertie (PACI) rate schedule as the Transmission Exchange Agreement (TEA) is set to expire on December 31, 2024.

WAPA has held three informal meetings so far.

- Key points: No changes to the existing formula rate. No material changes to the redlined rate schedules. WAPA is proposing one rate period for COTP, current rate schedule has four rates, one for each season.
- Next informal customer meeting is scheduled will be held in March or April 2023. WAPA will provide an overview for Formal Process. Formal Process will start in June/July 2023.

## **Interconnection Affairs**

### **Meter Maintenance Program Development**

#### *Background*

- In the past, NCPA administered a Meter Maintenance Program on behalf of select members
- The program is now expired
- CAISO Certified Meters must be certified and repaired in short order
- NCPA staff has been experiencing growing number of challenges without Meter Maintenance Program
- Staff proposed developing new Meter Maintenance Program
- Staff received bids from two (2) vendors
  - Trimark Associates – Final Bid - \$247K Annually
  - Ulteig – Final Bid - \$148K Annually
- Scope Capability

	Trimark	Ulteig
Provide Routine Preventative Meter Maintenance	Yes	Yes
Provide Unplanned Emergency Repair/Replacement (both metering and telecomm equipment )	Included	T&M
Oversee ISP Repairs	Included	T&M
Able to Travel and Service 49 Total Meters throughout Northern CA	Yes	Yes

- September 2022 Facilities Meeting
  - Staff recommended and Committee directed developing a General Services Agreement with Ulteig
  - Committee directed development of a separate Program Agreement for Member cost allocation

#### *Current Status*

- Staff is working with Ulteig on additional details (ex. future meter additions)
- Draft Vendor Agreement and Program Agreement in legal review

### *Next Steps*

- Focus/Ad Hoc meeting to review Program Agreement
- Commission Approval
- Coordinate with Members for Execution

### NERC Standard TOP-003-5 Data Required by CAISO Generator Owners

- California ISO has issued a data request to incorporate cold weather data required by NERC Standard TOP-003-5.
- Generator Owners or their designees shall provide requested data via a CIDI ticket or by submitting the raw data in the CAISO website under Contact Us by July 1, 2023.
- Data request can be provided by using the Extreme Weather Template posted on the CAISO website under Market & Operations > Network and Resource and Modeling > Resource Data Submission section
- Generating unit(s) minimum:
  - 1. Design temperature; or
  - 2. Historical operating temperature; or
  - 3. Current cold weather performance temperature determined by an engineering analysis.
- Temperatures will be communicated in degrees Fahrenheit (F).
- NCPA can submit on Members behalf

### Rate Case Update – TO18 Refunds

#### *Background*

- PG&E calculated refund amount to be \$234M
- PG&E's compliance filing stated ISO is responsible for administering the refunds
- JI protested the refunds calculation citing three issues
- ISO stated it will not issue refunds until there is a FERC Order on PG&E's compliance filing

#### *Current Status*

- JI and PG&E have settled two of the three outstanding issues

#### *Next Steps*

- Mid October – JI and PG&E make a joint filing describing the settlement of two of the three remaining issues and ask FERC to issue an order. This hopefully should allow ISO to issue refunds.

## **Debt and Financial Management**

- At their February meeting, the Federal Reserve continued its march by raising the benchmark interest rate by a quarter percentage point and gave little indication it is nearing the end of this hiking cycle. The increase aligned with market expectations taking it to a target range of 4.5%-4.75%, the highest since October 2007.
- In another surprising report, the US economy added an astonishing 517,000 jobs in January, showing that the labor market isn't ready to cool down just yet. Economists were expecting 185,000 jobs. The report may cause complications for the Federal Reserve because it's difficult to see the Fed stop raising rates and entertain ideas of rate cuts when there is such explosive economic news coming in. The Chairman signaled that a "couple more" rate hikes are on the table this year.
- NCPA staff met with Moody's in late December to review the financials, operational performance, and other miscellaneous questions about the LEC in regard to the credit ratings on the outstanding bonds for both Indenture Groups A & B. The reports were recently published with the following:
  - Moody's affirmed the A1 rating on the Group A bonds with a stable outlook
  - Moody's affirmed the Aa2 rating on the Group B bonds (CDWR) with a stable outlook

## **Schedule Coordination Goals**

### **Software Development**

- Applications and Enhancements under development
  - Development of the Renewable Portfolio Standards application continues and data validation continues. Rollout delayed pending completion of other higher priority projects
  - North Spicer Meadows water release schedule automation in the works
- Integrations
  - Anticipating various new resource integrations for EBCE, the Pool, and SJCE for end of Q2 COD
- IS currently working in collaboration with Accounting and the consultants to streamline the agency's Budgeting Process and Accounting Reports. Accounting is reviewing the current GL Account Codes for potential major restructuring.

### **Network**

- SCADA and Networking team is currently working with EBCE and consultants to configure and integrate Daggett Solar and Battery resource into the power portfolio. Go live is expected in Spring of 2023.
- IS continues the work toward preparing the HQ and DRC Control Centers to be compliant with the NERC CIP Medium standards. This includes working with Compliance department and consulting company Archer to vet vendors that NCPA uses to complete the CIP-013 supply chain standard.
- IS has begun interviews for a new Cyber Security Analyst position that will be responsible to implement and help oversee the technical responsibilities of NERC CIP Medium.
- Operations and Support is working with CT plant personnel to configure their new phone system as part of the Enterprise VOIP upgrade. It is expected to be completed by late January/early February. Dispatch and DRC recorded lines are expected to be cutover by late February.

- IS continues to work with facilities to replace an outdated visitor management software program with a new solution called Splan. This work includes setting up new servers and working with our security vendor to install the necessary applications and services. Expected to be completed by Winter of 2023.

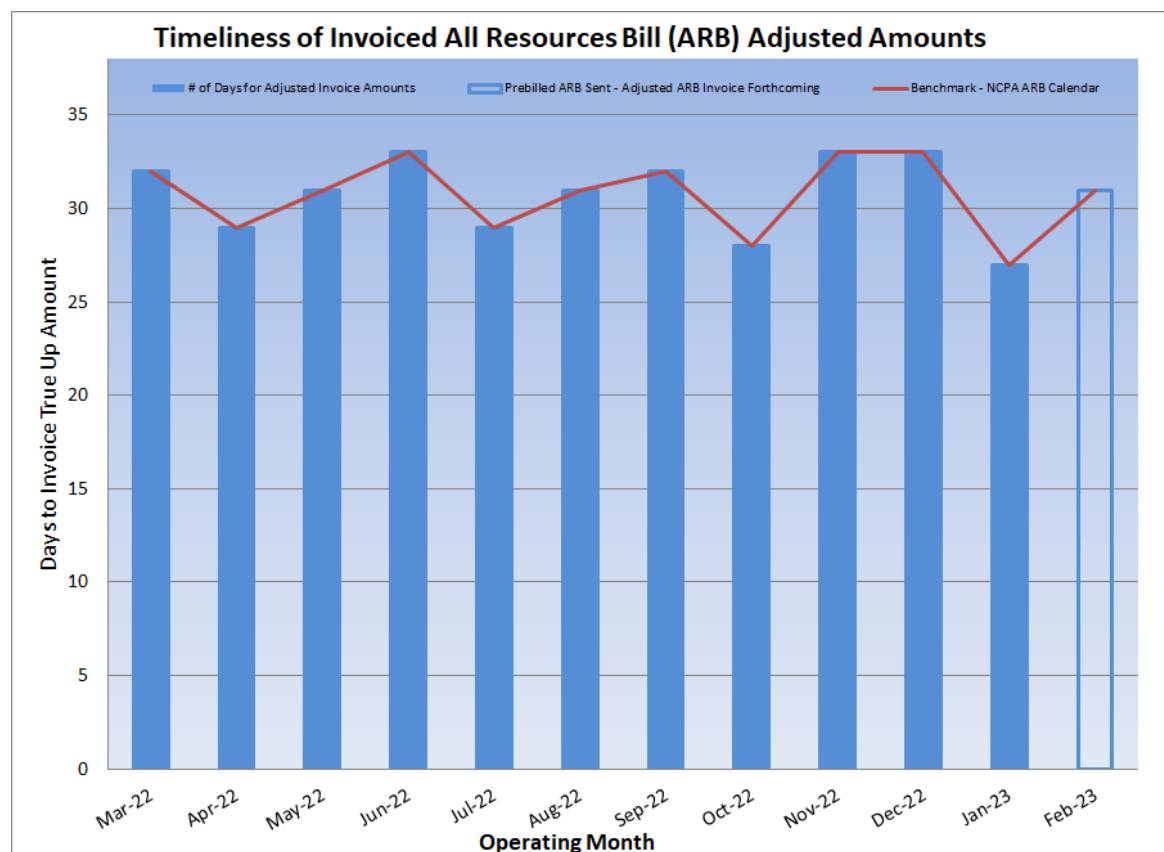
## **NCPA Bills & Settlements**

### **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 February 2023 NCPA All Resources Bill (ARB) monthly invoice sent to members on January 24, 2023 contains:

- February 2023 monthly pre-billed budget/forecast amounts;
- December 2022 (1st Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- November 2022 (2nd Adjustment) NCPA Project settlement true-up and T+20 business day recalculated CAISO settlement true-up allocations;
- September 2022 (3rd Adjustment) T+70 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
- January 2022 (4th Adjustment) T+11-month recalculated CAISO settlement true-up allocations;
- February 2020 (6th Adjustment) T+33-month recalculated CAISO settlement true-up;
- November 2019 (7th Adjustment) T+36-month CAISO settlement true-up;



## **Legislative & Regulatory**

- NCPA's Commissioners, Utility Directors, and utility staff participated in the annual Capitol Day events in Sacramento on February 6. NCPA members participated in a briefing with key Assembly energy and environmental committee staff, and joined CMUA for its annual conference program featuring policymakers addressing the group on energy and water policy issues. Public power officials from throughout the state participated in afternoon meetings with the legislature, and NCPA's members also participated in a meeting with California Air Resources Board officials on potential changes to the state's cap and trade program. Senate Energy Committee Chair Steven Bradford joined NCPA members to make remarks during the agency's dinner event, as well as several other members of NCPA's state legislative delegation. Many thanks to all who participated in this important annual state advocacy event.

## **Human Resources**

### **Hires:**

None.

### **Intern Hires:**

None.

### **Promotions:**

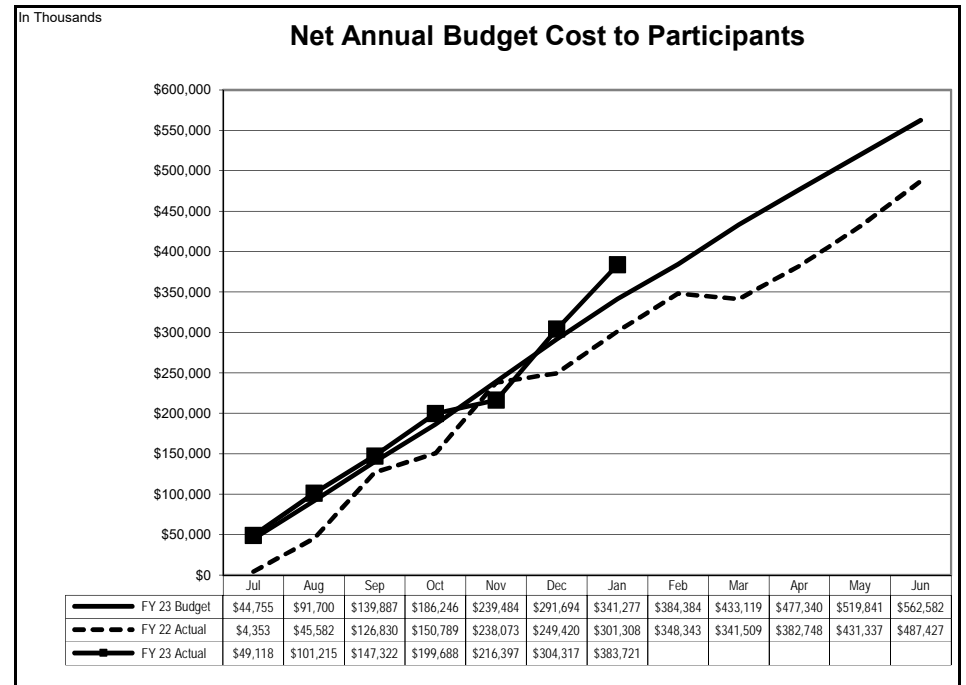
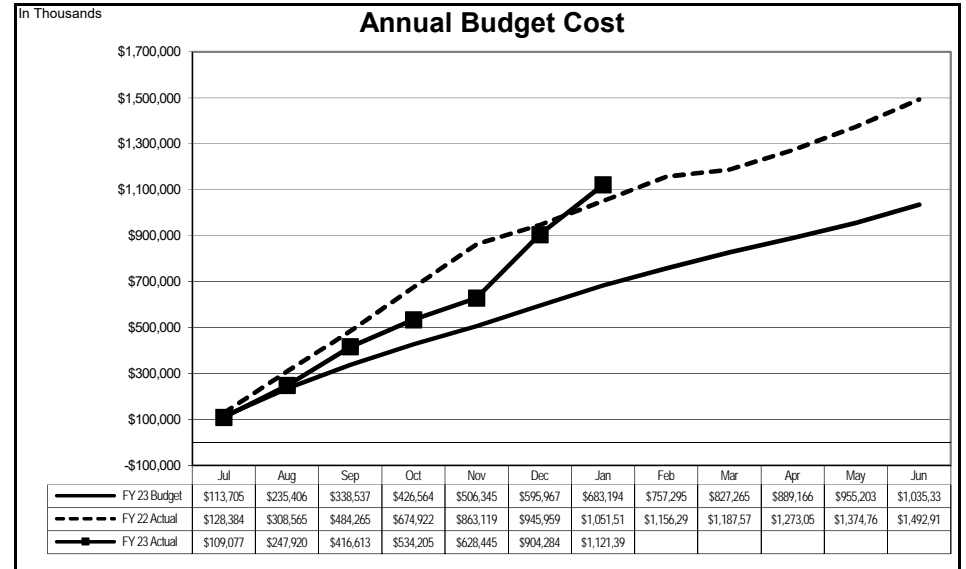
- James Creston was promoted to Supervisor II, Maintenance at our Lodi Energy Center effective January 30, 2023. James joined NCPA in 2020 as Combustion Turbine Specialist III and later became a Combustion Turbine Specialist – Lead Relief. James has over 18 years of experience operating and maintaining combustion and steam turbine generators. During his time at NCPA, James has continued to develop his professional skills and demonstrates a high level of professionalism and willingness to take on new assignments. In this new role, James' knowledge and expertise will be vital in supporting NCPA's combustion turbine projects to meet our strategic goals.

### **Separations:**

- Cary Padgett retired from her position as Executive Assistant to the General Manager at NCPA's Headquarters on January 12, 2023, after 34 years of service.
- 
- Jana Linkiewicz retired from her position as System Dispatcher at NCPA's Headquarters on January 5, 2023, after 24 years of service.
- 
- Danielle King resigned from her position as Facility Office Administrator III at our Lodi Energy Center office on December 23, 2022.

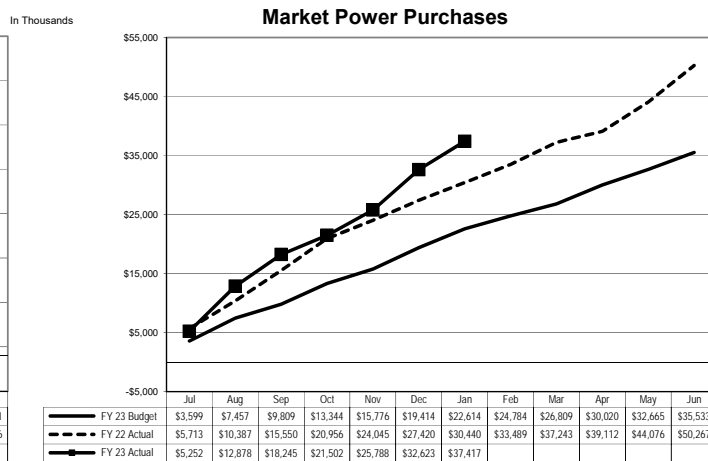
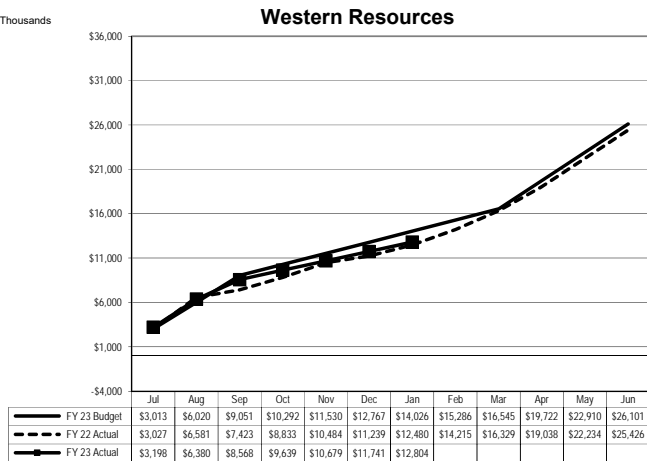
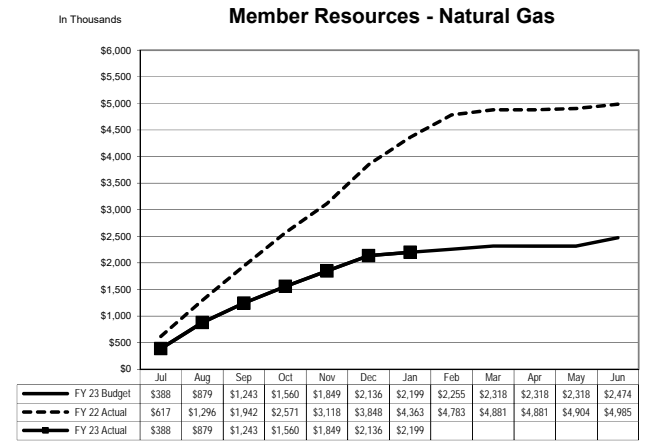
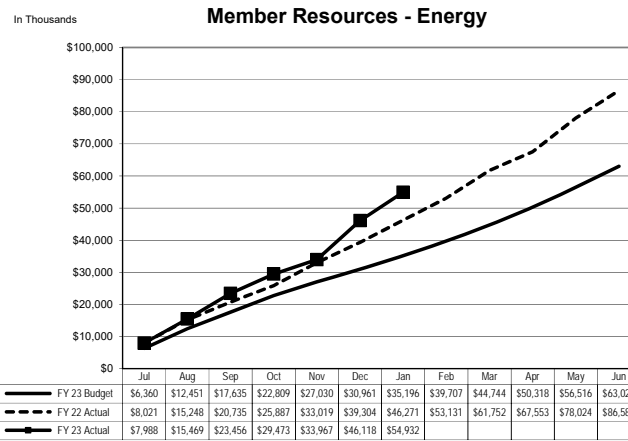
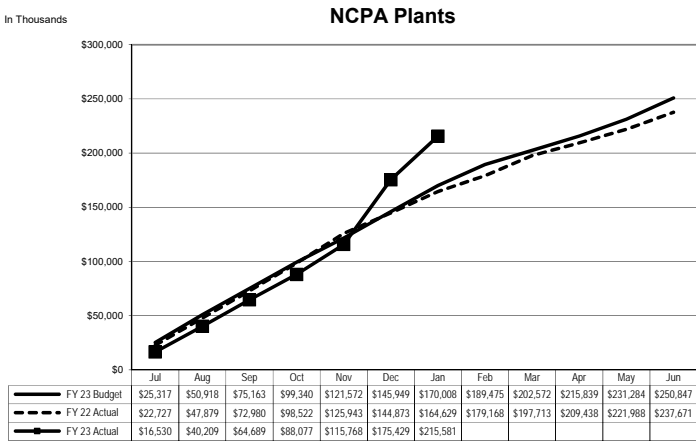
**Annual Budget  
2022-2023 Fiscal Year To Date  
As of January 31, 2023**

In Thousands	Program			
	Annual Budget	Actual	Under(Ovr) Budget	YTD % Remaining
<b>GENERATION RESOURCES</b>				
<b>NCPA Plants</b>				
Hydroelectric	55,514	37,426	\$ 18,088	33%
Geothermal Plant	41,633	25,142	16,491	40%
Combustion Turbine No. 1	5,602	3,486	2,116	38%
Combustion Turbine No. 2 (STIG)	10,361	5,944	4,417	43%
Lodi Energy Center	137,737	143,583	(5,846)	-4%
	250,847	215,581	35,266	14%
<b>Member Resources - Energy</b>	63,024	54,932	8,092	13%
<b>Member Resources - Natural Gas</b>	2,474	2,199	276	11%
<b>Western Resource</b>	26,100	12,804	13,296	51%
<b>Market Power Purchases</b>	35,533	37,417	(1,884)	-5%
<b>Load Aggregation Costs - ISO</b>	467,469	698,191	(230,722)	-49%
<b>Net GHG Obligations</b>	921	2,075	(1,155)	-125%
	846,368	1,023,200	(176,832)	-21%
<b>TRANSMISSION</b>				
<b>Independent System Operator</b>	168,782	86,897	81,885	49%
<b>MANAGEMENT SERVICES</b>				
<b>Legislative &amp; Regulatory</b>				
Legislative Representation	2,231	1,019	1,212	54%
Regulatory Representation	715	395	320	45%
Western Representation	723	154	568	79%
Customer Programs	615	300	315	51%
	4,284	1,868	2,416	56%
<b>Judicial Action</b>	460	336	124	27%
<b>Power Management</b>				
System Control & Load Dispatch	7,504	4,208	3,296	44%
Forecasting & Prescheduling	3,044	1,604	1,440	47%
Industry Restructuring	438	265	174	40%
Contract Admin, Interconnection Svcs & Ext. Affairs	1,032	503	528	51%
Gas Purchase Program	77	32	45	59%
Market Purchase Project	112	46	66	59%
	12,208	6,657	5,550	45%
<b>Energy Risk Management</b>	150	124	26	17%
<b>Settlements</b>	1,012	374	638	63%
<b>Integrated System Support</b>	405	226	179	44%
<b>Participant Pass Through Costs</b>	1,666	881	785	47%
<b>Support Services</b>	-	834	(834)	
	20,184	11,300	8,884	44%
<b>TOTAL ANNUAL BUDGET COST</b>	1,035,334	1,121,397	(86,063)	-8%
<b>LESS: THIRD PARTY REVENUE</b>				
<b>Plant ISO Energy Sales</b>	193,457	241,677	(48,220)	-25%
<b>Member Resource ISO Energy Sales</b>	49,954	88,592	(38,637)	-77%
<b>Member Owned Generation ISO Energy Sales</b>	118,709	167,094	(48,385)	-41%
<b>Revenue from Customers</b>	-	59,685	(59,685)	
<b>Customer Owned Generation ISO Energy Sales</b>	-	512	(512)	
<b>NCPA Contracts ISO Energy Sales</b>	34,944	46,089	(11,145)	-32%
<b>Western Resource ISO Energy Sales</b>	26,527	10,717	15,810	60%
<b>Load Aggregation Energy Sales</b>	-	86,074	(86,074)	
<b>Ancillary Services Sales</b>	5,514	2,954	2,560	46%
<b>Transmission Sales</b>	110	64	46	42%
<b>Western Credits, Interest &amp; Other Income</b>	43,537	34,219	9,319	21%
	472,753	737,676	(264,923)	-56%
<b>NET ANNUAL BUDGET COST TO PARTICIPANTS</b>	562,582	383,721	\$ 178,860	32%



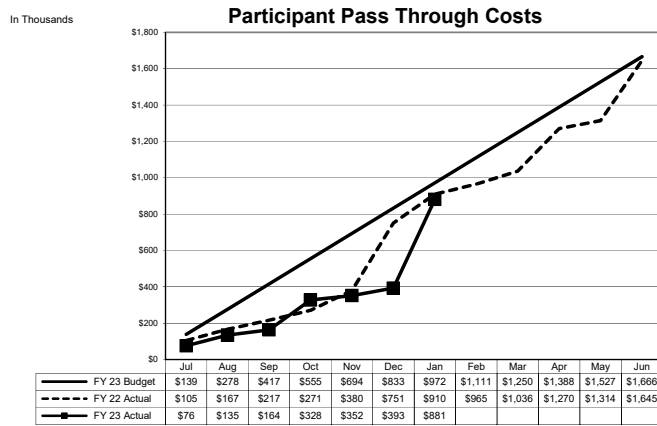
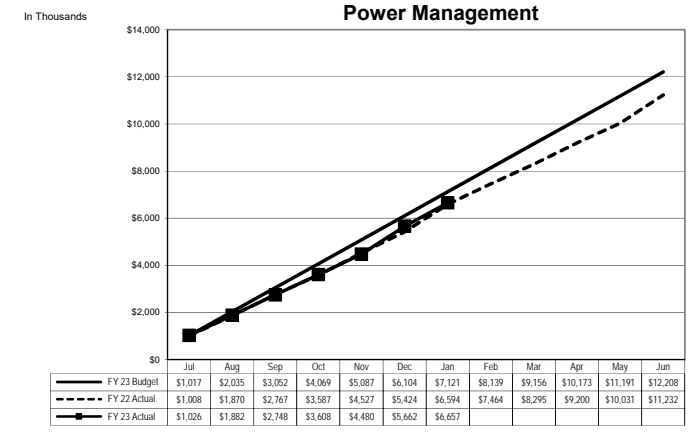
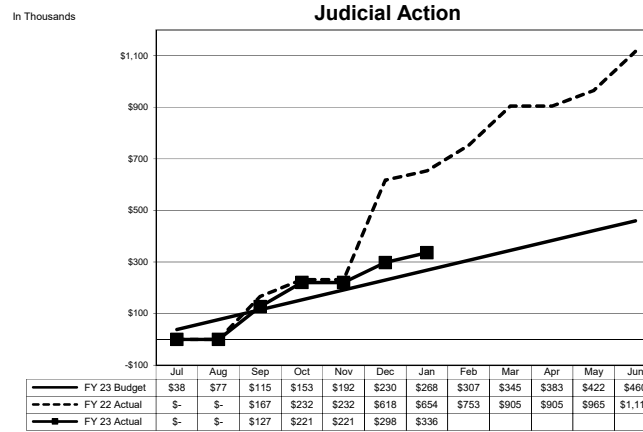
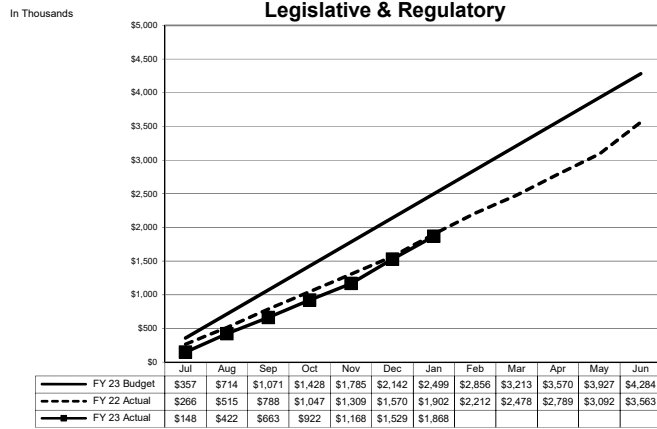


## Annual Budget Cost Generation Resources Analysis By Source As of January 31, 2023



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

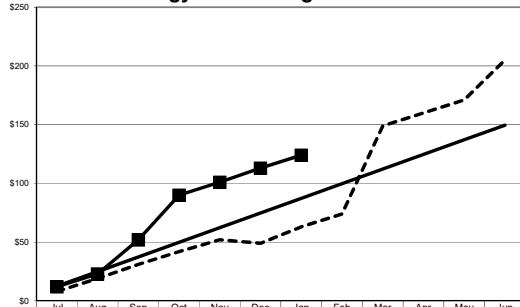
**Annual Budget Cost  
Management Services Analysis By Source  
As of January 31, 2023**



**Annual Budget Cost  
Management Services Analysis By Source  
As of January 31, 2023**

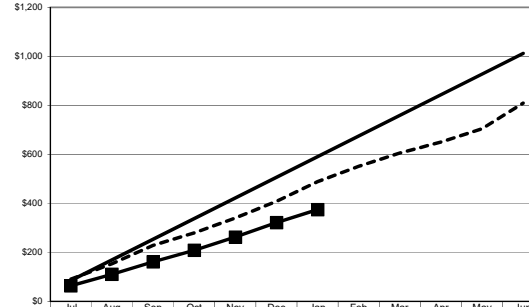
In Thousands

**Energy Risk Management**



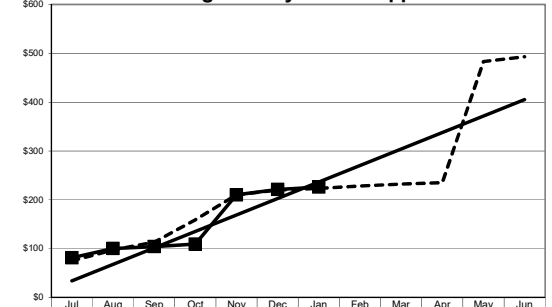
In Thousands

**Settlements**



In Thousands

**Integrated Systems Support**



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 23 Budget	\$12	\$25	\$37	\$50	\$62	\$75	\$87	\$100	\$112	\$125	\$137	\$150
FY 22 Actual	\$8	\$19	\$31	\$42	\$52	\$49	\$63	\$74	\$149	\$160	\$171	\$205
FY 23 Actual	\$12	\$23	\$52	\$90	\$101	\$113	\$124					

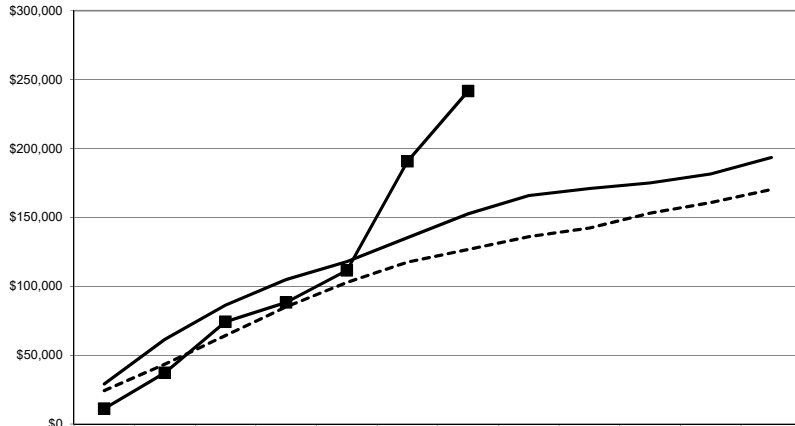
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 23 Budget	\$84	\$169	\$253	\$337	\$422	\$506	\$590	\$675	\$759	\$843	\$928	\$1,012
FY 22 Actual	\$90	\$153	\$228	\$279	\$340	\$408	\$488	\$551	\$605	\$650	\$704	\$809
FY 23 Actual	\$63	\$110	\$161	\$208	\$262	\$321	\$374					

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 23 Budget	\$34	\$68	\$101	\$135	\$169	\$203	\$236	\$270	\$304	\$338	\$371	\$405
FY 22 Actual	\$75	\$97	\$113	\$159	\$210	\$220	\$223	\$228	\$232	\$235	\$483	\$493
FY 23 Actual	\$81	\$100	\$104	\$109	\$210	\$221	\$226					

**Annual Budget Cost  
Third Party Revenue Analysis By Source  
As of January 31, 2023**

In Thousands

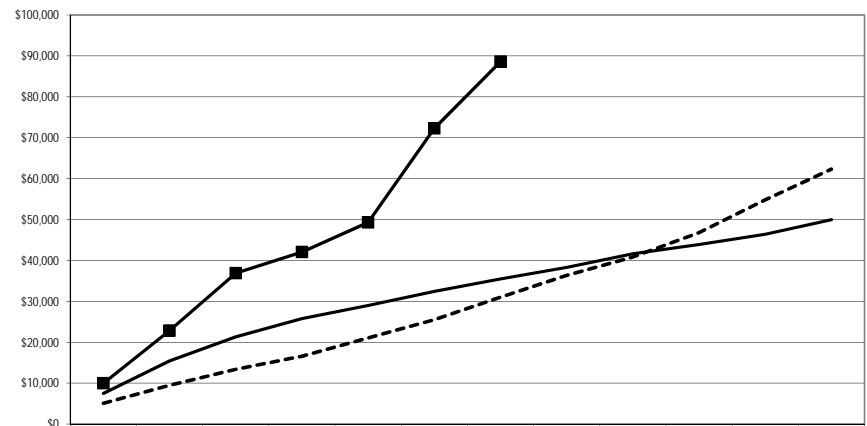
**Plant ISO Energy Sales**



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 23 Budget	29,114	61,426	86,347	104,866	117,849	135,274	152,602	165,892	170,954	174,993	181,508	193,457
FY 22 Actual	\$24,279	\$43,507	\$64,273	\$85,028	\$102,756	\$117,565	\$126,765	\$136,004	\$142,216	\$153,015	\$160,724	\$170,257
FY 23 Actual	\$11,193	\$37,232	\$74,267	\$88,244	\$111,556	\$190,712	\$241,677					

In Thousands

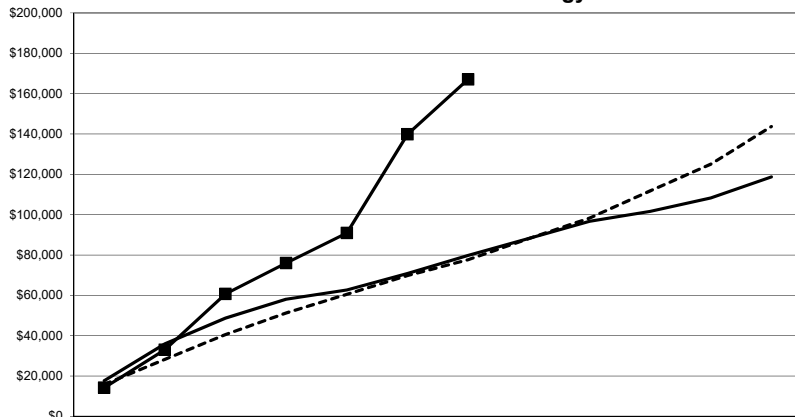
**Member Resource ISO Energy Sales**



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 23 Budget	7,486	15,415	21,311	25,765	29,000	32,434	35,481	38,283	41,635	43,904	46,407	49,954
FY 22 Actual	\$5,075	\$9,482	\$13,381	\$16,569	\$21,029	\$25,489	\$31,009	\$36,321	\$40,825	\$46,768	\$54,792	\$62,307
FY 23 Actual	\$9,959	\$22,848	\$36,898	\$42,054	\$49,294	\$72,296	\$88,592					

In Thousands

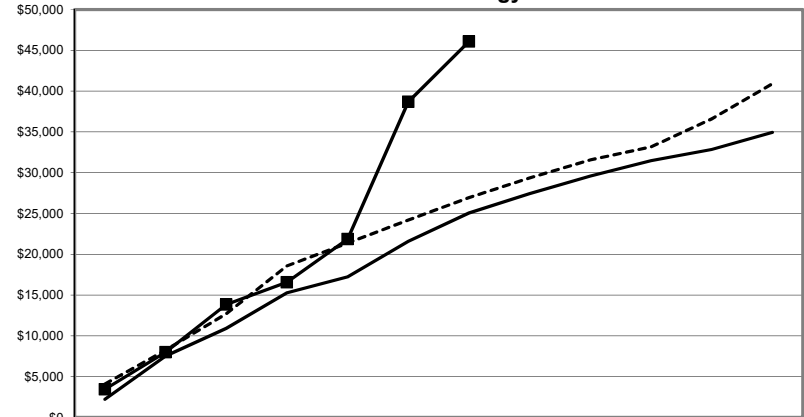
**Member Owned Generation ISO Energy Sales**



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 23 Budget	17,724	35,953	48,701	58,108	62,709	70,827	79,792	88,194	96,702	101,593	108,295	118,709
FY 22 Actual	\$15,831	\$28,243	\$40,567	\$51,237	\$60,522	\$69,837	\$77,659	\$88,096	\$98,253	\$111,789	\$125,023	\$143,669
FY 23 Actual	\$14,212	\$33,017	\$60,686	\$76,006	\$90,898	\$139,840	\$167,094					

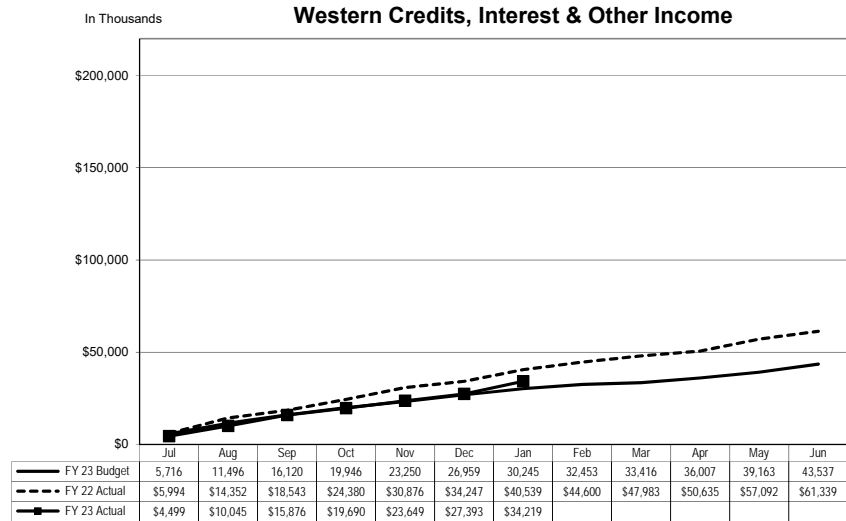
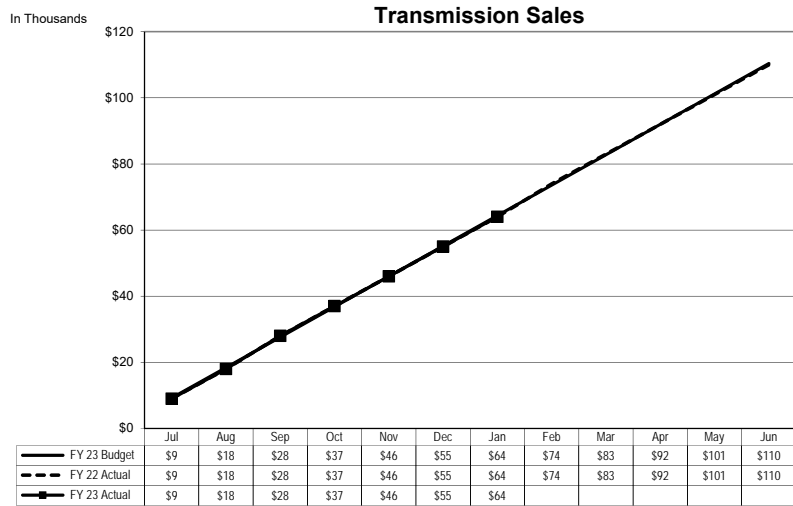
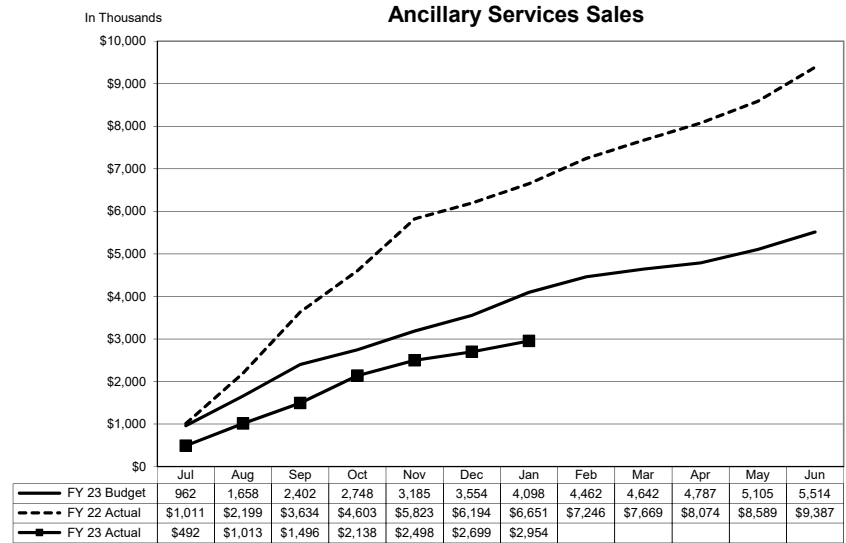
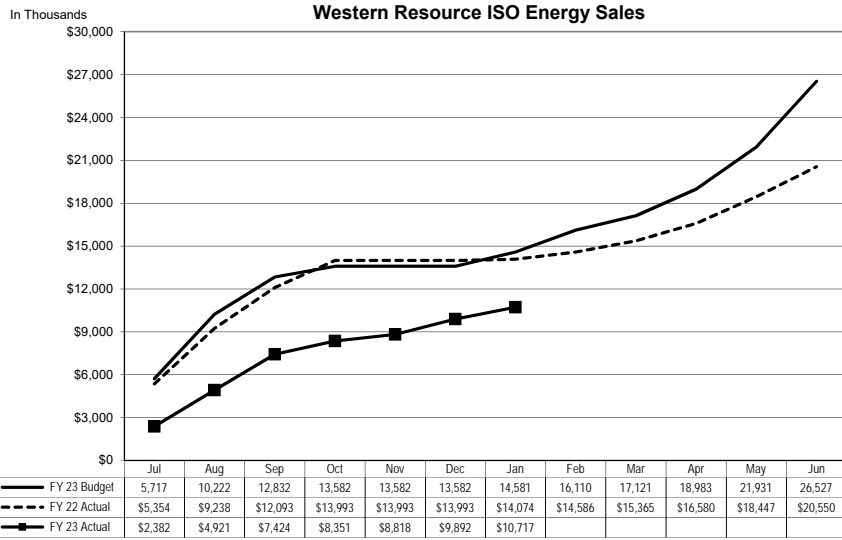
In Thousands

**NCPA Contracts ISO Energy Sales**

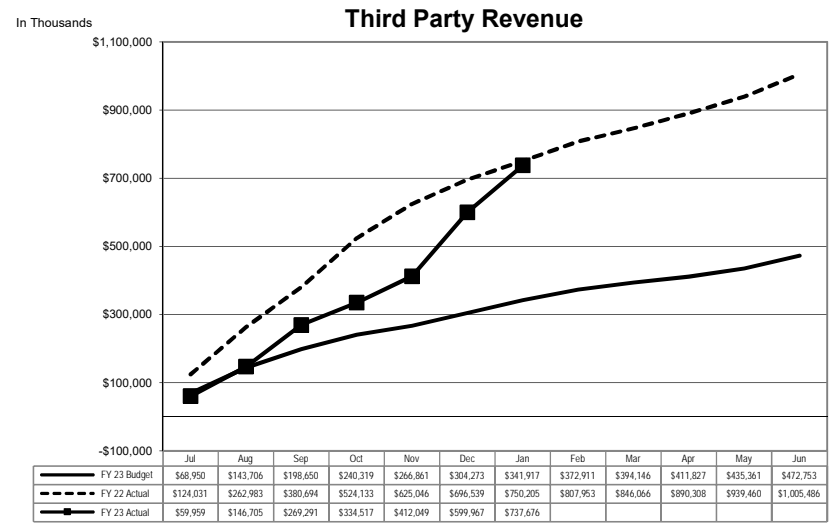
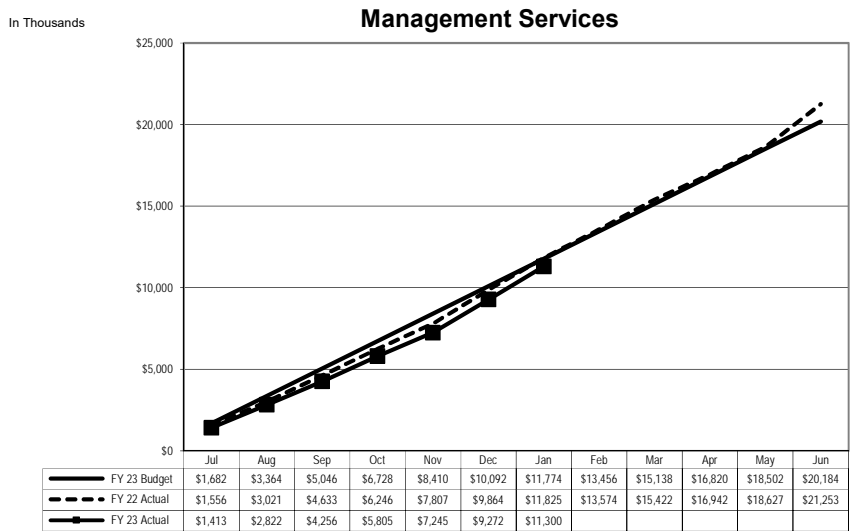
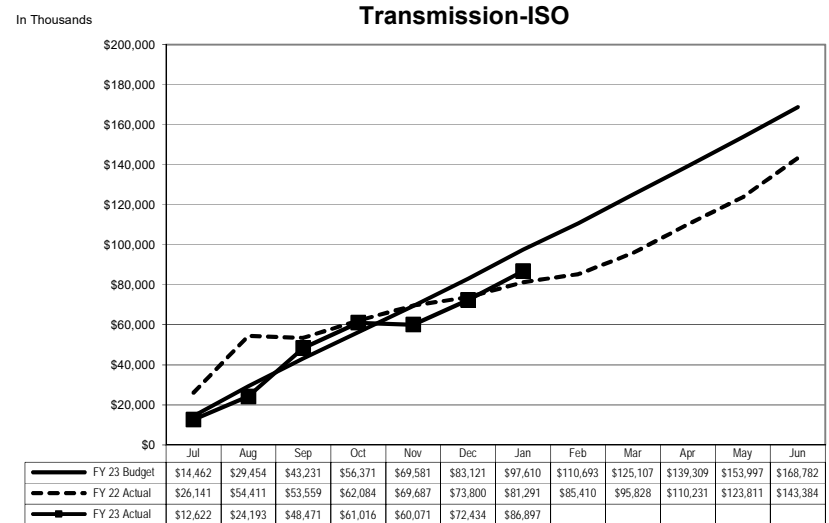
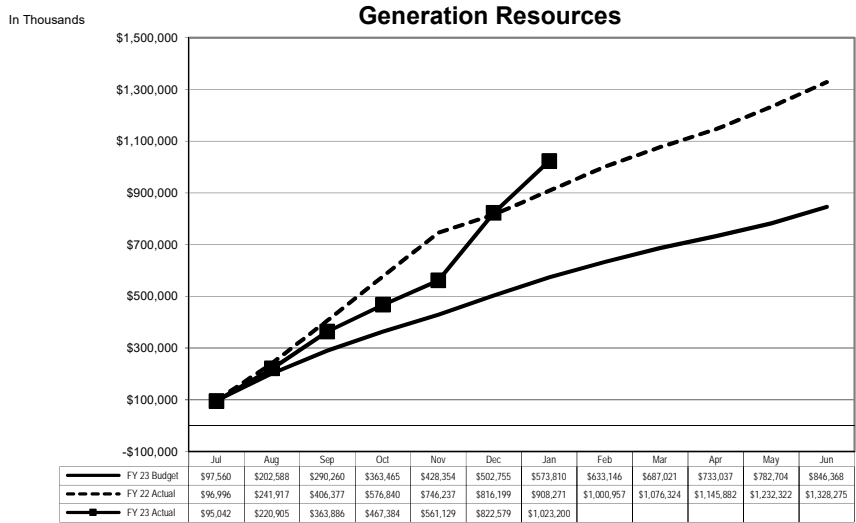


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 23 Budget	2,222	7,517	10,911	15,267	17,240	21,588	25,053	27,443	29,593	31,468	32,851	34,944
FY 22 Actual	\$4,096	\$8,246	\$12,704	\$18,566	\$21,382	\$24,198	\$26,954	\$29,351	\$31,580	\$33,172	\$36,590	\$40,907
FY 23 Actual	\$3,439	\$8,003	\$13,845	\$16,565	\$21,872	\$38,699	\$46,089					

**Annual Budget Cost  
Third Party Revenue Analysis By Source  
As of January 31, 2023**



## Annual Budget Budget vs. Actual By Major Area As of January 31, 2023



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

**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of January 31, 2023**

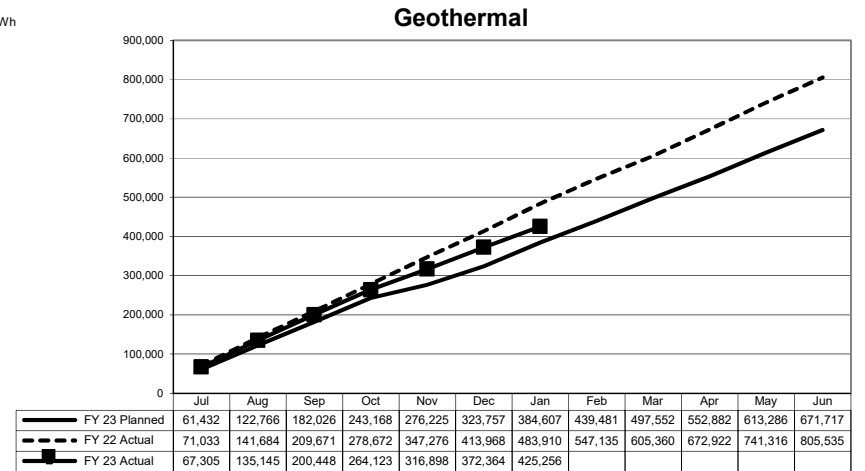
**Generation Cost Analysis**

\$ in thousands

	Geothermal				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 17,798	\$ 11,530	\$ 27.11	\$ 6,268	35%
Capital Assets/Spare Parts Inventories	7,401	3,035	7.14	4,365	59%
Other Costs	12,357	7,753	18.23	4,604	37%
CA ISO Charges	604	797	1.87	(193)	-32%
Debt Service	3,473	2,026	4.76	1,447	42%
Annual Budget	41,633	25,142	59.12	16,491	40%
Less: Third Party Revenue					
Interest Income	150	150	0.35	(0)	0%
ISO Energy Sales	42,271	51,860	121.95	(9,589)	-23%
Ancillary Services Sales	-	-	-	-	0%
Effluent Revenues	750	211	0.50	539	72%
Misc	113	66	0.16	47	41%
	43,284	52,287	122.95	(9,003)	-21%
Net Annual Budget Cost to Participants	\$ (1,651)	\$ (27,145)	\$ (63.83)	\$ 25,494	-1544%
Net Generation--MWh @ Meter	671,717	425,256			
\$/MWh (A)	\$ (7.63)	\$ (68.60)			

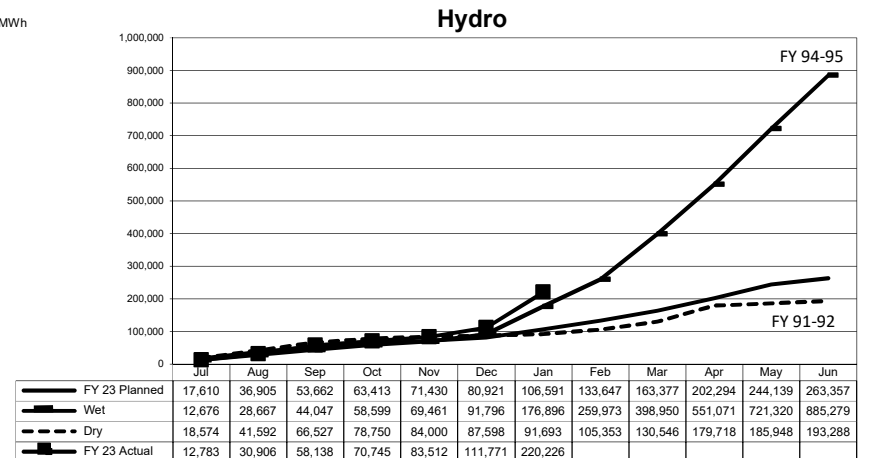
**MWhs Generated**

In MWh



	Hydroelectric				
	Budget	Actual	\$/MWh	Under(Over)	YTD %
			Actual	Budget	Remaining
Routine O & M	\$ 10,203	\$ 5,051	\$ 22.94	\$ 5,152	50%
Capital Assets/Spare Parts Inventories	4,270	2,784	12.64	1,486	35%
Other Costs	3,993	2,979	13.53	1,014	25%
CA ISO Charges	1,237	5,722	25.98	(4,485)	-363%
Debt Service	35,811	20,890	94.86	14,921	42%
Annual Budget	55,514	37,426	169.94	18,088	33%
Less: Third Party Revenue					
Interest Income	150	86	0.39	64	43%
ISO Energy Sales	22,182	43,766	198.73	(21,584)	-97%
Ancillary Services Sales	1,224	2,492	11.32	(1,268)	-104%
Misc	-	-	-	-	0%
	23,556	46,343	210.44	(22,788)	-97%
Net Annual Budget Cost to Participants	\$ 31,958	\$ (8,917)	\$ (40.49)	\$ 40,876	
Net Generation--MWh @ Meter	263,357	220,226			
\$/MWh (A)	\$ (14.63)	\$ (135.35)			

In MWh



Footnotes:

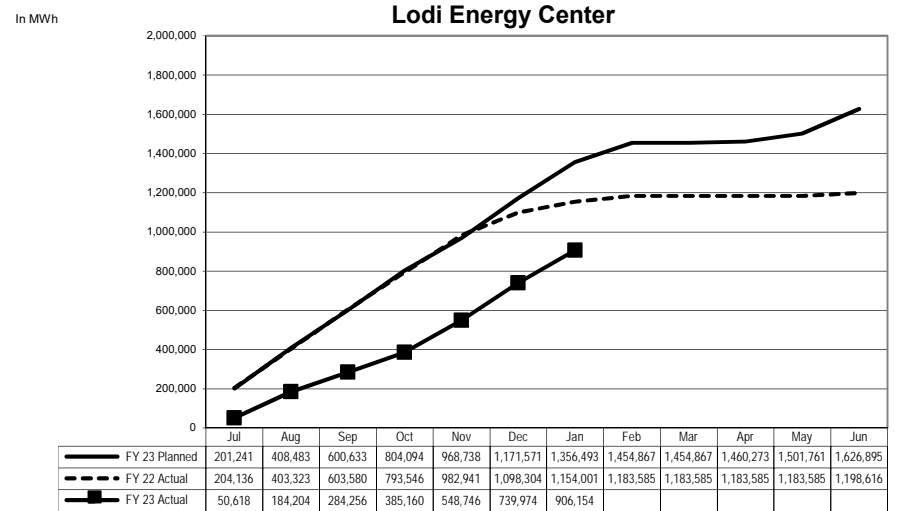
(A) Aggregate fiscal year generation in \$/MWh (excluding debt service)

**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of January 31, 2023**

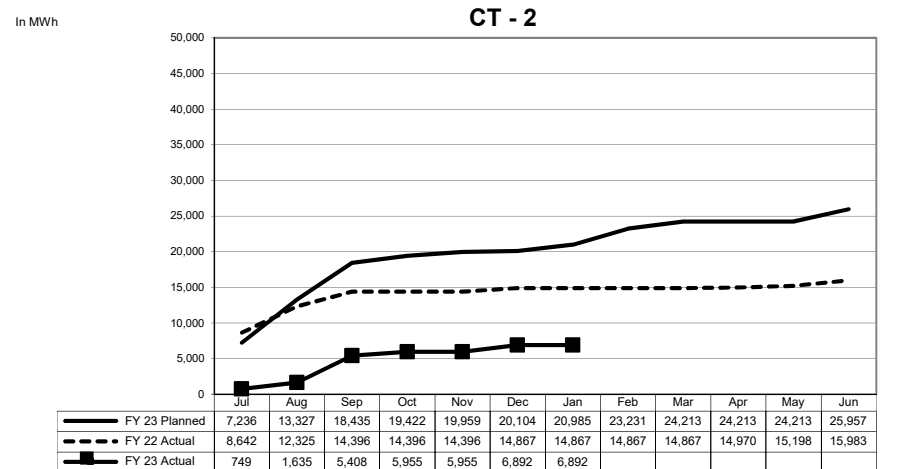
**Generation Cost Analysis**

	Lodi Energy Center				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 9,826	\$ 6,263	\$ 6.91	\$ 3,563	36%
Fuel	64,819	102,156	112.74	(37,337)	-58%
GHG Allowance Costs	20,250	6,204	6.85	14,046	69%
CA ISO Charges and Energy Purchases	2,970	1,937	2.14	1,033	35%
Capital Assets/Spare Parts Inventories	3,631	1,135	1.25	2,496	69%
Other Costs	10,244	10,722	11.83	(478)	-5%
Debt Service	25,996	15,164	16.73	10,832	42%
Annual Budget	137,737	143,583	158.45	(5,846)	-4%
Less: Third Party Revenue					
Interest Income	250	552	0.61	(302)	-121%
ISO Energy Sales	121,620	140,079	154.59	(18,459)	-15%
Ancillary Services Sales	2,318	230	0.25	2,087	90%
Transfer Gas Credit	-	-	-	-	0%
GHG Allowance Credits	19,710	6,204	6.85	13,506	69%
Misc	-	9	0.01	(9)	0%
	143,897	147,074	162.31	(3,177)	-2%
Net Annual Budget Cost to Participants	\$ (6,160)	\$ (3,491)	\$ (3.85)	\$ (2,669)	43%
Net Generation--MWh @ Meter	1,626,895	906,154			
\$/MWh (A)	\$ (19.77)	\$ (20.59)			

**MWhs Generated**



	Combustion Turbine No. 2 (STIG)				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 1,616	\$ 768	\$ 111.49	\$ 848	52%
Fuel and Pipeline Transport Charges	2,227	1,390	201.66	837	38%
GHG Allowance Costs	424	-	-	424	100%
Capital Assets/Spare Parts Inventories	220	9	1.31	211	96%
Other Costs	643	812	117.76	(169)	-26%
CA ISO Charges	148	-	-	148	100%
Debt Service	5,084	2,966	430.31	2,118	42%
Annual Budget	10,361	5,944	862.53	4,417	43%
Less: Third Party Revenue					
Interest Income	42	52	7.54	(10)	-24%
ISO Energy Sales	4,331	2,543	369.01	1,788	41%
Ancillary Service Sales	-	-	-	-	0%
Fuel and Pipeline Transport Credits	1,775	2,767	401.56	(993)	-56%
GHG Allowance Credits	424	-	-	424	100%
Misc	-	3	0.37	(3)	0%
	6,572	5,365	778.49	1,207	18%
Net Annual Budget Cost to Participants	\$ 3,789	\$ 579	\$ 84.04	\$ 3,210	85%
Net Generation--MWh @ Meter	25,957	6,892			
\$/MWh (A)	\$ (49.88)	\$ (346.27)			



Footnotes:

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



**Annual Budget  
NCPA Generation Detail Analysis By Plant  
As of January 31, 2023**

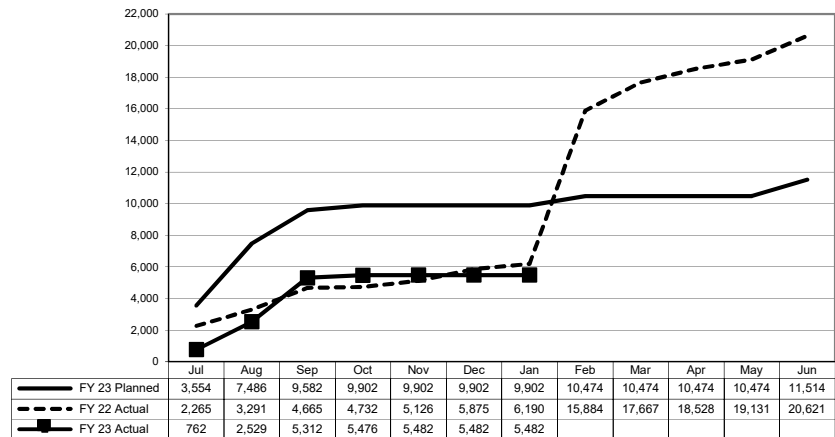
**Generation Cost Analysis**

	Combustion Turbine No. 1				
	Budget	Actual	\$/MWh Actual	Under(Over) Budget	YTD % Remaining
Routine O & M	\$ 2,530	\$ 1,165	\$ 212.55	\$ 1,365	54%
Fuel and Pipeline Transport Charges	1,214	1,038	189.31	176	14%
Capital Assets/Spare Parts Inventories	800	371	67.60	429	54%
Other Costs	882	509	92.93	373	42%
CA ISO Charges	176	403	73.43	(227)	-129%
Debt Service	-	-	-	-	-
Annual Budget	5,602	3,486	635.81	2,116	38%
Less: Third Party Revenue					
Interest Income	55	38		17	31%
ISO Energy Sales	3,053	3,430	625.66	(377)	-12%
Ancillary Services Sales	-	-	-	-	0%
Misc	-	-	-	-	0%
	3,108	3,468	625.66	(360)	-12%
Net Annual Budget Cost to Participants	\$ 2,493	\$ 18	\$ 3.23	\$ 2,475	99%
Net Generation--MWh @ Meter	11,514	5,482			
\$/MWh (A)	\$ 216.54	\$ 3.23			

**MWhs Generated**

In MWh

**CT - 1**



Footnotes:

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