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BUSINESS PROGRESS REPORT

SEPTEMBER 2017

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Generation Costs & Reliability

Combustion Turbine Project

Unit Operation for August

| Unit | Availa | ability | P | roduction | Reason for Run | | |
|----------------------------|------------|--|---|---------------|----------------|--|--|
| | Unit 1 | Unit 2 | Unit 1 | 1,247.0 | | | |
| | 100.00% | 100.00% | Unit 2 | 1,162.5 | | | |
| Curtailments, Comments. | Outages, a | nd | N/A / N/A | | | | |
| | | | | | | | |
| CT1 Lodi | 92.3 | 35% | | 1,021.0 MWHr | CAISO | | |
| Curtailments, Comments. | Outages, a | nd | 01-Aug-17 14:00 14:36 Unit failed parallel, field breaker trouble Forced 0.6 02-Aug-17 14:00 14:56 Mechanical overspeed Forced 0.9 02-Aug-17 15:06 23:59 Oil leak Forced 8.9 03-Aug-17 0:00 23:59 Oil leak Forced 24.0 04-Aug-17 0:00 17:21 Oil leak Forced 17.4 30-Aug-17 6:07 9:52 Micronet card failed Forced 3.8 31-Aug-17 18:02 19:21 Unit trip, cause unknown Forced 1.3 | | | | |
| CT2 STIG | 74.8 | 31% | | 2,110.8 MWHr | CAISO | | |
| Curtailments, Comments. | Outages, a | nd | 02-Aug-17 13:15 15:00 Power turbine underspeed Forced 1.8 02-Aug-17 17:09 23:59 Broken oil line Forced 6.8 03Aug-09Aug 0:00 23:59 Broken oil line Forced 168.0 10-Aug-17 0:00 10:47 Broken oil line Forced 10.8 | | | | |
| LEC | 99.4 | 41% | | 66,184.0 MWHr | CAISO | | |
| Curtailments, Comments. | Outages, a | it derate, auto unload due to IGV it late start, IGV servo Forced 0.0 feedwater control valve trouble it late start, aux boiler Forced 0.0 laintenance Bypass. | | | | | |

Maintenance Summary – Specific per asset above.

Geothermal Facilities

| Unit | Availability | Net Electricity Generated/Water Delivered | Out-of-Service/Descriptors |
|---|--------------|---|--|
| Unit 1 | 100 % | 19,502 MWh | Unit 1 had no outages for the month. |
| Unit 2 | 100 % | *17,453 MWh | Unit 2 had no outages for the month. |
| Unit 3 | N/A % | N/A | Unit 3 remains out of service for the month. |
| Unit 4 | 100 % | 30,878 MWh | Unit 4 had no outages for the month. |
| Southeast Geysers Effluent Pipeline | 98.5 % | 214.4 mgallons | Average flow rate: 4,861 gpm |
| Southeast Solar Plant | N/A | 98,073 KWh | Year-to-date KWh: 688,659 |
| Bear Canyon Pump Station Zero Solar | N/A | 247,751 KWh | Year-to-date KWh: 1,588,902 |

Availability/Production for August

* Accounts for an additional 2,081 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

Hydroelectric Project

Availability/Production for August

| Units | Availability Net Electricity Generated | | Out-of-Service | | |
|---------------------|---|------------|--|--|--|
| Collierville Unit 1 | 100.00 % | 27,024 MWh | CV #1 unit no reportable outages. | | |
| Collierville Unit 2 | 100.00 % | 32,877 MWh | CV #2 unit.no reportable outages. Derate to 110mw due to stator ground fault repair. | | |
| Spicer Unit 1 | 100.00 % | 1,850 MWh | NSM #1 unit no reportable outages. | | |
| Spicer Unit 2 | 100.00 % | 1,856 MWh | NSM #2 unit no reportable outages. | | |
| Spicer Unit 3 | 100.00 % | 336 MWh | NSM #3 unit no reportable outages. | | |

Operations & Maintenance Activities:

- Monthly CMMS work orders
- Adit 4 Slide repair
- Beaver Creek Diversion Reservoir debris clean out in (phase2)
- Murphys Micro-wave project
- Project Stream Gaging station solar upgrades
- DSOD annual Dam and Spillway Inspections FERC Project 2409 and 11563
- Global Risk Consultants Loss Prevention Review

Environmental, Health & Safety (EH&S) Projects

Incident Reports

- There was one Geothermal vehicle accident, however, no recordable incidents, and no lost time accidents occurred in August.
- Find below a Safety Report that highlights the following areas: recordable incidents and lost time accidents (LTAs) reported this period and this calendar year; the number of days since last recordable or LTA; the number of work hours since last recordable or LTA; and vehicle accidents reported this month and this calendar year. In September of 2012, Generation Services completed an internal audit of its records with the results reflected in this report and as updated through the payroll period ended August 19, 2017.
- 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.

| | Hydro | GEO | CT Group * | NCPA HQ ** |
|------------------------------------|---------|--------|---------------|---------------|
| CalOSHA Recordable (this month) | 0 | 0 | 0 | 0 |
| CalOSHA Recordable (calendar year) | 0 | 1 | 0 | 0 |
| Days since Recordable | 976 | 223 | 866 | 5,934 |
| Work Hours Since Last Recordable | 83,534 | 42,908 | 127,060 | 2,138,101 |
| LTA's (this month) | 0 | 0 | 0 | 0 |
| LTA's (calendar year) | 0 | 1 | 0 | 0 |
| Days without LTA | 3,592 | 207 | 8,770 | 4,863 |
| Work Hours without LTA | 329,099 | 40,003 | 568,424 | 1,760,121 |
| Vehicle Incident (month) | 0 | 1 | 0 | 0 |
| Vehicle Incident (calendar year) | 0 | 1 | 1 | 1 |

August Generation Services Safety Report

* 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 August 19, 2017.

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:

| Guirent real 2017 Data | | | | | | | | | |
|------------------------|--------------------|---------|---------------------|-----------|--|--|--|--|--|
| | August 2017 | | Calendar Year 2017 | | | | | | |
| | Peak MW | MWh | Peak MW | MWh | | | | | |
| NCPA Pool | 455.39 8/28 @1700 | 223,330 | 463.98 6/19 @1600 | 1,602,658 | | | | | |
| SVP | 563.67 8/2 @1700 | 334,588 | 570.18 6/22 @1500 | 2,469,464 | | | | | |
| MSSA | 1010.21 8/2 @ 1700 | 557,918 | 1025.83 6/22 @ 1500 | 4,072,122 | | | | | |

Current Year 2017 Data

Last Year 2016 Data*

| | August 2016 | | Calendar Year 2016 | | | |
|-----------|--------------------|---------|--------------------|-----------|--|--|
| | Peak MW | MWh | Peak MW | MWh | | |
| NCPA Pool | 405.2 8/17 @1700 | 215,006 | 449.75 7/27 @1700 | 1,584,996 | | |
| SVP | 488.93 8/9 @ 1600 | 311,360 | 534.21 9/26 @ 1700 | 2,353,715 | | |
| MSSA | 889.64 8/17 @ 1700 | 526,366 | 968.73 7/27 @ 1600 | 3,938,711 | | |

*Last year's data added for comparison purposes only

System Peak Data

| | All Time Peak Demand | 2017 Peak Demand |
|-----------|------------------------------|---------------------|
| NCPA Pool | 517.83 MW on 7/24/06 @ 1500 | 463.98 6/19 @ 1600 |
| SVP | 570.18 MW on 6/22/17 @ 1500 | 570.18 6/22 @ 1500 |
| MSSA | 1025.83 MW on 6/22/17 @ 1500 | 1025.83 6/22 @ 1500 |

 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 | | | | | | | | | |
|---------------------------------|------------------------------------|--------|--|--|--|--|--|--|--|
| | August 2017 Calendar Year 2017 | | | | | | | | |
| MSSA % Within the Band | 98.79% | 97.53% | | | | | | | |

- Spicer Meadows:
 - No curtailments
- Geothermal Units:
 - No curtailments
- Lodi Energy Center:
 - August 4 @ 1420 1650, unit derate due to auto unload caused by IGV position trouble
 - August 8 @ 1400 1415, unit late start due to IGV servo trouble
 - August @ 1616 2040 unit o/s due to IP feedwater control valve trouble
 - August 30 @ 1100 1126, unit late start due to aux boiler trouble
- Alameda CTs:
 - No curtailments
- Lodi CT:
 - August 1 @ 1400 1436, unit failed parallel due to field breaker trouble
 - August 2 @ 1400 1456, unit failed start due to mechanical overspeed
 - August 2 August 4, unit o/s due oil leak
 - August 30 @ 0607 0952, unit o/s due to failed micronet card
 - August 31 @ 1802 1921, unit trip cause unknown
- Collierville Units:
 - August 1 31, Unit 2 remains derated due stator ground fault repair.
- STIG:
 - August 2 @ 1315 1500, unit trip due to power turbine underspeed indication
 - August 2 August 10, unit unavailable due to broken oil line

Pooling & Portfolio Planning & Forecasting

- Actual NCPA Pool load of 223.3 GWh in August equaled 103% of the pre-month forecast of 218.5 GWh due to another unusually warm month with associated high demand. Pool load, running 123.9 GWh through September 17, is likely to reach the forecast of 203.5 GWh with continuing above-normal temperatures forecasted.
- The Lodi Energy Center (LEC) generated 11,905 MWh for the pool in August, or 17% above the 10,124 MWh forecast. Once again, sustained high temperatures in August kept implied heat rates well above the norm. For September, LEC generation was forecasted at 10,299 MWh and had reached 53,019 MWh by September 18.
- No rain was recorded at Big Trees gage during the month of August. With the rainy season concluded, total precipitation for the year at 99.4 inches was 179% of the historic October-to-August average.
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) has been kept at \$35/MWh.
- NSMR storage as of August 31 was at 121,088 acre feet. The historical average NSMR storage at the end of August is 118,461 acre feet. As of September 18, NSMR storage is 104,613 acre feet. The NCPA Pool share of NSMR storage is 53,179 acre feet.
- Combined Calaveras Project generation for the Pool in August totaled 32.8 GWh, down from 46.0 GWh in July. The Pool's 32.8 MWh in June was slightly more than the pre-month forecast of 31.7 GWh. Through September 18, Calaveras generation for the Pool is 16.6 GWh, slightly more than the forecast of 14.8 GWh – this is due to the early September heat wave and higher energy prices.
- Western Base Resource (BR) Pool delivery in August 2017 was 79.4 GWh compared to the forecast of 83.3 GWh. Through September 18, BR pool allocations of 35.4 GWh (15.8 GWh Displacement) have a way to go to meet the 67.3-GWh September forecast.
- PG&E City-Gate gas index traded at \$3.39/MMBtu for September 19 delivery compared to an average of \$3.276/MMBtu (with a high of \$3.395/MMBtu) during the month of August. Despite high temperatures, prices in August remained relatively flat. The PG&E Bidweek price for September gas was \$3.34, six cents higher than August, and daily Platt's prices have been averaging in that range, due to above-normal temperatures, particularly at the beginning of the month, and upstream demand.
- Day-ahead HLH (on-peak) NP15 electricity remains low on average with spikes occurring on days with highest load and least wind. The HLH and LLH day-ahead average LMPs for Monday, September 18 delivery were \$33.85 and \$27.95/MWh, respectively.

| | Pe | eak and Energ Aug-1 | y Summary | | esources Value Estimated Pro | oduction Costs | Cost of Serving Demand | | |
|--|-------------------------|----------------------------|----------------------------|-----------------------|------------------------------------|---------------------------|------------------------|---------------------|--|
| | Coincident Peak (MW) | Total MWh | Forecast Values | Avg. MW | NCPA | A Pool | | | |
| | Aug-28-17 Hour 17 | | | | Cost/Revenue (Estimate) | Variable Cost (\$/MWh) | Totals | Avg (\$/MWh) | |
| Demand | 456.0 | 223,320 | 218,526 | 300.2 | N/A | N/A | at Market | Clearing Price | |
| WAPA Geothermal Hydro | : | 79,371 28,110 32,607 | 83,268 28,612 28,663 | 106.7 37.8 43.8 | \$ 2,334,679 534,091 195,639 | \$ 29.41 19.00 6.00 | \$ 11,548,917 | | |
| Stig & CTs LEC | - | 3,296 11,905 | 4,512 10,124 | 4.4 16.0 | 193,639 197,626 461,081 | 59.96 38.73 | | t of Pool Generatio | |
| Contracts Market - Net Net Sales = Negative) | 352.0 104.0 | 86,862 (18,830) | 104,495 (41,148) | 116.8 (25.3) | 5,345,188 (884,937.57) | 61.54 47.00 | \$ 8,363,125 | \$ 37.4 | |
| Net Total | 456.0 | 223,320 | 218,526 | 300.2 | \$ 8,183,366 | \$ 37.45 | | | |

| | | | Mont | hly Marke | | | | |
|--------|-------------|----|-----------|-----------------------------|-----------|----------------------|-------------------|---|
| | | | | Avg Variable Cost of Poe | | ard Prices (EOX NP15 | HLH Ask Prices) | NOTES TO SUMMARY TABLE: |
| | Pool Energy | HL | H Avg MCP | Generation | 0 | NP15 8/1/2017 | 9/5/2017 (\$/MWh) | |
| | (MWh) | | (\$/MWh) | (\$/MWh) | | (\$/MWh) | | Peak and Energy Summary: |
| Jan-17 | 205,675 | \$ | 36.58 | \$ 23.7 | 0 Sep-17 | \$ 39.32 | \$ 52.25 | * Monthly generation summary of Coincidental Peak (hour in which pool demand peaked), |
| Feb-17 | 178,642 | \$ | 30.61 | \$ 24.4 | 1 Oct-17 | 38.94 | 38.41 | total MWH for the month, and pre-month forecasted values for report period. |
| Mar-17 | 192,408 | \$ | 23.37 | \$ 25.4 | 3 Nov-17 | 36.75 | 37.18 | * Generation totals are for POOL SHARE of the projects. |
| Apr-17 | 179,239 | \$ | 23.39 | \$ 31.4 | 7 Q4 2017 | \$ 38.20 | \$ 38.04 | * Hydro totals include Collierville and Spicer generation. |
| May-17 | 195,573 | \$ | 31.70 | \$ 26.8 | 6 Q1 2018 | 36.46 | 36.67 | Estimated Production Costs: |
| Jun-17 | 206,429 | \$ | 38.62 | \$ 34.2 | 5 Q2 2018 | 29.86 | 31.46 | Fixed project costs not included except for WAPA, where total month's project costs |
| Jul-17 | 221,169 | \$ | 39.42 | \$ 36.2 | 1 CY2018 | \$ 35.54 | \$ 36.61 | are used to calculate the average unit cost. |
| Aug-17 | 223,320 | \$ | 51.71 | \$ 37.4 | 5 CY2019 | 35.54 | 36.86 | * STIG and CT costs include forward natural gas and basis hedge transactions. |
| Sep-17 | | | | | CY2020 | 36.99 | 38.22 | * STIG & CT costs reflect \$2.60 and \$1.62/MWH variable O&M costs per 6-12-06 GSCA. |
| Oct-17 | | | | | CY2021 | 38.73 | 39.80 | Cost of Serving Demand: |
| Nov-17 | | | | | CY2022 | 40.74 | 41.48 | Compares price of meeting total monthly demand with (1) Hourly pool market clearing price; |
| Dec-17 | | | | | CY2023 | 42.42 | 42.77 | (2) Variable cost of pool gen. Pool Gen is sum of estimated costs divided by sum of generation. |

NCPA POOL RESOURCES 2017-18 FISCAL YEAR: Jul/Aug Actual & Sept - June 2018 Forecasted 275.0 250.0 LEC HYDRO 225.0 200.0 175.0 Net market purchases 150.0 H 125.0 100.0 Term Purchase 75.0 WAPA 50.0 25.0 GEO 0.0 Jul-17 Aug-17 Sep-17 Oct-17 Nov-17 Dec-17 Jan-18 Feb-18 Mar-18 Apr-18 May-18 Jun-18 Market Sales Market Purchases ZZZ Term Purchases LEC Stig & CT1 Hydro WAPA ≝ ≆⊐ Geo -LOAD

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 November 2017:
 - Monthly System Resource Adequacy Demonstration (filed September 15, 2017)
 - Monthly Supply Plan (filed September 15, 2017)

Industry Restructuring

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

Commitment Costs and Bidding Enhancements

 Through this initiative the CAISO will evaluate the following two topics: (1) if commitment proxy costs, generated bids, and default energy bids allow scheduling coordinators to accurately reflect and recover their generators' unit-specific costs; and (2) if changes to the economic bidding of commitment costs and associated market power mitigation methodology could increase market benefits when bidding under competitive market dynamics.

Bid Cost Recovery Enhancements

 In this initiative CAISO is evaluating changes to the way IFM and Real-Time Market Bid Cost Recovery (BCR) costs are allocated to market participants. More specifically, CAISO is evaluating if the Self-Scheduling offset currently incorporated into the IFM BCR should be removed, and if Real-Time Market BCR costs should be allocated using a two (2) tier mechanism. As a market participant who is exposed to BCR costs, NCPA has an interest in this stakeholder process; therefore, NCPA will closely monitor the development of this initiative.

Review of TAC Structure

 As described in the CAISO 2017 Stakeholder Initiative Catalog, during calendar year 2017 the CAISO will conduct a stakeholder initiative process to consider possible changes to the structure of the Transmission Access Charge (TAC). The CAISO currently charges the TAC to each MWh of metered internal end-use load (i.e., Gross Load) and exports, to recover participating transmission owners' costs of owning, operating and maintaining transmission facilities under CAISO operational control. Included in the initiative scope will be questions such as: (1) whether the current purely volumetric TAC rate structure should be retained, or should be changed to include other factors such as peak demand; and (2) whether the billing determinant for internal load should be modified to account for the load that is offset by the energy output of Distributed Energy Resources (DER).

Western

| | | Western Base Resource Tracking - NCPA Pool | | | | | | | | | | |
|--------|-----------------------|--|----------------|-------------------------|--------------------|---------------------------|------------------------------|--|--|--|--|--|
| | | Actual | | Costs & Rates | | | | | | | | |
| | BR | | | Base Resource & | Monthly Cost | CAISO LMP | 12-Mo Rolling | | | | | |
| | Forecast ¹ | BR Delivered | Difference | Restoration Fund | of BR ² | Differential ³ | Avg. Cost of BR ⁴ | | | | | |
| | (MWh) | (MWh) | (MWh) | (\$) | (\$/MWh) | (\$/MWh) | (\$/MWh) | | | | | |
| Jul-17 | 71,656 | 82,819 | 11,163 | \$2,334,679 | \$ 28.19 | \$ 1.60 | \$ 27.59 | | | | | |
| Aug-17 | 55,736 | 79,371 | 23,635 | \$2,334,679 | \$ 29.41 | \$ 0.08 | \$ 27.14 | | | | | |
| Sep-17 | 56,044 | - | (56,044) | \$1,979,032 | \$ 35.31 | \$ 0.10 | \$ 26.30 | | | | | |
| Oct-17 | 33,604 | - | (33,604) | \$824,588 | \$ 24.54 | \$ 0.10 | \$ 25.43 | | | | | |
| Nov-17 | 19,601 | - | (19,601) | \$824,588 | \$ 42.07 | \$ 0.10 | \$ 24.68 | | | | | |
| Dec-17 | 15,404 | - | (15,404) | \$824,588 | \$ 53.53 | \$ 0.10 | \$ 24.49 | | | | | |
| Jan-18 | 7,358 | - | (7,358) | \$824,588 | \$ 112.07 | \$ 0.10 | \$ 26.22 | | | | | |
| Feb-18 | 13,359 | - | (13,359) | \$824,588 | \$ 61.72 | \$ 0.10 | \$ 28.47 | | | | | |
| Mar-18 | 30,216 | - | (30,216) | | \$ 27.29 | \$ 0.10 | \$ 30.03 | | | | | |
| Apr-18 | 50,443 | - | (50,443) | | \$ 39.79 | \$ 0.10 | \$ 30.95 | | | | | |
| May-18 | 66,832 | - | (66,832) | | \$ 30.03 | \$ 0.10 | \$ 33.25 | | | | | |
| Jun-18 | 74,030 | - | (74,030) | \$2,007,032 | \$ 27.11 | \$ 0.10 | \$ 33.63 | | | | | |
| 1/ | As forecasted | d in NCPA 17/1 | 8 Budget | | | | | | | | | |
| 2/ | = (Western C | ost + Restorati | on Fund)/BR [| Delivered, for Pool I | Participants onl | у. | | | | | | |
| 3/ | = (MEEA LMP | P - PG&E LAP LI | MP) using publ | ic market informati | on (i.e. not set | tlement quality |). | | | | | |
| 4/ | Based on BR | Delivered (Act | ual) when avai | lable and BR Forec | ast in all other o | cases. Includes | CAISO LMP | | | | | |
| | impact. | | | | | | | | | | | |

Western Base Resource Tracking (NCPA Pool)

• The Displacement Program continued its strong performance for Pool Members with August savings estimated at 27,219 MWh for \$190,000.

Debt and Financial Management

- There is a growing consensus the Fed will shift its focus from raising short-term rates to reducing its purchase of Treasury and mortgage-backed securities (MBS). An announcement could follow the Fed's September 20 meeting, unless the budget and debt ceiling battles in Washington continue matter.
- The yield curve flattened further in August as short-maturity yields, which are closely aligned to the unchanged Federal funds rate, were all but unchanged. The yield on 10-year Treasury notes fell 18 basis points (bps) to 2.12%, a low for the year. The 30-year Treasury fell 17 bps to 2.73%.
- The Finance Committee recommended Commission approval of a new financial advisory services contract with PFM Financial Advisors and PFM Swap Advisors. PFM agreed to maintain the annual retainer cost at the 2006 pricing level for the Agency and the agreements will be for a three-year period including the option of two, two-year renewals. PFM's financial advisory services will be available to NCPA members through the Support Services Program Agreement (SSPA).
- The Finance Committee recommended Commission approval of a three-year banking agreement with U.S. Bank, N.A. The agreement will secure reduced pricing on various transaction-related items and in addition, the bank will increase the Earnings Credit Rate (ECR) the Agency receives on the collected balances which help offset the banking fees. The significance of this increase will allow the Agency to hold fewer dollars as a collected balance and move the remaining balance into an interest bearing account. This change is anticipated to bring an additional \$10,000 per month in new interest income to members and non-members balances that are held with the Agency.

Schedule Coordination Goals

Software Development

- Planning and Configuration of the Scheduling Software Suite for 'PCWA' and 'PCCE' SCID portfolios are underway. The Scheduling Software Suite includes MARS (Member and Resource System) database, Deal Manager application, Prescheduler application, PAGES (Power Agency Grid Energy Scheduler) application and TABS (Trading and Bidding System) application.
- Deployment of the Scheduling Suite for handling Santa Clara's SNCL SCID is scheduled to go live this month of September.
- IS staff continues to work on the new Interval Reading schema to replace the legacy Meter schema. This project will last several months to complete the migration of the existing data and to redirect the applications to use the new model. The target is to finish by the end of 2017.

- Various other Software Development is underway. The NERC-WECC Compliance Matrix is a tool to aid the Compliance Working Group to track standards compliance. The Risk Management App is a tool for the Risk Manager to maintain counterparty credits and ratings and provides Mark-to-Market report to the business users. The Green House Gas Accounting App is a tool for the business user to track GHG transactions by Member. The Shared Services App has three modules about Training, Support Service, and Vendor Contract. It calculates the billable amount for the Member's portion of the Shared Services.
- NCPA Information Services successfully deployed The MRI-S Application Interface used to download and upload CAISO meter data.

<u>Network</u>

- IS has completed migrating all NCPA e-mail mailboxes to Office 365.
- Additional collaboration sites are being created to expand the functionality of the Agency's new extranet, "NCPA Connect." This will provide further capabilities to share and edit documents for specific working groups and committees.
- Information from the Cyber Security Incident Response exercise that was completed in August has been collected and turned into a toolkit that will help in the planning and preparation for future exercises. A copy of this toolkit will be sent to APPA as part of student intern activities and requirements for the Deed grant.
- Additional 56k circuit upgrades to T1 at Portola, Ukiah and the Disaster Recovery Center are expected to be completed within the next couple of month.
- Work has begun on streamlining the meetings workflow process using SharePoint to assist in preparing documents and presentations for a variety of NCPA committees. IS anticipates testing sometime in November with a first-of-the-year rollout into production.
- Information Services continues to work alongside Generation Services to help expand their physical security presence at the plant locations. This includes diagramming, installing and configuring network switches in preparation for security devices.
- PCWA network and point testing continues to move forward as we prepare for a January 1st cutover date.
- NCPA is researching the capability to use digital signatures for internal document approvals. This will help streamline the current process and cut back on the amount of time it takes to approve document requests.

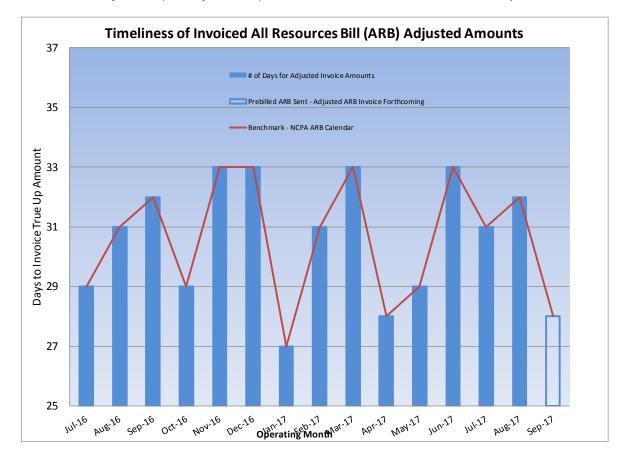
NCPA Bills & Settlements

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 September 2017 NCPA All Resources Bill (ARB) monthly invoice sent to members on August 25, 2017 contains:

- ✓ September 2017 monthly pre-billed budget/forecast amounts;
- ✓ July 2017 (1st Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- ✓ June 2017 (2nd Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
- ✓ April 2017 (3rd Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
- ✓ October 2016 (4th Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
- ✓ December 2015 (5th Adjustment) T+18 month recalculated CAISO settlement true-up allocations;



✓ July 2014 (6th Adjustment) T+35 month CAISO settlement true-up

Legislative & Regulatory

Political Arena State/Federal/Western Programs

- NCPA was actively involved in lobbying major energy and utility bills during the final weeks of the state legislative session, which ended on September 15th. NCPA worked with a broad range of stakeholders to successfully defeat two grid regionalization bills. NCPA's opposition strategy included a letter writing campaign, meetings with legislative and committee offices, direct communication between NCPA members and legislators, and interviews with the press. NCPA also worked with its member utilities to lobby for amendments to SB 100, which proposes a 100% clean energy goal by 2045. SB 100 was ultimately held this session and is now a two year bill.
- NCPA staff sought to secure funding for electric vehicle (EV) charging infrastructure at the Electrify America kick-off meeting on Tuesday, September 12. Electrify America is a subsidiary of Volkswagen and will invest \$800 million in California over the next 10 years in EV infrastructure projects. The \$800 million will be invested in four 30-month cycles, with the first cycle running through June 2019. The kickoff meeting was invitation-only and focused on Electrify America's planned investments in the San Francisco-Oakland-Hayward area, which includes Alameda, BART, and Port of Oakland. The current plan specifically identifies a charging station in Alameda and could include sites at that Port and BART. Similar meetings for the planned investments in San Jose-Santa Clara and Sacramento-Roseville areas will be held in early-mid October.
- NCPA is leading an effort to assist the North American Electric Reliability Corporation (NERC) as NERC addresses industry concerns regarding inconsistent application of its compliance, monitoring, enforcement, and registration programs. Due to its active engagement as a member of NERC's Compliance and Certification Committee (CCC), NCPA was unanimously selected to chair the CCC's ERO Enterprise Alignment Working Group—a subgroup of CCC members working directly with senior NERC executives to shape projects that will promote consistent auditing practices and reduce overall compliance costs for NCPA members subject to NERC reliability standards. In this regard, the CCC will serve as: 1) an initial point of contact for stakeholders with concerns about the NERC program, and 2) a resource for outreach and implementation as the program is refined.
- NCPA submitted comments to the Bureau of Reclamation (Bureau) regarding its final Central Valley Project (CVP) Cost Allocation Study (CAS). NCPA challenged the Bureau's arbitrary timeline to wrap up the CAS by year's end as it disallows sufficient time for power customers to review almost seven years of data inputs, modeling, and other materials that will be contained in the administrative draft report. As well, this schedule does not provide any time for the Bureau to review or seriously consider stakeholder comments. Also, NCPA pointed out that the Bureau's initial power assumptions were erroneous and, thereby, artificially inflate the value of CVP power.

Human Resources

<u>Hires:</u> None.

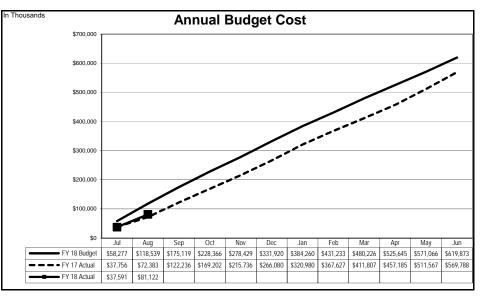
Intern Hires: None.

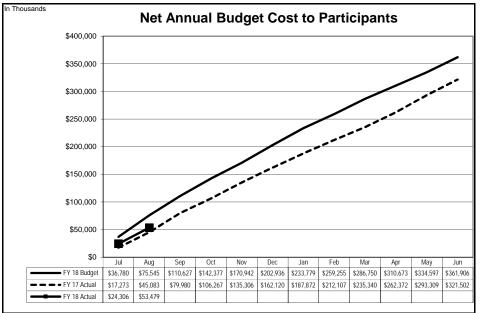
Promotions/Position Changes: None.

<u>Separations:</u> Scott Crosby, System Dispatcher, retired from his position at the Roseville Headquarters after 17 years of service.

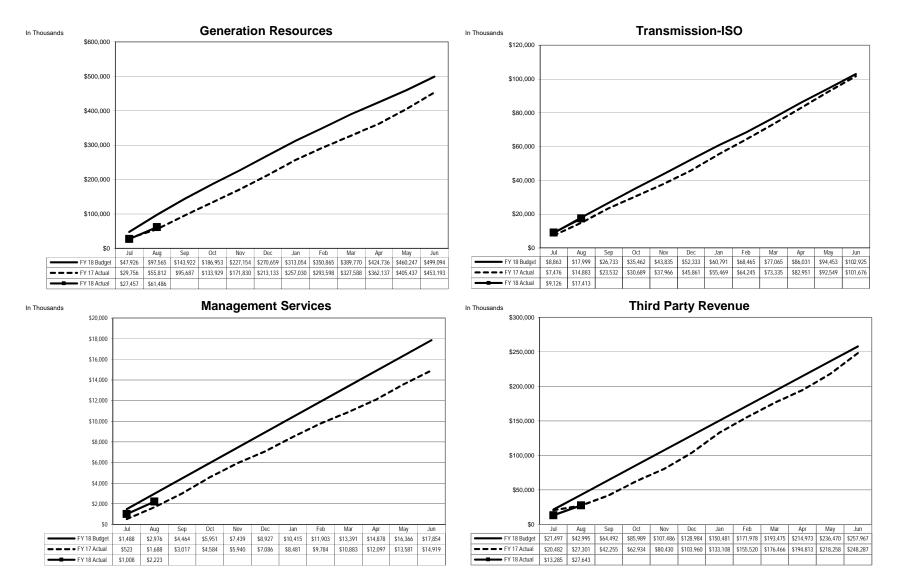
Annual Budget 2017-2018 Fiscal Year To Date As of August 31, 2017

| Program | | | | | | | | | |
|---------|---|--|---|--|--|--|--|--|--|
| Annual | • | Under(Ovr) | YTD % | | | | | | |
| Budget | Actual | Budget | Remaining | | | | | | |
| | | | J | | | | | | |
| 53 862 | 8 731 | \$ 45 131 | 84% | | | | | | |
| | | | 85% | | | | | | |
| | | | 76% | | | | | | |
| | | | 82% | | | | | | |
| | | | 82% | | | | | | |
| | | | 83% | | | | | | |
| | | | 80% | | | | | | |
| | | | 82% | | | | | | |
| | | , | 85% | | | | | | |
| | , | | 82% | | | | | | |
| | | | 93% | | | | | | |
| | | | 61% | | | | | | |
| | | | 88% | | | | | | |
| 433,034 | 01,400 | 437,000 | 0070 | | | | | | |
| 102,925 | 17,413 | 85,511 | 83% | | | | | | |
| · · · | | | | | | | | | |
| | | | | | | | | | |
| 1 976 | 280 | 1 687 | 85% | | | | | | |
| | | | 89% | | | | | | |
| | - | - | 92% | | | | | | |
| | - | | | | | | | | |
| | ÷. | | 88% | | | | | | |
| | | | 88% | | | | | | |
| 625 | 30 | 595 | 95% | | | | | | |
| | | | | | | | | | |
| 5,864 | 837 | 5,027 | 86% | | | | | | |
| / - | | | 87% | | | | | | |
| 424 | | | 89% | | | | | | |
| 1,152 | | | 88% | | | | | | |
| 18 | 0 | 17 | 98% | | | | | | |
| 88 | 9 | 79 | 90% | | | | | | |
| 130 | 13 | 117 | 90% | | | | | | |
| 10,323 | 1,389 | 8,934 | 87% | | | | | | |
| 207 | 21 | 186 | 90% | | | | | | |
| 774 | | 687 | 89% | | | | | | |
| | - | | 88% | | | | | | |
| | - | - | 92% | | | | | | |
| - | | | 0270 | | | | | | |
| 17,854 | 2,223 | 15,631 | 88% | | | | | | |
| | , | | 87% | | | | | | |
| 010,072 | 01,122 | 550,751 | | | | | | | |
| | | | | | | | | | |
| 70,367 | 20,876 | 49,491 | 70% | | | | | | |
| 151,019 | 3,944 | 147,075 | 97% | | | | | | |
| 2,731 | 392 | 2,339 | 86% | | | | | | |
| 18,026 | - | | | | | | | | |
| - | - | - | | | | | | | |
| 110 | 18 | 92 | 83% | | | | | | |
| | 2,411 | - | 85% | | | | | | |
| 257,967 | 27,643 | 212,298 | 82% | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | Budget 53,862 32,120 2,849 8,623 61,088 158,542 53,389 3,457 30,120 19,318 233,822 446 499,094 102,925 102,925 102,925 102,925 102,925 5,864 4,079 625 5,864 2,647 424 1,152 18,88 88 130 10,323 207 774 319 1,526 - 17,854 619,872 70,367 15,019 2,731 18,026 - 10 10 15,713 | Annual Budget Actual 53,862 8,731 32,120 4,786 2,849 684 8,623 1,546 61,088 10,786 3,457 606 30,120 4,662 19,318 3,527 233,822 15,205 446 175 499,094 61,486 102,925 17,413 102,925 17,413 102,925 17,413 1,976 289 838 94 430 64 4326 511 4,079 499 625 30 5,864 837 2,647 351 424 46 1,152 133 18 0 88 9 130 13 10,323 1,389 207 21 77,46 87 319 40 <t< td=""><td>Annual Budget Under(Ovr) Budget Budget Actual Budget 53,862 8,731 \$ 45,131 32,120 4,786 27,334 2,849 684 2,165 8,623 1,546 7,076 61,088 10,786 50,302 158,542 26,533 132,009 53,389 10,778 42,611 3,457 606 2,851 30,120 4,662 25,458 19,318 3,527 15,791 233,822 15,205 218,618 446 175 271 499,094 61,486 437,608 102,925 17,413 85,511 102,925 17,413 85,511 102,925 17,413 85,511 1,976 289 1,687 838 94 743 830 64 766 436 51 385 4,079 499 3,581</td></t<> | Annual Budget Under(Ovr) Budget Budget Actual Budget 53,862 8,731 \$ 45,131 32,120 4,786 27,334 2,849 684 2,165 8,623 1,546 7,076 61,088 10,786 50,302 158,542 26,533 132,009 53,389 10,778 42,611 3,457 606 2,851 30,120 4,662 25,458 19,318 3,527 15,791 233,822 15,205 218,618 446 175 271 499,094 61,486 437,608 102,925 17,413 85,511 102,925 17,413 85,511 102,925 17,413 85,511 1,976 289 1,687 838 94 743 830 64 766 436 51 385 4,079 499 3,581 | | | | | | |



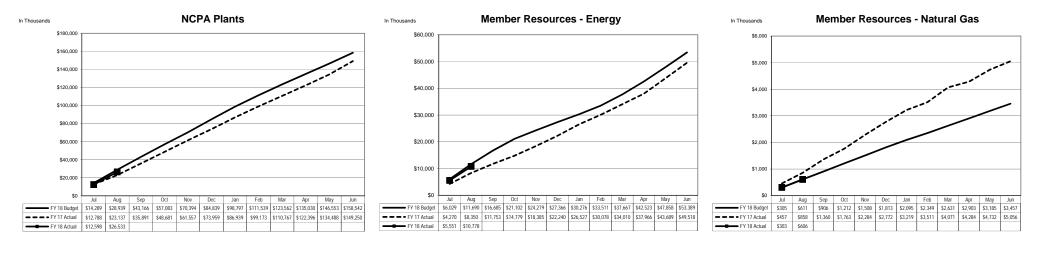


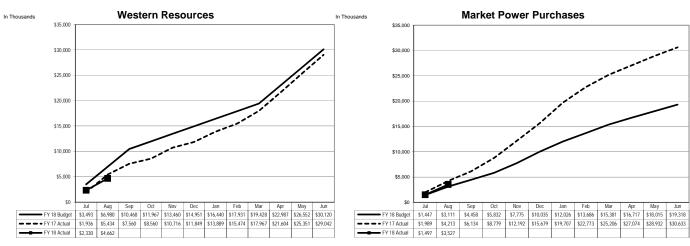
Annual Budget Budget vs. Actual By Major Area 2017-2018 Fiscal Year To Date As of August 31, 2017



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

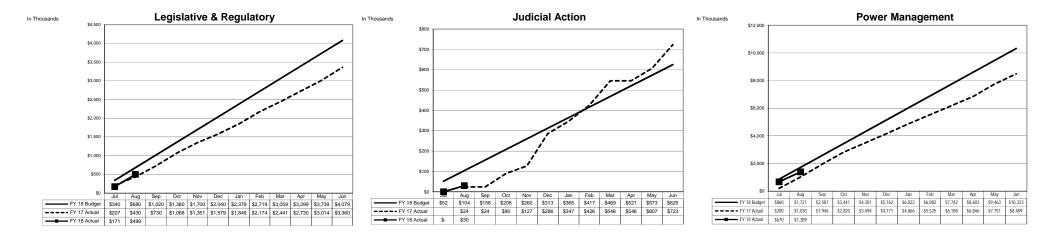
Annual Budget Cost Generation Resources Analysis By Source 2017-2018 Fiscal Year To Date As of August 31, 2017

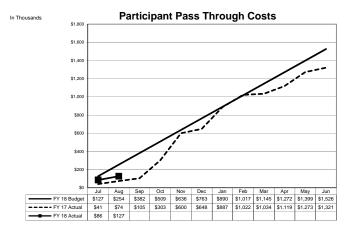




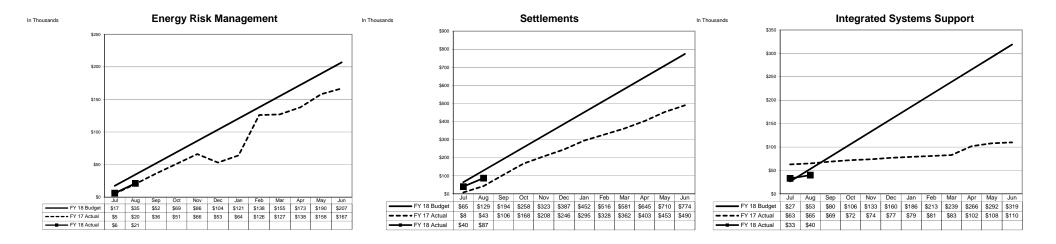
Footnote: Other Resources (Graeagle, BART PV, Gridley PV) are included in Market Power Purchases

Annual Budget Cost Management Services Analysis By Source 2017-2018 Fiscal Year To Date As of August 31, 2017

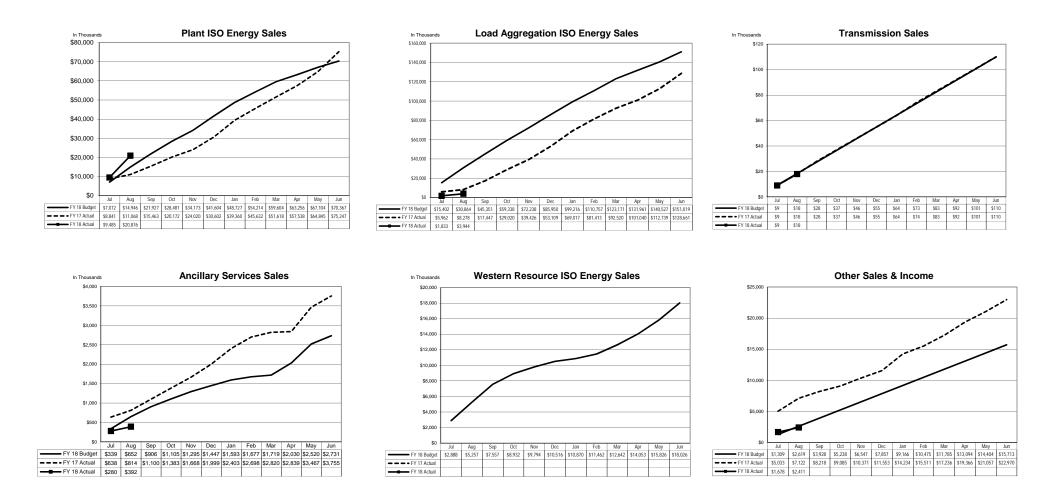




Annual Budget Cost Management Services Analysis By Source 2017-2018 Fiscal Year To Date As of August 31, 2017



Annual Budget Cost Third Party Revenue Analysis By Source 2017-2018 Fiscal Year To Date As of August 31, 2017



Annual Budget NCPA Generation Detail Analysis By Plant 2017-2018 Fiscal Year To Date As of August 31, 2017

Generation Cost Analysis

\$ in thousands

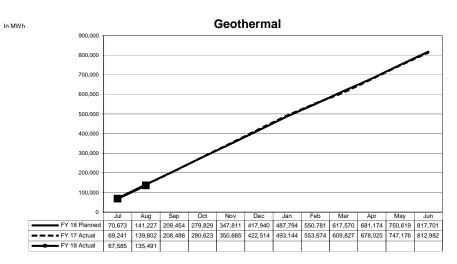
| | | | Geothermal | | |
|--|-----------|------------|------------|------------|-----------|
| | | | \$/MWh | Under(Ovr) | YTD % |
| | Budget | Actual | Actual | Budget | Remaining |
| Routine O & M | \$ 17,564 | \$ 2,463 | \$ 18.18 | \$ 15,102 | 86% |
| Capital Assets/Spare Parts Inventories | 1,440 | 212 | 1.56 | 1,228 | 85% |
| Other Costs | 7,863 | 1,215 | 8.96 | 6,648 | 85% |
| CA ISO Charges | 317 | 73 | 0.54 | 244 | 77% |
| Debt Service | 4,936 | 823 | 6.07 | 4,113 | 83% |
| Annual Budget | 32,120 | 4,786 | 35.32 | 27,334 | 85% |
| Less: Third Party Revenue | | | | | |
| Interest Income | 148 | 15 | 0.11 | 132 | 90% |
| ISO Energy Sales | 28,349 | 5,559 | 41.03 | 22,790 | 80% |
| Ancillary Services Sales | - | (4) | (0.03) | 4 | |
| Effluent Revenues | 700 | - | - | 700 | 100% |
| Misc | 110 | 19 | 0.14 | 92 | |
| | 29,307 | 5,589 | 41.25 | 23,718 | 81% |
| Net Annual Budget Cost to Participants | \$ 2,813 | \$ (803) | \$ (5.93) | \$ 3,616 | 129% |
| | | | | | |
| Net GenerationMWh @ Meter | 817,701 | 135,491 | | | |
| \$/MWh (A) | \$ (2.60) | \$ (12.00) | | | |

| | Hydroelectric | | | | | | | |
|--|---------------|----|---------|----|--------|------------|-----------|--|
| | | | | | \$/MWh | Under(Ovr) | YTD % | |
| | Budget | | Actual | | Actual | Budget | Remaining | |
| Routine O & M | \$ 8,465 | \$ | 779 | \$ | 5.08 | \$ 7,686 | 91% | |
| Capital Assets/Spare Parts Inventories | 2,365 | | 463 | | 3.02 | 1,902 | 80% | |
| Other Costs | 3,093 | | 410 | | 2.67 | 2,683 | 87% | |
| CA ISO Charges | 1,680 | | 703 | | 4.58 | 978 | 58% | |
| Debt Service | 38,258 | | 6,376 | | 41.58 | 31,882 | 83% | |
| Annual Budget | 53,862 | | 8,731 | | 56.93 | 45,131 | 84% | |
| Less: Third Party Revenue | | | | | | | | |
| Interest Income | 244 | | 24 | | 0.16 | 220 | 90% | |
| ISO Energy Sales | 22,050 | | 8,439 | | 55.03 | 13,611 | 62% | |
| Ancillary Services Sales | 2,222 | | 300 | | 1.96 | 1,922 | 86% | |
| Misc | - | | 1 | | 0.01 | (1) | | |
| | 24,516 | | 8,765 | | 57.15 | 15,751 | 64% | |
| Net Annual Budget Cost to Participants | \$ 29,346 | \$ | (34) | \$ | (0.22) | \$ 29,380 | 100% | |
| | | | | | | | - | |
| Net GenerationMWh @ Meter | 522,654 | | 153,366 | | | | | |
| \$/MWh (A) | \$ (17.05) | \$ | (41.80) | | | | | |

Footnotes:

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

MWhs Generated



Hydro In MWh 1,000,000 900,000 800,000 700.000 FY 94-95 600.000 500.000 400,000 300,000 FY 91-92 200,000 100,000 Sep Oct Nov Jan Feb Mar May Dec Apr Jun Jul Aug 194,612 232,012 FY 18 Planned 30.560 65.860 97,230 130.550 160.250 276,972 341,292 411,324 489,634 522,654 12,676 28,667 44,047 58,599 69,461 91,796 176,896 259,973 398,950 551,071 721,320 885,279 - Wet **— — – –** Dry 18,574 41,592 66,527 78,750 84,000 87,598 91,693 105,353 130,546 179,718 185,948 193,288 FY 18 Actual 89,424 153,366

Annual Budget NCPA Generation Detail Analysis By Plant 2017-2018 Fiscal Year To Date As of August 31, 2017

Generation Cost Analysis

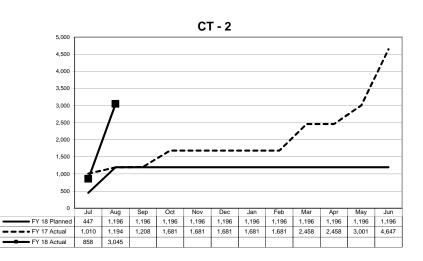
| | Lodi Energy Center | | | | | | | | |
|--|--------------------|----|---------|----|--------|----|------------|-----------|--|
| | | | | | \$/MWh | I | Under(Ovr) | YTD % | |
| | Budget | | Actual | | Actual | | Budget | Remaining | |
| Routine O & M | \$ 10,174 | \$ | 1,388 | \$ | 11.54 | \$ | 8,786 | 86% | |
| Fuel | 14,877 | | 3,591 | | 29.87 | | 11,286 | 76% | |
| AB 32 GHG Offset | - | | - | | - | | - | | |
| CA ISO Charges and Energy Purchases | 3,921 | | 740 | | 6.15 | | 3,181 | 81% | |
| Capital Assets/Spare Parts Inventories | 2,636 | | 335 | | 2.79 | | 2,301 | 87% | |
| Other Costs | 3,063 | | 329 | | 2.74 | | 2,734 | 89% | |
| Debt Service | 26,417 | | 4,403 | | 36.62 | | 22,014 | 83% | |
| Annual Budget | 61,088 | | 10,786 | | 89.72 | | 50,302 | 82% | |
| Less: Third Party Revenue | | | | | | | | | |
| Interest Income | 172 | | 35 | | 0.29 | | 137 | 79% | |
| ISO Energy Sales | 19,760 | | 5,552 | | 46.18 | | 14,209 | 72% | |
| Ancillary Services Sales | 397 | | 96 | | 0.80 | | 300 | 76% | |
| Transfer Gas Credit | - | | - | | - | | - | 0% | |
| Misc | - | | 0 | | 0.00 | | (0) | 0% | |
| | 20,329 | | 5,684 | | 47.28 | | 14,645 | 72% | |
| Net Annual Budget Cost to Participants | \$ 40,759 | \$ | 5,103 | \$ | 42.44 | \$ | 35,657 | 87% | |
| Net GenerationMWh @ Meter | 377,711 | | 120,219 | | | | | | |
| \$/MWh (A) | \$ 37.97 | \$ | 5.82 | 1 | | | | | |

| | | (| Combustie | on | Turbine N | о. | 2 (STIG) | |
|--|----------------|----|-----------|----|-----------|----|------------|-----------|
| | | | | | \$/MWh | I | Under(Ovr) | YTD % |
| | Budget | | Actual | | Actual | | Budget | Remaining |
| Routine O & M | \$ 1,471 | \$ | 249 | \$ | 81.77 | \$ | 1,222 | 83% |
| Fuel and Pipeline Transport Charges | 835 | | 153 | | 50.21 | | 682 | 82% |
| Capital Assets/Spare Parts Inventories | 121 | | - | | - | | 121 | 100% |
| Other Costs | 502 | | 69 | | 22.81 | | 433 | 86% |
| CA ISO Charges | 0 | | 126 | | 41.38 | | (126) | -27118% |
| Debt Service | 5,693 | | 949 | | 311.57 | | 4,744 | 83% |
| Annual Budget | 8,623 | | 1,546 | | 507.75 | | 7,076 | 82% |
| Less: Third Party Revenue | | | | | | | | |
| Interest Income | 43 | | 10 | | 3.19 | | 33 | 77% |
| ISO Energy Sales | 89 | | 529 | | 173.72 | | (440) | -496% |
| Ancillary Service Sales | - | | - | | - | | - | 0% |
| Fuel and Pipeline Transport Credits | 864 | | 191 | | 62.80 | | 673 | 78% |
| Misc | - | | - | | - | | - | 0% |
| | 996 | | 730 | | 239.72 | | 266 | 27% |
| Net Annual Budget Cost to Participants | \$ 7,627 | \$ | 816 | \$ | 268.03 | \$ | 6,810 | 89% |
| | | | | | | | | |
| Net GenerationMWh @ Meter | 1,196 | | 3,045 | | | | | |
| \$/MWh (A) | \$ 1,616.78 | \$ | (43.54) | | | | | |

Footnotes:

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

Lodi Energy Center In MWh 400,000 350,000 300,000 250,000 200,000 150,000 100,000 50,000 0 Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun 113,846 168,104 373,283 373,283 377,711 FY 18 Planned 54,110 213,880 245,557 301,750 348,398 368,662 373,283 107,660 171,381 199,799 238,717 254,034 261,119 261,119 264,555 300,552 - - - FY 17 Actual 76,008 133,257 153,893 54,014 FY 18 Actual 120,219



MWhs Generated

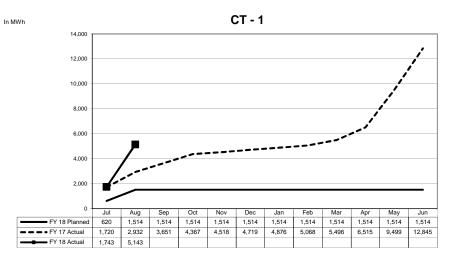
In MWh

Annual Budget NCPA Generation Detail Analysis By Plant 2017-2018 Fiscal Year To Date As of August 31, 2017

Generation Cost Analysis

| | Combustion Turbine No. 1 | | | | | | | | |
|--|--------------------------|----|---------|----|---------|----|------------|-----------|--|
| | | | | | \$/MWh | | Jnder(Ovr) | YTD % | |
| | Budget | | Actual | | Actual | | Budget | Remaining | |
| Routine O & M | \$ 1,520 | \$ | 320 | \$ | 62.16 | \$ | 1,200 | 79% | |
| Fuel and Pipeline Transport Charges | 172 | | - | | - | | 172 | 100% | |
| Capital Assets/Spare Parts Inventories | 642 | | 67 | | 12.96 | | 575 | 90% | |
| Other Costs | 292 | | 204 | | 39.74 | | 88 | 30% | |
| CA ISO Charges | 1 | | 93 | | 18.05 | | (92) | -15719% | |
| Debt Service | - | | - | | | | - | | |
| Annual Budget | 2,627 | | 684 | | 132.91 | | 1,943 | 74% | |
| Less: Third Party Revenue | | | | | | | | | |
| Interest Income | - | | - | | | | - | | |
| ISO Energy Sales | 119 | | 797 | | 155.00 | | (678) | 0% | |
| Ancillary Services Sales | - | | - | | - | | - | 0% | |
| Misc | - | | - | | - | | - | 0% | |
| | 119 | | 797 | | 155.00 | | (678) | -570% | |
| Net Annual Budget Cost to Participants | \$ 2,508 | \$ | (114) | \$ | (22.09) | \$ | 2,622 | 105% | |
| | | | | | | | | | |
| Net GenerationMWh @ Meter | 1,514 | | 5,143 | | | | | | |
| \$/MWh (A) | \$ 1,656.50 | \$ | (22.09) | | | | | | |

MWhs Generated



Footnotes:

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