



BUSINESS PROGRESS REPORT

May 2021

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Generation Costs & Reliability

Combustion Turbine Project

Unit Operation for April 2021

Unit	Availability		Production			Reason for Run
CT1 Alameda	Unit 1	Unit 2	Unit 1	58.7	MWh	CAISO / CAISO
	100.0%	98.8%	Unit 2	44.4	MWh	
Curtailements, Outages, and Comments:						
Unit 1: Normal operation.						
Unit 2: 4/23 @ 03:00 - 12:00; PG&E Gas Supply Work, OMS 10018469						
Unit	Availability		Production			Reason for Run
CT1 Lodi	100.0%		119.3 MWh			CAISO
Curtailements, Outages, and Comments:						
Normal operation.						
Unit	Availability		Production			Reason for Run
CT2 STIG	1.1%		0.0 MWh			CAISO
Curtailements, Outages, and Comments:						
4/01 @ 00:00 - 4/30 @ 16:20 - Annual Maintenance; OMS 9128234						
Unit	Availability		Production			Reason for Run
LEC	0.0%		0 MWh			CAISO
Curtailements, Outages, and Comments:						
4/01 @ 00:00 - 4/30 @ 23:59; Annual Maintenance, OMS 9128237						

Maintenance Summary – Specific per asset above.

Geothermal Facilities

Availability/Production for April 2021

Unit	Availability	Net Electricity Generated/Water Delivered	Out-of-Service/Descriptors
Unit 1	100 %	18,807 MWh	U1 had no outages for the month
Unit 2	100 %	*20,809 MWh	U2 had no outages for the month
Unit 3	N/A %	N/A	Unit 3 remains out of service.
Unit 4	100 %	29,226 MWh	U4 had no outages for the month
Southeast Geysers Effluent Pipeline	100 %	166.3 mgallons	Average flow rate: 3,850 gpm
Southeast Solar Plant	N/A	148,749 KWh	Year-to-date KWh: 3,515,668
Bear Canyon Pump Station Zero Solar	N/A	239,623 KWh	Year-to-date KWh: 5,182,468

* Accounts for an additional 1,510 MWh of house load for the 21KV power supply to the effluent pipeline supplied from Unit #2.

Hydroelectric Project

Availability/Production for April 2021

Units	Availability	Net Electricity Generated	Out-of-Service
Collierville Unit 1	100%	19679 MWh	CV Unit 1 – No Outages
Collierville Unit 2	100%	12881 MWh	CV Unit 2 – No Outages
Spicer Unit 1	95.94%	0 MWh	NSM1- out of service on 4/14/21 to 4/15/21 from 0643 to 1151 for PG&E work at Salt Springs.
Spicer Unit 2	95.94%	0 MWh	NSM2- out of service on 4/14/21 to 4/15/21 from 0643 to 1151 for PG&E work at Salt Springs.
Spicer Unit 3	95.94%	124 MWh	NSM3- out of service on 4/14/21 to 4/15/21 from 0643 to 1154 for PG&E work at Salt Springs.

Operations & Maintenance Activities:

- CMMS work orders
- Winter Snow Removal Site access work
- CV and NSM sump characterization studies and report development
- Transmission Line Vegetation Management Work
- Completed Line Patrol from Bellota to Collierville
- Submitted Hypothetical Dam Failure Inundation Map to DSOD
- Released Murphys HVAC replacement project RFP
- Received Commission approval for Upper Utica Dams Maintenance work

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

- There were no Cal OSHA Recordable, Lost Time, or vehicle accidents in the month of April.
- 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 24, 2021.
- 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 2021 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	195	1,005	2,210	3,194
Work Hours Since Last Recordable	15,995	208,568	331,758	2,667,022
LTA's (this month)	0	0	0	0
LTA's (calendar year)	0	0	0	0
Days without LTA	4,944	2,073	10,114	6,207
Work Hours without LTA	448,566	425,543	742,302	2,289,040
Vehicle Incident (month)	0	0	0	0
Vehicle Incident (calendar year)	0	0	0	0

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

** NCPA HQ: Roseville employees at the Main Office

Data originates from OSHA logs, HR records and payroll information.
Days and Hours are calculated through pay period ended April 24, 2021.

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 2021 Data

	April 2021		Calendar Year 2021	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	292.1 4/29 @ 1900	171,597	329.69 1/26 @ 1900	711,428
SVP	500.61 4/28 @1700	319,813	501.56 3/31 @ 1700	1,279,902
MSSA	786.02 4/28 @ 1800	491,410	804.83 1/27 @ 1900	1,991,330

Last Year 2020 Data*

	April 2020		Calendar Year 2020	
	Peak MW	MWh	Peak MW	MWh
NCPA Pool	307.49 4/28 @1800	165,457	467.45 8/14 @ 1700	721,992
SVP	473.35 4/28 @1500	296,015	586.3 8/14 @ 1700	1,219,052
MSSA	770.47 4/28 @ 1800	461,472	1053.75 8/14 @ 1700	1,941,044

* Last year's data added for comparison purposes only

System Peak Data

	All Time Peak Demand	2021 Peak Demand
NCPA Pool	517.83 MW on 7/24/06 @ 1500	329.69 1/26 @ 1900
SVP	587.78 MW on 6/11/19 @ 1600	501.56 3/31 @ 1700
MSSA	1070.79 MW on 9/1/17 @ 1700	804.83 1/27 @ 1900

- 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 2021	Calendar Year 2021
MSSA % Within the Band	98.03%	98.54%

- NCPA continues to operate in split operation with the SC's working out of the backup control center and the system dispatchers working out of the primary control center due to COVID-19.
- CAISO issued a System Operating Message for 19 days warning of a potential for over supply during the middle part of the day.
- CAISO issued a System Operating Message for 3 days warning of a Contingency in progress.
- There were no Public Safety Power Shutoff (PSPS) warnings issued by PG&E.

Pooling, Portfolio Planning & Forecasting

- NCPA Pool load during April 2021 was 171,421 MWh, or 96.3% of forecast due to generally mild temperatures. Pool load during April increased 3.7% over pandemic-influenced April 2020. The weather outlook for May 2021 is for above-normal temperatures, with the load forecast at 188,470 MWh.
- Lodi Energy Center (LEC) was on a month-long maintenance outage during April, thus producing no energy. LEC began generating again on May 1 and is forecasted to produce 14,384 MWh for the pool during May. With both natural gas and power prices significantly higher than a year ago and continuing to rise, total generation for the pool is likely to be somewhat less than that.
- During April 2021, 0.76" of rain was recorded at the Big Trees gauge. Average March Big Trees precipitation is 4.64".
- The Value of Storage (VOS) of New Spicer Meadow Reservoir (NSMR) has been increased from \$150/MWh to \$200/MWh.
- NSMR storage as of April 30, 2021 was at 83,720-acre feet. The historical average NSMR storage at the end of April is 101,042-acre feet. As of May 12, 2021 NSMR storage is 91,618-acre feet. The current NCPA Pool share of NSMR storage is 39,268-acre feet.
- Combined Calaveras Project generation for the Pool in April 2021 totaled 16.7 GWh, up from 7.5 GWh in March 2021. The Pool's 16.7 GWh in April 2021 was below the pre-month forecast of 29.2 GWh which is due to a dry month of April and persistent drought conditions.
- Western Base Resource (BR) deliveries for the Pool during April 2021, at 27,179 MWh, were 65% of the pre-month forecast of 41,535 MWh, due to the late-April announcement of the Shasta generator bypass operation to protect fish migration. Displacement program energy totaled 940 MWh. Western's forecast for the Pool's share of May 2021 generation is dependent on the bypass operation, with the full bypass implying a 25% reduction in generation.
- The PG&E Citygate gas index averaged \$3.855/MMBtu for delivery on May 4, 2021, above the average PG&E gas price during April of \$3.746/MMBtu as both NYMEX gas and basis prices have been rising due to flat production and growing exports of natural gas. Prices look higher for the summer, with increased power burn expected to spur regional price competition. The May 2021 PG&E Citygate Bidweek price is \$4.14/MMBtu, 52.5 cents higher than April's.
- Day-Ahead NP15 electricity prices averaged \$35.06/MWh (on-peak hours) and again higher, \$36.28 during the off-peak hours) during April 2021, with a high of \$83.15 and a low of \$1.31. Prices this April were 63.9% higher than April 2020 (on-peak) and 65.9% higher (off-peak).

NCPA Pool Loads & Resources Value Summary								
Peak and Energy Summary				Estimated Production Costs			Cost of Serving Demand	
Apr-21								
Demand	Coincident Peak (MW)	Total MWh	Pre-Month Forecast Values	Avg. MW	NCPA Pool		Totals	Avg (\$/MWh)
	Apr-28-21 Hour 19				Cost/Revenue (Estimate)	Variable Cost (\$/MWh)		
	291.1	171,421	177,918	238.1	N/A	N/A		
WAPA	-	27,179	41,535	37.7	\$ 1,943,287	\$ 71.50	\$ 6,288,843	\$ 36.69
Geothermal	-	28,496	23,441	39.6	541,418	19.00		
Hydro	-	16,655	23,004	23.1	99,931	6.00		
Stig & CTs	-	128	-	0.2	5,396	42.17		
LEC	-	-	-	-	-	32.38		
Contracts	-	97,128	89,929	134.9	5,048,490	51.98	\$ 7,721,181	\$ 45.04
Market - Net	291.1	1,835	9	2.5	44,444	36.36		
(Net Sales = Negative)								
Net Total	291.1	171,421	177,918	238.1	\$ 7,682,967	\$ 45.04		

Monthly Market Summary						
Month	Pool Energy (MWh)	HLH Avg (\$/MWh)	MCP (\$/MWh)	Avg Variable Cost of Pool Generation (\$/MWh)	Forward Prices (EOX NP15 HLH Ask Prices) (\$/MWh)	
					NP15 4/1/2021	5/4/2021
Jul-20	203,610	\$ 27.80	\$ 37.25		Jul-21 \$ 86.87	\$ 96.52
Aug-20	216,986	\$ 59.74	\$ 41.08		Aug-21 99.36	112.71
Sep-20	195,756	\$ 46.66	\$ 45.40		Sep-21 74.88	75.81
Oct-20	216,986	\$ 59.74	\$ 45.47		Q3 2021 \$ 87.04	\$ 95.02
Nov-20	181,145	\$ 40.43	\$ 44.27		Q4 2021 54.13	54.84
Dec-20	194,203	\$ 42.06	\$ 44.17		Q1 2022 49.54	52.80
Jan-21	190,971	\$ 35.05	\$ 47.79		bal2021 \$ 59.33	\$ 67.11
Feb-21	167,671	\$ 63.86	\$ 46.94		CY2022 48.69	52.37
Mar-21	181,260	\$ 34.53	\$ 46.66		CY2023 42.19	46.45
Apr-21	171,421	\$ 36.69	\$ 45.04		CY2024 40.18	41.69
May-21					CY2025 39.15	40.43
Jun-21					CY2026 38.53	39.62

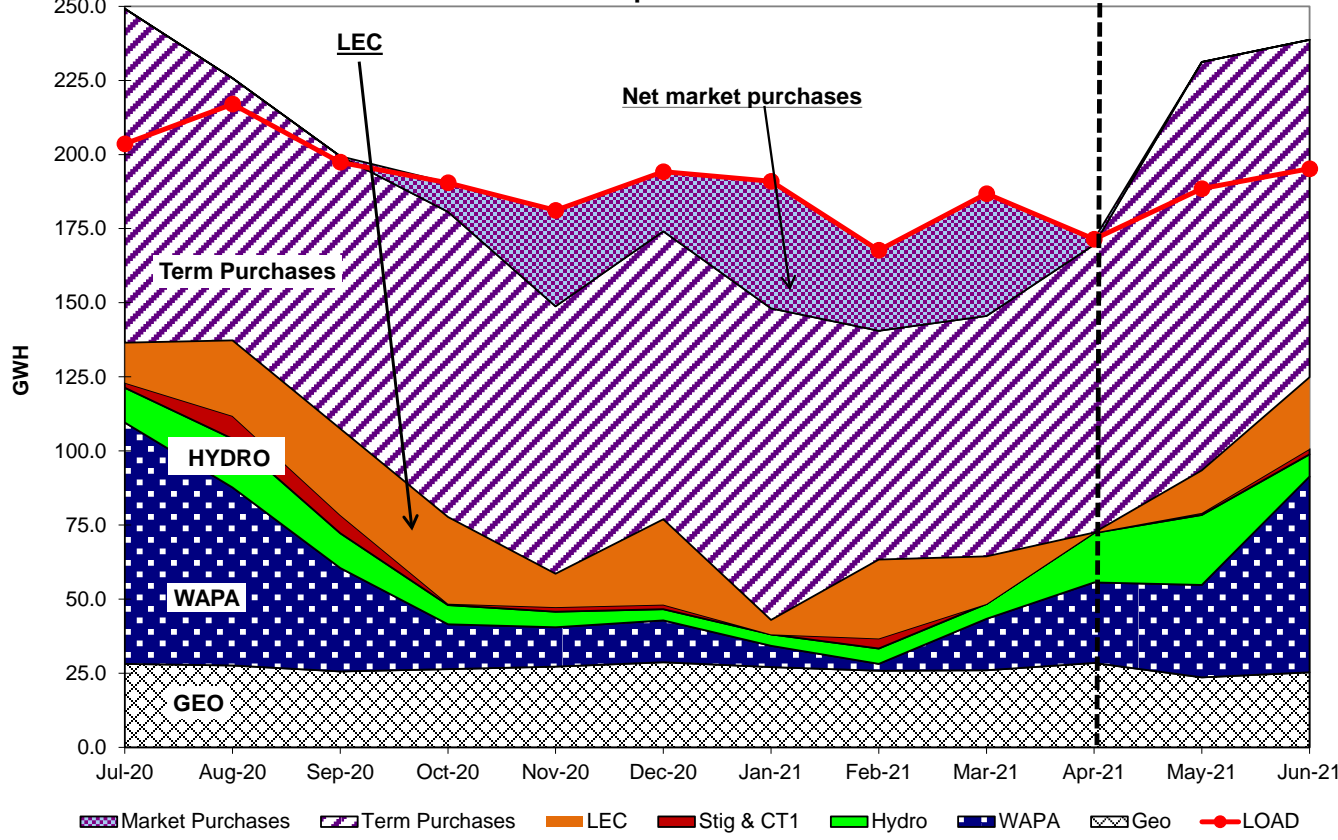
NOTES TO SUMMARY TABLE:

Peak and Energy Summary:
 * Monthly generation summary of Coincidental Peak (hour in which pool demand peaked), total MWh for the month, and pre-month forecasted values for report period.
 * Generation totals are for POOL SHARE of the projects.
 * Hydro totals include Collierville and Spicer generation.

Estimated Production Costs:
 * Fixed project costs not included except for WAPA, where total month's project costs are used to calculate the average unit cost.
 * STIG and CT costs include forward natural gas and basis hedge transactions.
 * STIG & CT costs reflect \$2.60 and \$1.62/MWh variable O&M costs per 6-12-06 GSCA.

Cost of Serving Demand:
 Compares price of meeting total monthly demand with (1) Hourly pool market clearing price; (2) Variable cost of pool gen. Pool Gen is sum of estimated costs divided by sum of generation

NCPA POOL RESOURCES
FY-2021: Jul20 - Apr21 Actual - bal. Forecast



Industry Restructuring, Contracts and Interconnection Affairs

Resource Adequacy Compliance Filings

- NCPA made the following Resource Adequacy compliance filings with the CAISO for the compliance period of July 2021:
 - Monthly System Resource Adequacy Demonstration (filed May 17, 2021)
 - Monthly Supply Plan (filed May 17, 2021)

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:

Energy Storage Enhancements (ESE)

- As CAISO integrates GWs of battery capacity into its grid, CAISO and battery operators are encountering challenges with developing bidding strategies that optimize the resources in Day Ahead and Real Time Markets and maintain availability in critical net peak hours. As part of the Market Enhancements for Summer 2021 Needs, CAISO imposed a contentious Minimum State of Charge requirement for Resource Adequacy (RA) batteries that CAISO will enforce during periods of “Residual Unit Commitment (RUC) under-generation feasibility” for two years. The primary goal of ESE is to develop a permanent replacement for the MSOC requirement once it expires. CAISO explains that the main challenge is CAISO developed its current markets around gas-fired resources that are available 24X7 and the Real Time Market Multiple Interval Optimization (MIO) can only look out 65 minutes, which results in exhausting the batteries prior to the high value net peak hours. CAISO explained that expanding the MIO is technologically infeasible and the only current large-scale battery operator expressed concerns that, even if it was feasible, that it would be too inaccurate and could exacerbate the problem. CAISO and battery operators are proposing new products and other financial incentives to address these issues such as:
 - Scarcity pricing
 - Apply prices to existing MSOC tool
 - Energy shift product
 - Biddable state of charge product
 - Variable charging rates
 - Exceptional dispatch enhancements including payment for maintaining MSOCNCPA has concerns that all these solutions could be expensive for ratepayers and even unnecessary and is in the process of drafting comments.

Market Enhancements for Summer 2021 Needs Initiative

- This continues to be the focus of CAISO efforts. The initiative is rapidly evolving and has been fast tracked for March 2021 Board of Governors’ approval. The Board approved the following proposals on March 24th and they will be activated on June 1, 2021:
 - Provide imports with make-whole payments under specified tight supply conditions if settlement at ISO market prices does not cover the energy bid price. This change will strengthen incentives to offer imports to the real-time market during tight supply conditions by eliminating the risk a supplier could be paid less than its bid price.
 - Price energy based on the market’s energy bid cap when the ISO is arming load to meet the ISO balancing authority area’s contingency reserve

requirement. This change will price energy more appropriately under tight supply conditions, which will incentivize suppliers to offer supply during such conditions.

- Allow market participants to specify whether a reliability demand response resource is eligible to be dispatched in hourly blocks, fifteen-minute intervals, or five-minute intervals in order to reduce the need for ISO operators to dispatch such resources manually, better allow the market to reflect the energy bid price of reliability demand response resources, and to improve market incentives during tight supply conditions.
- Remove a cap on behind-the-meter expansions and allow the ISO to temporarily award deliverability to new resources. These changes will expedite bringing more supply on-line by summer 2021.
- CAISO finalized scheduling priorities despite controversy around “wheel through” priorities and potential conflicts with RA imports. CAISO will provide wheel through transactions with the same priorities as internal load and non-RA exports but the prices will be based at the caps and could potentially be very expensive.

Extended Day-Ahead Market

- This initiative has been put on hold pending Day Ahead Market Enhancements initiative development.
- Bundle 1 consists of Resource Sufficiency Evaluations (RSE), Congestion and Transfer revenue allocation, and Transmission cost allocation.
- RSE is relatively uncontroversial and is similar in concept to ISO/CPUC RA program in that it is intended to ensure that EDAM participants have sufficient capacity, transmission, flexibility, and reserves to serve own loads and prevent leaning on other participants. RSE is currently active in EIM. Congestion and Transfer revenue allocations relatively uncontroversial as well. Congestion is intra-BAA and allocated to load that pays for transmission. Transfers occur inter-BAA and will be allocated to transmission owners. The controversial topic is transmission cost allocation. CAISO proposes to declare most transmission costs as sunk and only apply usage fee to incremental exports and EIM wheeling transfers. NCPA and others are concerned that those paying for transmission will not be fairly compensated.
- 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 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.

Resource Adequacy Enhancements

- Phase 1 implementation begins June 2021 with planned outage enhancements including substitution requirements for all RA outages and removal of substitution exemption for planned transmission induced generator outages.
- Phase 2A draft final proposal and Phase 2B seventh revised straw proposal will be published in April 2021.
- Phase 1 will include planned outage process enhancements, RA Import requirements, operationalizing storage, and backstop capacity procurement focused on CPM for local energy sufficiency. The planned outage process enhancements are scheduled to become effective June 2021 while the others are slated to go live in time for the 2022 RA year (Jan. 2022). The primary outage process enhancement is requiring generators to submit substitution up front for all planned RA outages

shortly after month ahead submittals. CAISO rejected NCPA's response to keep status quo whereby substitution is only required after a study produces an assignment. RA Import enhancements focus on determining the source of an RA import. Western is sufficiently covered under the new definition of resource specific since it includes a "system of resources" such as CVP.

- Phase 2 includes unforced capacity evaluations, determining system RA requirements, system RA showings and sufficiency testing, individual assessments, must offer obligations and bid insertion modifications, UCAP for local studies, backstop capacity procurement, and further planned outage process enhancements including implementation of a substitute capacity pool. Issues with this phase include counting rules being taken from the LRA and handed to the CPUC or other LRAs. However, CAISO is maintaining MSS exemptions to bid insertion and must offer obligations.

Day-Ahead Market Enhancements

- This initiative has been delayed due to the Summer 2021 Readiness Initiative taking priority.
- CAISO delayed publication of next straw proposal and announced that it will propose enhancements to RUC. NCPA seeking clarity for if new Reliability Capacity product remains.
- CAISO responded to NCPA's proposed redlines regarding Load Following Metered Sub-system treatment but we will need to see how they fit in with the next proposal.
 - Rejected language exempting LFMSS from reliability cost allocations
 - Accepted IRP Tier 1 proposal to base cost on LFMSS net portfolio deviations
 - Rejected IRP Tier 2 proposal to base cost on LFMSS net portfolio deviations and countered by proposing to base cost on net metered demand
 - Rejected NCPA tariff redlines.
- This initiative will explore new Day-Ahead products that will address ramping needs between intervals and uncertainty that can occur between the Day-Ahead and real-time markets.
- CAISO reviewed the need for new products along with data supporting uncertainty concerns:
 - Uncertainty between Day-Ahead and real-time market has increased from 2017 to 2019 and CAISO operators are addressing this development with out of market actions which disrupts market efficiency
 - Historically, generators had higher certainty to know if they would be scheduled in real-time
 - Due to uncertainty and changing resource fleet, commitment decisions are no longer necessarily known
 - Gas, hydro, storage, and imports need to cover costs to be available for dispatch in real-time – this will be accomplished with imbalance reserves
- 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)
 - NCPA has requested CAISO to allocate LF-MSS costs similar Flexible Ramping Product cost allocations.

- Addition of Up and Down Reliability Capacity in RUC process used to address gaps between bid in demand and forecast demand. NCPA is advocating to retain right to opt out of RUC.
- Implementation date is to be determined.

Transmission Access Charge Structure Enhancements

- CAISO has pushed the initiative back to Q4 2022 in the latest Policy Roadmap and Annual Plan. NCPA is drafting comments to request that it be brought back into 2021.
- Initiative is currently on hold pending developments from EDAM initiative.
- This initiative considers changes to the CAISO's current volumetric Transmission Access Charge (TAC) structure for recovering participating transmission owners' costs of owning, operating and maintaining transmission facilities under CAISO operational control. The CAISO will consider stakeholder input on the initiative scope, which will include possible changes to reflect the benefits of distributed resources in reducing future transmission needs.
- CAISO's draft final proposal includes a hybrid billing determinant consisting of volumetric and peak demand functions at an approximately 50/50 split 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 2021 and will be implemented at a to be determined point thereafter. 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.

Western

Western Base Resource Tracking (NCPA Pool)

Western Base Resource Tracking - NCPA Pool							
	Actual			Costs & Rates			
	BR Forecast ¹ (MWh)	BR Delivered (MWh)	Difference (MWh)	Base Resource & Restoration Fund (\$)	Monthly Cost of BR ² (\$/MWh)	CAISO LMP Differential ³ (\$/MWh)	12-Mo Rolling Avg. Cost of BR ⁴ (\$/MWh)
Jul-20	83,801	81,392	(2,409)	\$1,825,459	\$ 22.43	\$ 0.13	\$ 27.37
Aug-20	61,985	59,998	(1,987)	\$1,826,020	\$ 30.43	\$ (0.23)	\$ 27.68
Sep-20	41,023	41,391	368	\$1,811,655	\$ 43.77	\$ 0.60	\$ 27.62
Oct-20	30,317	22,596	(7,721)	\$909,162	\$ 40.24	\$ 11.76	\$ 29.62
Nov-20	14,598	13,280	(1,318)	\$909,162	\$ 68.46	\$ 0.10	\$ 30.44
Dec-20	13,128	14,102	974	\$909,162	\$ 64.47	\$ 0.79	\$ 31.48
Jan-21	6,278	7,174	896	\$909,162	\$ 126.73	\$ 1.02	\$ 32.15
Feb-21	16,372	2,262	(14,110)	\$909,162	\$ 401.93	\$ (0.00)	\$ 33.53
Mar-21	26,497	16,106	(10,391)	\$909,162	\$ 56.45	\$ 0.33	\$ 34.70
Apr-21	41,629	27,179	(14,450)	\$1,943,287	\$ 71.50	\$ 0.04	\$ 37.30
May-21	74,036	-	(74,036)	\$1,943,287	\$ 26.25	\$ -	\$ 38.10
Jun-21	93,177	-	(93,177)	\$1,943,287	\$ 20.86	\$ -	\$ 38.06
1/ As forecasted in NCPA 20/21 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 27,179 MWh Base Resource (BR) energy in April 2021. This includes 940 MWh of Displacement Energy for an estimated savings of \$5,600 or about \$5.96/MWh.
- Pool Members' cumulative net MEEA savings for NCPA FY 2021 is about \$254,800 and Displacement savings at approximately \$727,130, for July 2020 through April 2021.

Integrated Resource Plan (IRP)

- Pursuant to the Western Base Resource Contract, NCPA, on behalf of the assignment members, is required to file a structured Integrated Resource Plan with Western every five (5) calendar years, and is subsequently required to file an update to the IRP each year. NCPA is on track to file the 2021 annual update report prior to the July 1st, 2021 deadline.

Interconnection Affairs

PG&E Update

TO-18 Rate Case

- On October 15, 2020 FERC issued a ruling on the PG&E Transmission Owner Tariff 18 Filing.
- The ruling came over four years after the initial filing and over two years from an initial favorable decision back in 2018.
- The ruling is not the end of TO-18 as FERC has requested further testimony and briefs on ROE matters. The initial decision reduced ROE from 10.40% to 9.13%.
- Once ROE is decided, TO-18 rates will be effective for a 12-month period from March 1, 2017 – Feb 28, 2018.
- TO-19, which was settled at a TRR of 98.85% of TO-18 will be effective for a 14-month period from March 1, 2018 – April 30, 2019.
- Recent Developments: PG&E has offered to settle the entire case (ROE and non-ROE Issues) on a “black box” basis. This will result in immediate refunds for both TO-18 and 19.
- Joint Intervenors determined the terms of PG&E’s settlement offer are not a productive starting point for negotiations. ROE is still outstanding.

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.
- NCPA and PG&E operating procedure is complete.
- Use of the Intertie Switch is still pending CPUC approval. Interim solution if necessary will be to use the temporary jumpers as in Jan of 2020.

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.
- In Feb 2021, PG&E came across an opportunity to engage in mediation with CDWR to address the cost of removal issue. NCPA has agreed to join the mediation with PG&E.

Transmission Planning BPM Updated Modeling Data Submittal

- CAISO is requiring Generators to submit updated modeling data to ensure CAISO has current and accurate system information.
- NCPA has submitted updated data and power flow models for Hydro, all Geo, and all CT units. With the exception of New Spicer Meadows, all NCPA units are deemed compliant by the ISO. New Spicer modeling data is due the first quarter of 2022.

Stakeholder Transmission Asset Review (STAR) Process

- NCPA’s objective in PG&E’s Stakeholder Transmission Asset Review process is to participate and influence lower cost alternatives where possible, identify projects which may benefit members, and introduce Member Specific Projects.
- On December 1, 2020, PG&E submitted a 10-year capital plan to all stakeholders. The list included 1,596 total projects (equal to or greater than \$1M) and over 500 supporting documents (Project Authorizations/Business Cases).
- NCPA drafted stakeholder comments with more emphasis on projects which are in planning (i.e. not in construction phase), projects which fall under the “work requested by others” category, projects which are on hold due to CAISO or CPUC action, and projects which might be related to non-CAISO controlled facilities.
- PG&E replied to stakeholders’ comments and held a stakeholder meeting on March 4, 2021.
- Next step: Stakeholders may ask follow-up questions to PG&E responses and March 4th presentations. PG&E will submit updated 10-year capital plan again on June 1, 2021.

2020-2021 Transmission Plan - PG&E Area Wildfire Impact Assessment

Multiple PSPS events were carried out in 2019 and 2020. The worst case was on October 26, 2019 where customers in 36 counties were de-energized. The CASIO as part of the 2020-2021 TPP conducted studies to assess impacts of various PSPS scenarios in the PG&E area. Using the Cal Fire and CPUC Fire Threat Map, the CAISO identified transmission lines in tier 2 and tier 3 Fire Threat Zones:

Planning Area	60kV		115kV		230kV		500kV		Total
	Tier 2	Tier 3	Tier 2	Tier 3	Tier 2	Tier 3	Tier 2	Tier 3	
Greater Bay Area	4	6	11	22	9	21	1	1	75
North Coast/North Bay	17	14	7	15	4	18	0	0	75
Central Coast/Los Padres	7	3	17	10	2	9	0	2	50
Greater Fresno Area	5	3	3	1	4	0	0	0	16
Central Valley	22	14	18	19	11	3	0	0	87
Humboldt	6	2	2	1	0	0	0	0	11
North Valley	19	15	4	10	14	9	0	0	71
Total	80	57	62	78	44	60	1	3	385

Next, the CAISO considered the following five study scenarios and ultimately choose Scenario 4 as the most realistic:

Scenario Number	Scenario Name	Scenario Description
1	All T 2&3	All tier 2 & tier 3 lines de-energized
2	All T3	All tier 3 lines de-energized
3	10-26 PSPS	Lines de-energized in October 26 2019 PSPS event
4	10-26 PSPS-WFM	Lines de-energized based upon October 26 2019 PSPS event conditions with PG&E's wildfire mitigations
5	PSPS-HWC-All	Based upon potential PSPS events corresponding to historical weather conditions, de-energize all lines

Lines with the most amount of direct load reduction were identified as critical transmission lines during the study period and listed by PG&E planning area:

- Greater Bay Area (SVP, City of Alameda, City of Palo Alto, Port)
 - Monta Vista-Jefferson #1 230 kV line
 - Monta Vista-Jefferson #2 230 kV line and
 - Monta Vista-Burns 60 kV line
- North Coast & North Bay Area (City of Healdsburg, City of Ukiah)
 - Fulton-Pueblo 115 kV line
 - Eagle Rock-Fulton-Silverado 115 kV line
 - Sonoma-Pueblo 115 kV line
 - Windsor-Fitch Mountain 60 kV line and
 - Mendocino-Willits-Fort Bragg 60 kV line
- North Valley Area (Plumas Sierra)
 - Centerville-Table Mtn-Oroville 60 kV line
- Central Valley Area (City of Lodi, City of Biggs, City of Gridley)
 - El Dorado-Missouri Flat #1 115 kV line
 - El Dorado-Missouri Flat #2 115 kV line
 - West Point-Valley Springs 60 kV line
 - Drum-Rio Oso #1 115 kV line and
 - Drum-Rio Oso #2 115 kV line
- Central Coast & Los Padres Area (City of Lompoc)
 - None Identified

In conclusion, if critical transmission lines are excluded from PSPS Scope, the exclusion will have a significant reduction in direct load drop during a PSPS event. The ISO will coordinate with PG&E to evaluate mitigation options within PG&E's wildfire mitigation plan to be able to exclude critical transmission lines from future PSPS events.

Debt and Financial Management

- At the April Fed meeting, the Federal Reserve kept its money policy in place despite an economy that it acknowledged is accelerating. But as expected, they decided to keep short-term interest rates anchored near zero as it buys at least \$120 billion of bonds each month.
- Despite noting the economic strength as well as inflation that is on the rise, if just temporarily, the policymaking Federal Open Market Committee unanimously decided to make no changes in its approach and gave no indications that things will change anytime soon. Fed Chairman Jerome Powell said the recovery is “uneven and far from complete.”
- At the May Finance Committee meeting, PFM provided a report stating the Fed funds futures doesn’t expect any rate actions through June 2021 and very little upward movement is expected through the end of the year. This continues to be a positive sign as the Agency nears the timing of beginning the process to refund the 2012 Hydroelectric bonds. Indications continue to reflect NPV savings north of 20%.

Schedule Coordination Goals

Software Development

- New applications and enhancements under development
 - LEC MSG Software Suite, including the updated Prescheduler and MIDS apps, deployed in the test environment to participate in the CAISO Market Sim end-end testing. Roll out in production slated for end of May 2021.
 - ABISS (Accounting, Budget, Information and Settlements System) is under development. It will play a major piece to the new Accounting Reporting and Budgeting solution currently under evaluation. ABISS will combine most, if not all, relevant data sources coming from internal databases as well as from the new Budgeting data source.
 - Renewable Portfolio Standard Reporting app to be added as an enhancement to the Risk Management app. The report will provide members an automated RPS Balance Sheet of their RECs in a Compliance Period. Production release slated for June 2021
- Staff are also working with Accounting and a software consultant to enhance the financial reporting. Software solutions evaluation is ongoing.
- Electronic signature solution, Adobe Sign, was rolled out to Generation Services the last couple of months. IS continues to extend the capability to the rest of the agency.

Network

- The IS SCADA team continues to work with both CT staff and Development to prepare for an MSG roll out of the LEC plant. Initial point testing between MSG code and Dispatch has been successful with minor adjustments needed. Further point testing between Dispatch and the LEC RIG is scheduled for mid-April during the plant outage. Currently targeting an end of May go-live date.
- IS has begun drafting additional cyber security procedures in preparation for our Dispatch HQ and DRC Control Centers to become NERC CIP Medium some time in 2022. Technical software to help meet technical compliance with the CIP-007 and CIP-010 standards are being evaluated and anticipated to be purchased by end of FY 21.

- IS has finalized the Phone System Replacement requirements and is preparing an RFP to be sent out to a number of vendors for response. Staff anticipates having responses by mid-May with the selected vendor by end of June, in preparation of project start in FY 22.
- IS continues working with EBCE and technical contractors to further integration efforts with Altamont Wind. Further point testing between NCPA Dispatch and both Frick and Dyer have been completed successfully. SCADA has developed screens and is working to historize the data in preparation for a late spring early summer integration.

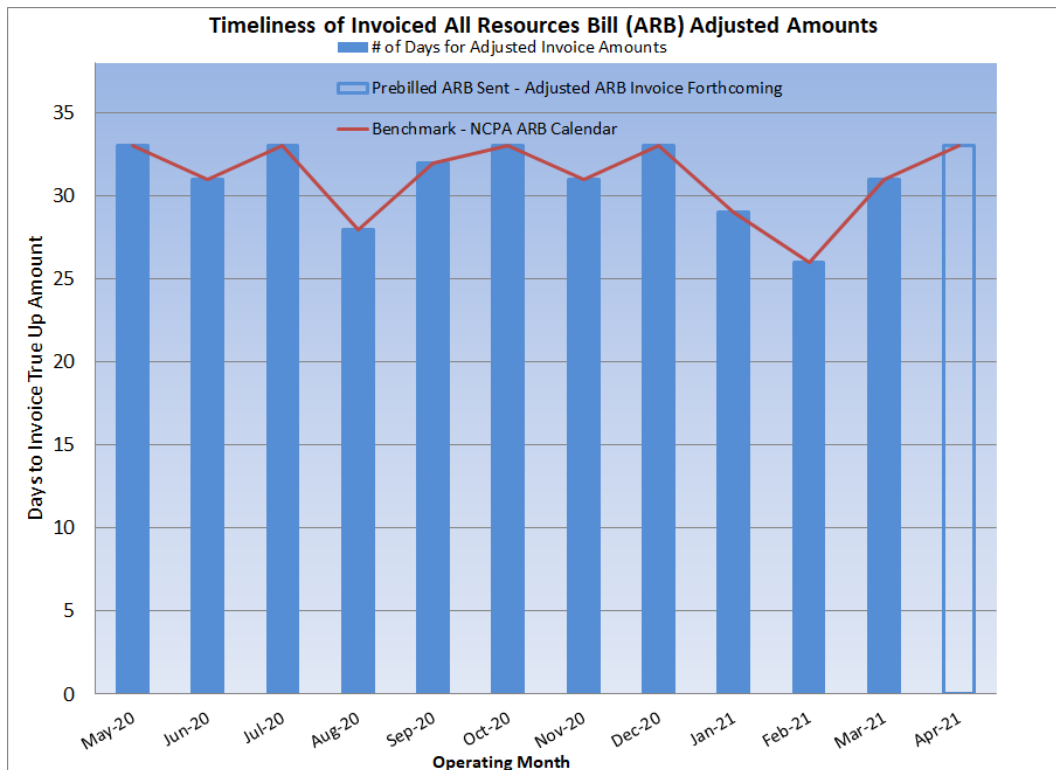
NCPA Bills & Settlements

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 2021 NCPA All Resources Bill (ARB) monthly invoice sent to members on March 23, 2021 contains:

- April 2021 monthly pre-billed budget/forecast amounts;
- February 2021 (1st Adjustment) NCPA Project and CAISO Initial settlement true-ups;
- January 2021 (2nd Adjustment) NCPA Project settlement true-up and T+12 business day recalculated CAISO settlement true-up allocations;
- November 2020 (3rd Adjustment) T+55 business day recalculated CAISO settlement true-up allocations and NCPA Projects true-up;
- May 2020 (4th Adjustment) T+9 month recalculated CAISO settlement true-up allocations;
- July 2019 (5th Adjustment) T+18 month recalculated CAISO settlement true-up allocations;
- April 2018 (6th Adjustment) T+33 month recalculated CAISO settlement true-up;
- January 2018 (7th Adjustment) T+36 month CAISO settlement true-up;



Legislative & Regulatory

State Update

- NCPA has been engaged and continues to participate in State Budget discussions to secure funding to support utility arrearages associated with COVID-19. The Governor and the Senate have both introduced proposals related to this issue. The State Budget must be finalized by June 15, 2021, with policy implementation discussions continuing thereafter.
- NCPA has been negotiating amendments and developing positions on several energy-related bills in the State Legislature. Major legislative issues include efforts to make changes to renewable energy planning and procurement requirements, support utility transportation decarbonization policies and programs, advance green hydrogen, and efforts related to wildfire mitigation.

Customer Programs Update

- NCPA released an RFP on April 22, 2021, to aid Members in the administration of any customer or rate assistance programs that require income verification. The RFP was issued in response to Member requests, in light of an increasing emphasis on equity-focused programs, and continued need for programs providing COVID support and relief. The resulting enabling agreements will be administered through the Support Services Program for Member use. Responses are due by May 27, 2021, and we expect that contracts should be in place by September 2021.

Human Resources

Hires:

Trevor Mertell joined NCPA on April 26, 2021 as a Combustion Turbine Specialist III. Trevor joins us from Calpine where he has been an Operating Technician III since 2019. While Trevor was at Calpine, he operated a 578 megawatt 2x1 combined cycle power plant. He also spent time operating combustion turbine cogeneration and peaker plants. Trevor previously served in the United States Navy as a Nuclear Machinist's Mate and received training through the Naval Nuclear Power Program. Trevor brings with him experience in the operation, maintenance, and repair of nuclear reactors, combustion turbines, steam turbines, and their subsystem.

Intern Hires:

Thomas Wimple joined the Hydroelectric Operations team on May 17, 2021 as a Student Assistant II.

Promotions/Position Changes:

Dan Pierce was promoted to System Dispatcher at the NCPA Dispatch Center on April 25, 2021. Dan started at NCPA in 2018 as a Schedule Coordinator III and has recently become dual-qualified on both the dispatch and SC desks. Previously, Dan spent three years as a Senior Real-time Asset Manager for PG&E, four years as a Lead System Operator at NaturEner USA & Canada, and one year as a Solar Analyst and Design Intern at Stellar Energy. Dan holds a BS from Sonoma State University in Energy Management and is a NERC Certified System Operator in Reliability.

Separations:

William Cude, Operator Technician Lead, retired from our Geothermal Facilities on May 19, 2021 after over 38 years of service with NCPA.