

**Power & Water Resources Pooling  
Authority**

# Information Packet

**Wednesday, March 1, 2023**

- 1. Treasurer's Report.**
- 2. Extract of the Operations Report.**
- 3. GM Comments.**

## **Power & Water Resources Pooling Authority**

2. Treasurer's Report for Month Ending January 31, 2023.

POWER AND WATER RESOURCES POOLING AUTHORITY  
**CASH ACTIVITY AND TREASURER'S REPORT**  
 MONTH ENDING JANUARY 31, 2023

**CASH ACTIVITY:**

BALANCE DECEMBER 31, 2022	\$	15,636,434.53
Increases:		
Power Billing Invoices	\$ 2,547,174.24	
State Of California - Demand Side Grid Support Program	687,881.27	
APX - Astoria Solar	222,059.00	
LAIF -Interest 2nd, 3rd and 4th quarter 2022	132,523.61	
TCB - Monthly Interest	1,666.82	
		3,591,304.94
Decreases:		
CAISO	\$ 2,611,680.48	
WAPA - Base Resource Power December 2022	947,475.09	
NCPA - LEC December 2022 and GHG Allowances	419,067.00	
WAPA O&M	288,879.00	
Canadian Solar - Slate Solar - November 2022 & BESS adjustments	265,778.63	
MRP San Joaquin Energy - Nov and Dec 2022	257,250.00	
Canadian Solar - Astoria Solar - December 2022	79,063.57	
Robertson-Bryan, Inc	68,157.91	
WAPA - Restoration December 2022	55,598.34	
Trimark - Cell, Meter Reading and TM	48,678.27	
Cameron-Daniel, P.C.	38,379.46	
California Dept of Tax and Fees	28,681.00	
Aces - January 2023	25,000.00	
Holland & Knight - Legal Fees WDT3	11,306.82	
Arvin-Edison Water Storage District-Treasurer	4,899.63	
Michael McCarty Law Office, PLLC	3,000.00	
GL Renewables - November 2022	2,421.65	
PG&E - GCID, RD 108, SCVWD, Zone 7	1,805.51	
White Pines Solar Santa Clara WD - December 2022	1,164.00	
Bank fees	500.00	
Braun Blaising & Wynne	426.96	
Advanced Data Storage	44.50	
		5,159,257.82
BALANCE JANUARY 31, 2023	\$	<b>14,068,481.65</b>

**TREASURERS REPORT:**

Operating Account:		
Tri Counties Bank - General Operating/Sweep Accounts #1031821 & #1031830	\$	866,011.51
Local Agency Investment Fund (LAIF) - Account # 90-39007, yield 2.425%		
Reserve Funds	\$ 3,750,096.64	
Cap & Trade Allowance Revenue	6,107,106.41	
Funds on Deposit	3,345,267.09	
Total LAIF		13,202,470.14
TOTAL PWRPA OPERATING FUNDS - JANUARY 31, 2023	\$	<b>14,068,481.65</b>
Public Purpose Program (P-3) Tri Counties Bank Account #1031856		3,040,685.02
TOTAL FUNDS ON DEPOSIT WITH PWRPA JANUARY 31, 2023	\$	<b>17,109,166.67</b>
CAISO Collateral Deposit Account		4,708,261.54
Western Area Power Administration - PWRPA Trust Account		1,000.00
TOTAL FUNDS - PWRPA & OTHER AGENCIES - JANUARY 31, 2023	\$	<b>21,818,428.21</b>

**Treasurer's Notes:**

All investments are placed in accordance with PWRPA's Statement of Investment Policy and Guidelines. The Treasurer's Report is presented on a cash basis, effective yields are based on most recent published information. PWRPA has sufficient cash flow to meet its obligations next month. Included in the Operating Funds above is the Board approved \$10,000,000 Reserve and Funds on Deposit from the following Participants:

Participant	Amount	Participant	Amount
Banta Carbona	\$ 22,476.04	Santa Clara	570,943.29
Cawelo	851,845.46	Sonoma	753,745.63
James	43,291.60	West Stan	282,746.34
Glen-Colusa ID	118,183.47	Westlands	573,595.81
RD108	42,539.61	West Side ID	57,887.44
		Zone 7	28,012.40
		<b>Total</b>	<b>\$3,345,267.09</b>

*Power and Water Resources Pooling Authority*  
**P-3 Remaining Funds By Year**  
*as of January 31, 2023*

<b>Member Agency</b>	<b>2018</b> (a)	<b>2019</b> (b)	<b>2020</b> (c)	<b>2021</b> (d)	<b>2022</b> (e)	<b>Total Available P-3 Funds</b> (f)	<b>Expenditures Total to Date</b> (g)	<b>January-23</b> (h)
Arvin-Edison WSD	\$0.00	\$0.00	\$0.00	\$13,418.71	\$543,620.68	<b>\$557,039.39</b>	\$4,967,215.16	\$0.00
Banta Carbona ID	0.00	0.00	28,418.11	49,489.90	65,427.64	<b>143,335.65</b>	404,708.20	0.00
Cawelo WD	0.00	49,395.58	37,702.35	33,863.10	47,151.51	<b>168,112.54</b>	802,026.78	29,410.56
Glenn-Colusa ID	0.00	0.00	23,300.11	32,132.77	16,991.19	<b>72,424.07</b>	348,863.79	0.00
James ID	0.00	8,070.92	10,457.51	15,685.23	23,010.13	<b>57,223.79</b>	122,899.04	0.00
Lower Tule ID	0.00	0.00	0.00	0.00	29,916.40	<b>29,916.40</b>	331,806.44	109,569.31
Princeton ID	0.00	7,595.11	9,341.59	8,671.24	5,519.48	<b>31,127.42</b>	146,848.67	0.00
Santa Clara Valley WD	0.00	0.00	0.00	16,885.21	88,242.53	<b>105,127.74</b>	638,166.45	0.00
Sonoma County WA	0.00	84,011.90	99,654.97	109,040.76	145,540.92	<b>438,248.55</b>	1,506,210.21	30,352.25
West Stanislaus ID	0.00	0.00	0.00	0.00	61,317.22	<b>61,317.22</b>	496,284.30	139,194.86
Westlands WD (North & South)	0.00	0.00	0.00	102,451.51	1,093,235.26	<b>1,195,686.77</b>	5,531,125.34	0.00
West Side ID	0.00	5,539.13	8,928.49	9,001.39	14,164.94	<b>37,633.95</b>	129,954.40	0.00
RD 108	0.00	24,126.08	17,667.76	16,362.76	12,723.85	<b>70,880.45</b>	185,239.74	15,000.00
Zone 7	0.00	0.00	9,318.79	25,493.12	37,692.11	<b>72,504.02</b>	71,833.02	0.00
Undesignated/Forfeited/Misc	107.06	0.00	0.00	0.00	0.00	<b>107.06</b>	35,133.04	0.00
<b>Total</b>	<b>\$107.06</b>	<b>\$178,738.72</b>	<b>\$244,789.68</b>	<b>\$432,495.70</b>	<b>\$2,184,553.86</b>	<b>\$3,040,685.02</b>	<b>\$15,718,314.58</b>	<b>\$323,526.98</b>
Exclusive access Date	12/31/22	08/04/23	08/03/24	08/02/25				

- (a) Three year exclusive access to these funds by agency began on 8/07/19 and ended 12/31/22 (ending date was adjusted due to Summer Reserve Policy)
- (b) Three year exclusive access to these funds by agency begins on 8/05/20 and ends 08/04/23
- (c) Three year exclusive access to these funds by agency begins on 8/04/21 and ends 08/03/24
- (d) Three year exclusive access to these funds by agency begins on 8/03/22 and ends 08/02/24
- (e) 2022 P-3 collected through January 2023
- (f) Total available P-3 Funds
- (g) Total P-3 expenditures since inception of program
- (h) P-3 expenditures January 2023

**Power and Water Resources Pooling Authority**  
 Cap and Trade Allowance Revenue  
 Pursuant to Resolution 13-04-05 and Resolution 21-11-14  
 As of January 31, 2023

District	Resolution 13-04-05		Resolution 21-11-14		Total Revenue	Expenditures	Balance
	Allocation	Revenue	2021	2022			
Arvin	37.478%	\$3,421,905.95	\$208,146.78	\$831,876.00	\$4,461,928.73	\$3,421,905.95	\$1,040,022.78
Banta Carbona	3.115%	284,413.18	33,717.30	132,634.85	450,765.33	0.00	450,765.33
Cawelo	8.447%	771,248.19	32,760.55	115,918.41	919,927.15	205,787.50	714,139.65
Glenn-Colusa	2.849%	260,126.21	23,174.67	86,307.16	369,608.04	369,608.04	0.00
James	0.798%	72,860.90	5,746.23	23,359.47	101,966.60	0.00	101,966.60
Lower Tule	1.005%	91,760.91	20,089.23	76,569.91	188,420.05	0.00	188,420.05
Princeton	1.334%	121,800.06	7,684.74	25,968.74	155,453.54	47,503.21	107,950.33
RD 108	1.368%	124,904.41	10,013.47	35,342.29	170,260.17	170,260.17	0.00
Santa Clara	4.853%	443,100.21	45,211.76	169,068.24	657,380.21	443,100.21	214,280.00
Sonoma	7.787%	710,987.29	71,470.54	275,734.34	1,058,192.17	196,000.00	862,192.17
Byron Bethany II	0.708%	64,643.51	5,278.35	20,240.47	90,162.33	90,162.33	0.00
West Stan	3.228%	294,730.57	31,345.36	119,698.69	445,774.62	150,789.15	294,985.47
Westlands	27.030%	2,467,957.68	202,357.42	796,569.54	3,466,884.64	1,390,020.55	2,076,864.09
Zone 7	0.000%	0.00	9,503.60	46,016.34	55,519.94	0.00	55,519.94
<b>Total</b>	<b>100.000%</b>	<b>\$9,130,439.07</b>	<b>\$706,500.00</b>	<b>\$2,755,304.45</b>	<b>\$12,592,243.52</b>	<b>\$ 6,485,137.11</b>	<b>\$ 6,107,106.41</b>

(a) Transferred as a Payment to power cost to help meet RPS

(b) GCID \$65,084.88 in approved projects remaining revenue transferred as a payment to power cost to help meet RPS

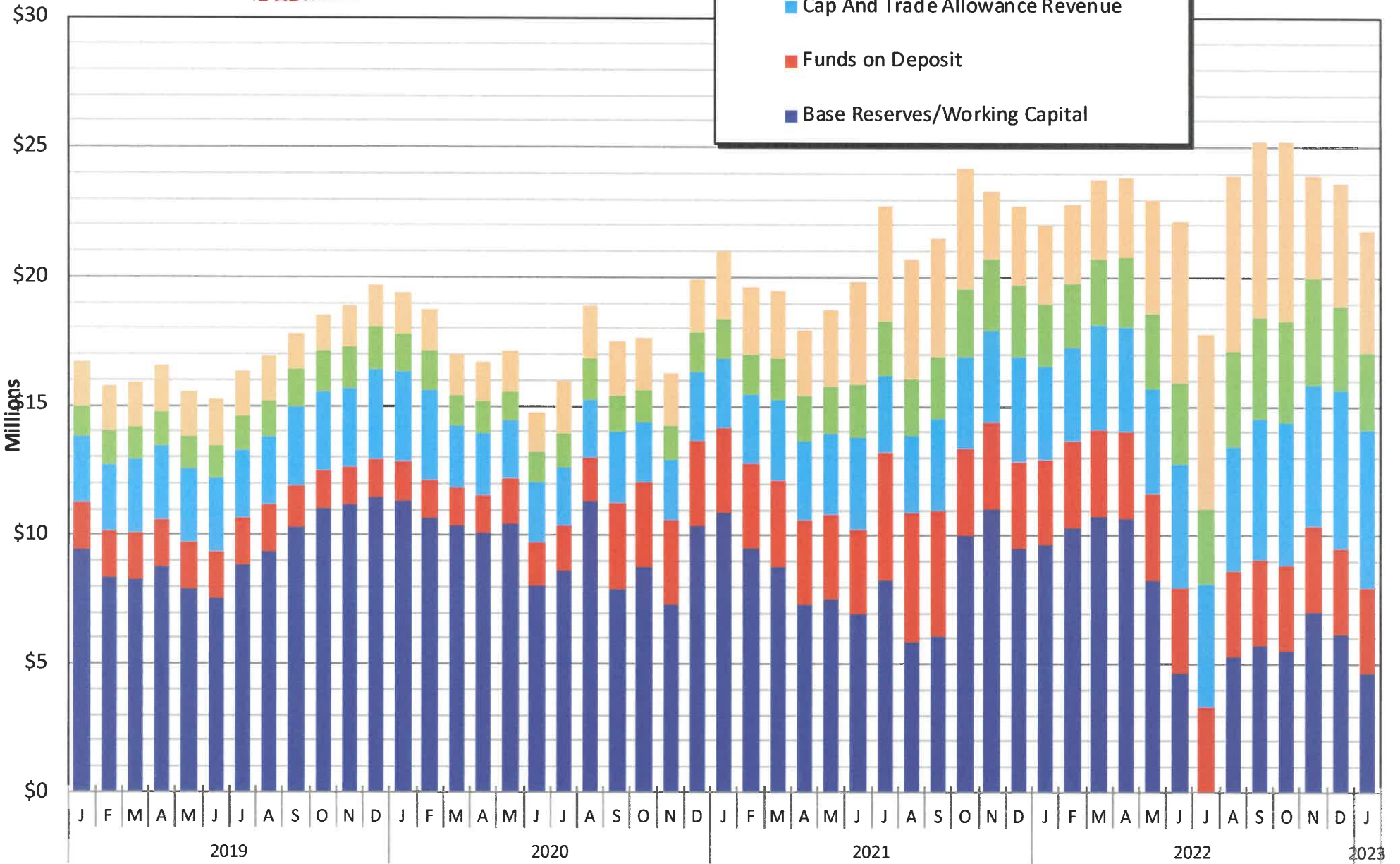
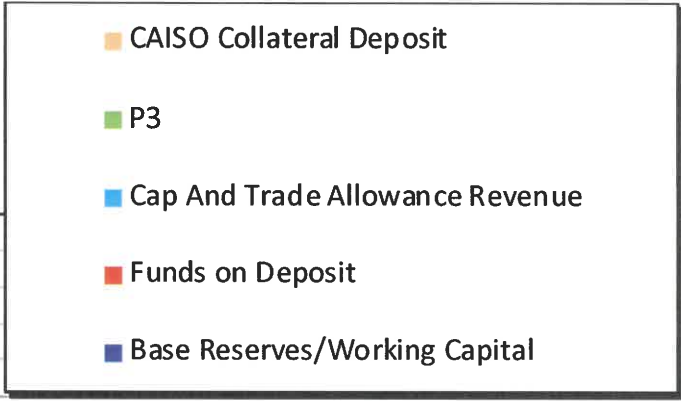
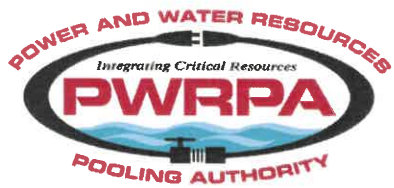
District	Exhibit B Allocation	
	2021	2022
Arvin	29.4617%	30.1918%
Banta Carbona	4.7724%	4.8138%
Cawelo	4.6370%	4.2071%
Glenn-Colusa	3.2802%	3.1324%
James	0.8133%	0.8478%
Lower Tule	2.8435%	2.7790%
Princeton	1.0877%	0.9425%
RD 108	1.4173%	1.2827%
Santa Clara	6.3994%	6.1361%
Sonoma	10.1161%	10.0074%
Byron Bethany II	0.7471%	0.7346%
West Stan	4.4367%	4.3443%
Westlands	28.6422%	28.9104%
Zone 7	1.3452%	1.6701%
<b>Total</b>	<b>100.0000%</b>	<b>100.0000%</b>

**Sale of Freely Allocated Allowances**

Year	March	June	September	December	Total
2012				\$ 216,935.00	\$ 216,935.00
2013	136,200.00			370,080.76	506,280.76
2014		379,500.00	184,000.00	192,511.00	756,011.00
2015	195,360.00	196,640.00	200,320.00	212,934.71	805,254.71
2016	212,158.18	89,530.09	249,317.05	296,303.48	847,308.80
2017	115,168.59	371,399.40	265,500.00	260,748.84	1,012,816.83
2018	262,980.00	263,700.00	258,408.50	264,250.60	1,049,339.10
2019	283,140.00		446,160.00	461,227.00	1,190,527.00
2020	321,660.00		500,400.00	415,783.87	1,237,843.87
2021	445,000.00	480,622.00	582,500.00	706,500.00	2,214,622.00
2022	583,000.00	827,304.45	675,000.00	670,000.00	2,755,304.45
				<b>Total</b>	<b>\$12,592,243.52</b>

Resolution 13-04-05	\$9,130,439.07
Resolution 21-11-14	3,461,804.45
	<u>\$12,592,243.52</u>

# SUMMARY TREASURER REPORT

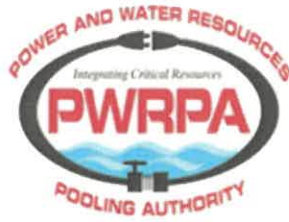


POWER & WATER RESOURCES POOLING AUTHORITY

WIRE TRANSFERS

January 1 - 31, 2023

Transaction Number	Beneficiary Name	Credit Amount	Value Date
164207	CAISO Market Clearing	\$456,169.84	1/3/2023
164473	Cameron-Daniel, P.C.	\$38,379.46	1/5/2023
164474	Holland & Knight	\$11,306.82	1/5/2023
164759	ACES Power Marketing	\$25,000.00	1/9/2023
164760	CAISO Market Clearing	\$650,566.27	1/9/2023
164763	MRP San Joaquin Energy	\$257,250.00	1/9/2023
165450	Pacific Gas and Electric	\$1,805.51	1/17/2023
165451	Slate 1 (Canadian Solar)	\$154,470.08	1/17/2023
165452	CAISO Market Clearing	\$809,483.33	1/17/2023
165453	WAPA O M	\$288,879.00	1/17/2023
165454	Western Area Power Administration	\$55,598.34	1/17/2023
165967	Garlock Energy, LLC	\$1,164.00	1/23/2023
165968	GL Renewables, LLC	\$2,421.65	1/23/2023
165969	Slate 1 (Canadian Solar)	\$111,308.55	1/23/2023
165970	CAISO Market Clearing	\$594,171.28	1/23/2023
165971	Northern California Power Agency	\$169,384.00	1/23/2023
166653	CAISO Market Clearing	\$85,328.05	1/30/2023
166654	Astoria 2 Operating	\$79,063.57	1/30/2023
166655	Western Area Power Administration	\$947,475.09	1/30/2023
166656	Northern California Power Agency	\$249,683.00	1/30/2023
166657	Trimark Associates, Inc.	\$48,678.27	1/30/2023
166658	CAISO Market Clearing	\$15,961.71	1/30/2023
<b>Total</b>		<b>5,053,547.82</b>	



POWER AND WATER RESOURCES POOLING AUTHORITY

**DISBURSEMENT LIST**

February 2023

Check #	Vendor-name	Payment-description	Check-amount
3332	Santa Clara Valley Water District	DSGS Program - CEC Reimbursement	\$ 20,035.13
3333	Westlands Water District	DSGS Program - CEC Reimbursement	217,901.03
3334	Zone 7 Water Agency	DSGS Program - CEC Reimbursement	78,885.45
3335	Arvin-Edison Water Storage District	DSGS Program - CEC Reimbursement	348,944.85
3336	Arvin-Edison Water Storage District	Cap & Trade	500,000.00
3337	Arvin-Edison Water Storage District	Approved P-3 Project	270,000.00
3338	Advanced Data Storage	Document Storage - February 2023	44.50
3339	Arvin-Edison Water Storage District	Treasurer's Duties	9,069.08
3340	Banta-Carbona Irrigation District	Board Meetings	1,028.48
3341	Braun Blaising & Wynne, P.C.	Legal Services - January 2023	356.08
3342	Johnston Farms	Rec's purchased	108.15
3343	Michael McCarty Law Office PLLC	Consultant	3,000.00
3344	Moore Farms	Rec's purchased	13.55
3345	Robertson Bryan Inc.	Consultant	65,878.91
		Sub-Total	<u>\$ 1,515,265.21</u>
<b>Wire Transfers:</b>			
Wire	Cameron-Daniel, P.C.	General Manager/General Council	\$ 36,997.50
Wire	Holland & Knight	FERC Wholesale Distribution Filing Legal Fees	385.00
		Total	<u><u>\$ 1,552,647.71</u></u>



## **Power & Water Resources Pooling Authority**

3. Extract from Operations Report reflecting January 2023.

**Power and Water Resources Pooling Authority**  
**March 1, 2023, Board Meeting**  
**Operations Manager Report**

**Operations Staff Overview**

1. March planned activity
  - a) Slate: data comms with MCG, invoice resolution, deemed energy protocol, transition to hybrid resource methods for ISO.
  - b) 2022 Generator Eval reports: enhance once Slate issues resolved.
  - c) Start prep for 2022 Reconciliation.
  - d) Net short tracking, load updates considering storms and water allocations.
2. February recap
  - a) Slate coord: data flows, deemed energy discussions, PV/BESS internal cost allocation.
  - b) Various coordination w/ Solar developers on Districts request
  - c) WAPA quarterly meetings and storage level tracking.

**January Operations Report:**

1. Pre-Reconciliation
  - a) Actual data for January – December 2022 estimates. We will start reporting on 2023 next month.
  - b) Does not include any DSGS revenue from CEC, or load cost changes.
  - c) Various Slate data still outstanding.

**Table 2: Revenue and Expense: January - December 2022**

Participant	Revenue		Expenses			Balance	Summary	
	Power Invoice	Power & Ops Costs	P3	Direct Consulting	Over/(Under) Funded	Total Costs	Composite Rate (¢/ kWh)	
Arvin-Edison	\$ 19,433,031	\$ 18,182,716	\$ 518,207	\$ (110,920)	\$ 843,028	\$ 18,590,003	\$ 15.78	
Banta-Carbona	\$ 2,361,134	\$ 2,468,992	\$ 70,366	\$ (46,000)	\$ (132,224)	\$ 2,493,358	\$ 12.33	
Cawelo	\$ 1,801,836	\$ 1,565,899	\$ 44,628	\$ (69,575)	\$ 260,884	\$ 1,540,952	\$ 15.45	
Glenn-Colusa	\$ 613,173	\$ 595,508	\$ 16,972	\$ (8,625)	\$ 9,319	\$ 603,854	\$ 20.81	
James	\$ 830,383	\$ 756,393	\$ 21,557	\$ (2,875)	\$ 55,308	\$ 775,075	\$ 15.44	
Lower Tule	\$ 1,274,594	\$ 1,290,450	\$ 36,778	\$ -	\$ (52,633)	\$ 1,327,227	\$ 19.59	
Princeton	\$ 199,186	\$ 143,236	\$ 4,082	\$ (2,875)	\$ 54,743	\$ 144,443	\$ 152.88	
RD108	\$ 459,175	\$ 431,639	\$ 12,302	\$ (4,469)	\$ 19,704	\$ 439,471	\$ 24.70	
Santa Clara	\$ 3,449,808	\$ 3,484,587	\$ 99,311	\$ (5,770)	\$ (128,319)	\$ 3,578,127	\$ 16.79	
Sonoma	\$ 5,252,240	\$ 5,287,365	\$ 150,690	\$ (10,939)	\$ (174,876)	\$ 5,427,116	\$ 15.65	
West Stan	\$ 2,489,891	\$ 2,324,046	\$ 66,235	\$ (34,500)	\$ 134,110	\$ 2,355,781	\$ 11.61	
Westlands	\$ 39,967,808	\$ 38,796,456	\$ 1,105,699	\$ (82,404)	\$ 148,058	\$ 39,819,750	\$ 17.88	
Westside	\$ 511,180	\$ 451,128	\$ 12,857	\$ (5,175)	\$ 52,371	\$ 458,810	\$ 17.42	
Zone 7	\$ 1,360,222	\$ 1,461,121	\$ 41,642	\$ (5,312)	\$ (137,228)	\$ 1,497,450	\$ 17.34	
PWRPA	\$ 80,003,661	\$ 77,239,533	\$ 2,201,327	\$ (389,441)	\$ 952,242	\$ 79,051,419	\$ 16.65	

2. Load scheduling
  - a) Energy is 25% under budget for the month.
  - b) Load averaged 10 MW (5 MW less than December 2022)
  - c) Average schedule deviation of 2MW for an estimated credit of 42,000.

**Power and Water Resources Pooling Authority**  
**March 1, 2023, Board Meeting**  
**Operations Manager Report**

3. Pricing

a) Average monthly prices

	Cost	Revenue
BR	\$ 40.97	\$ (155.38)
Displacement	\$ -	\$ -
WWD BOR	\$ -	\$ (110.26)
Whitney Point	\$ 58.75	\$ (92.13)
Astoria	\$ 63.00	\$ (87.39)
Slate	\$ 26.81	\$ (127.10)
Lodi	\$ 149.71	\$ (155.51)
Market		

**Generator Reports**

1. Astoria Solar

- a. Generation
- 1,650MWh, 22% capacity
  - Net credit \$72,200 or \$44 /MWh

2. Whitney Point Solar

- a. Generation
- 1,047 MWh, 13% capacity factor
  - Net credit \$61,000, or \$59 /MWh

3. Slate Solar + Battery

- a. Generation
- 1,976 MWh, 10% capacity factor
  - Net value \$341,200, or \$172/MWh
- b. Staff work
- ACES & MCG to setup data flows: data tunnel established.
  - BESS Invoice validation for June and September outstanding
  - Deemed Energy issues being worked out for all months.
  - Cost allocation between PV and Battery contract shares, first draft done and included for January – December data in the pre-reconciliation report.
  - January data not received at time of this report and is estimated.

4. Lodi Energy Center

- a. Generation
- 5,952 MWh, 74% capacity factor
  - Net credit \$40,000, or \$9/MWh

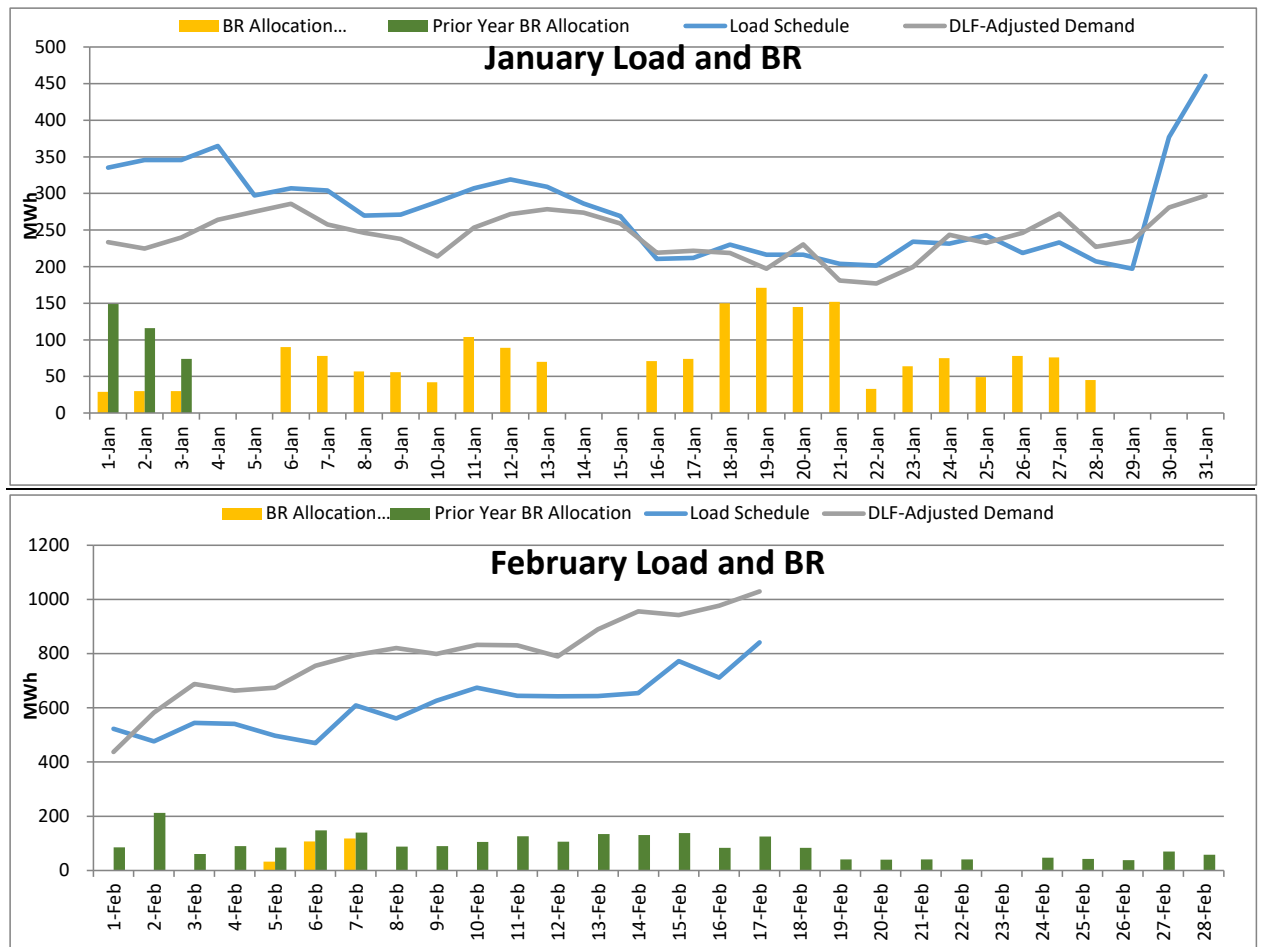
**Power and Water Resources Pooling Authority**  
**March 1, 2023, Board Meeting**  
**Operations Manager Report**

**Power Planning & Regulatory**

1. Power Net Short

- a. 2023 – Tracking a wet year for now, WAPA’s current forecast does not yet have the January storm activity. We are watching 2016 output based on reservoir levels and that was a good water year after the 2014/2015 critically dry years.
- b. WAPA overview
  - i. Reservoirs:
    - 1. Oroville & Folsom are above historical average.
    - 2. Shasta, San Luis and New Melones are filling fast towards historical average: 84%, 94% and 76% respectively.
    - 3. Trinity: 48% of historical average
  - ii. Snowpack % of normal for this date:
    - 1. Northern Sierra/Trinity 144%
    - 2. Central Sierra: 185%
    - 3. Southern Sierra 219%

BR output:



**Power and Water Resources Pooling Authority**  
**March 1, 2023, Board Meeting**  
**Operations Manager Report**

2. Regulatory

a. Resource Adequacy:

- No shortfall capacity calls from the CAISO so far in 2023.

b. RPS: Compliance snapshot:

- PWRPA staff working with solar developers on various District project solicitations.
- 2023 REC purchase is included in the budget, however, we'll reevaluate the volumes around April when we have a better feel for the loads/hydro year estimates for 2023.
- CEC is near completion of the CP3 validation. Staff working on final validation and acceptance.

## **Power & Water Resources Pooling Authority**

4. GM Comments.

# Power and Water Resources Pooling Authority

## March 1, 2023 Information Packet

### GM Report

#### **Project opportunity – LTRID hydro Bucket 1 RECs only – RESPONSES REQUESTED**

Lower Tule River Irrigation District (LTRID) owns and operates the Success Power Plant, a 1.4 MW hydroelectric generator located in Tulare County, California. Success' generation runs for flood control or irrigation and, as such, it does not have dispatchability. Furthermore, the generator does not provide any capacity benefit, and this generator is not expected to attain a Net Qualifying Capacity to provide Resource Adequacy (RA) in the CAISO. However, it is an eligible renewable resource and generates energy and Bucket 1 RECs. Importantly, Success' spillway may be raised by 28,000 Acre Feet (AF), allowing for up to 30 days of additional generation in the summer.

LTRID engaged ACES to evaluate the value of the output resource using Success' monthly generation averages from 2011 to 2021, forward price curves at SP-15 and for PCC – 1 RECs, and other metrics. ACES conducted its analysis by creating two scenarios to model Success: Current operations / Operations if the spillway is raised. Based on these methodologies, ACES estimated the fair market values for 10 and 20-year contracts to sell energy and Bucket 1 RECs from Success.

PWRPA made a soft proposal to LTRID to purchase only the Bucket 1 RECs and enable LTRID to schedule the unit through PWRPA, whereby LTRID would bear all costs and receive all benefits of selling the unbundled energy into the CAISO market. This involves having PWRPA "own" the Success plant in the same manner that the SV Main solar facility is titled to PWRPA. PWRPA believes that this would provide the greatest benefit to LTRID and any PWRPA participant that subscribes to the Bucket 1 purchase.

Based on the 10-year generation average, the aggregate annual purchase price would be less than \$30,000. I am keeping the details confidential, therefore, please email me immediately if you are interested in this project and I will set up multiple TEAMS meetings to discuss (must be less than a quorum).

#### **Adjustment to Cap & Trade allocation tracking sheet**

The current Cap & Trade allocation policy was adopted in November 2021 through Resolution 21-11-14. The first two resolving paragraphs outline the procedure as presented here:

1. [The Board] Determines that PWRPA's ratepayer pro rata cost burden resulting from the ARB Cap-and-Trade Program may be accurately forecast by the 5-Year Average Retail Sales shown in Exhibit B to the Joint Powers Agreement, as amended annually.
2. [The Board] Determines for the purpose of allocating the allowance revenue received in each calendar year, the Exhibit B approved in that calendar year shall be effective January 1 of that same calendar year.

It was discovered in February 2023 that the Cap & Trade allocation sheet had not been updated in 2022 using the Exhibit B approved in April 2022 by Resolution 22-04-05. The Cap & Trade allocation sheet included in this month's Treasurers Report has been updated and shows the proper percentages and amounts for 2021 and 2022. Accordingly, the allocation percentages for 2023 will be updated in April when the new Exhibit B 5-Year Average Retail Sales values are presented for approval. I apologize for this oversight.

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**PWRPA collaborations with two National Labs under the DOE HydroWIREs (Water Innovation for a Resilient Electricity System) Initiative.** This Initiative was established to understand, enable, and improve hydropower's contributions to reliability, resilience, and integration in the rapidly evolving U.S. electricity system.

- PWRPA is requesting Technical Assistance pursuant to the HydroWIREs, with no cost share requirement. National Lab Team Member is the Idaho National Laboratory. WAPA-Sierra Nevada Region markets hydropower provided by the Bureau of Reclamation in the Day Ahead Market (DAM) and Realtime Markets (RTM) from several reservoirs on the Central Valley Project (CVP) in California. Recent changes to battery technology have made it advantageous to integrate battery storage into power systems. Battery storage will have the potential to: (1) reduce wear and tear on hydro generators; (2) increase grid reliability; and (3) reduce cost by charging during low value/price periods and discharging during high value/price periods. There are numerous options to integrate battery storage as it relates to battery type, size, and location for deployment. WAPA SNR and PWRPA will need to work in close coordination with Reclamation to identify the most effective means to implement battery storage on the CVP. This coordination will require a formal analysis to determine potential battery size, types, and deployment locations that offer the greatest return on investment. PWRPA is requesting Technical Assistance from the Water Power Technology Office to conduct this analysis. The study can explore several places in the CVP where storage can be deployed with different value stacks depending on location in the California grid, different voltage tie in levels, and different sizing constraints based on complementing existing generators and locations of federal customers that have both retail and WAPA service. There are different opportunities to have storage assist with meeting automatic generation control (AGC) requirements while reducing wicket gate wear and tear. And different sites have different land assets and power transfer capability available to accommodate viable storage deployment and operation.
- PWRPA is requesting Technical Assistance Challenge with no cost-share requirements. National Lab Team Member is the Pacific Northwest National Laboratory. San Luis Reservoir is an off-stream storage reservoir in California. The San Luis Pump-Generating Plant is owned by the U.S. Bureau of Reclamation and operated by the California Department of Water Resources. Water is stored off stream for delivery down the California Aqueduct and Delta-Mendota Canal. San Luis Reservoir has a lower forebay making in it an ideal location for pump storage hydropower. The generation from the San Luis Joint-Use Facilities is split between the State (about 52 percent) and Federal (about 48 percent). The State only generates 1/3 of the power they consume within their system. On the other hand, WAPA, who markets the Federal share, sells 2/3 of their generation while consuming 1/3 of its generation. Although the reservoir is currently operated to the extent possible as pumped storage hydropower, there are significant infrastructure limitations. The limitations include no throttling capability with fixed amperage and 63 percent round-trip efficiency. Throttling currently causes stress to the pumps with overheating increasing the need for early repair. Retrofitting of the existing infrastructure, a 424 MW (total installed capacity) facility with 290 feet of gross head, will reduce the limitations of the pumped storage hydropower by allowing throttling and improved round-trip efficiency. The facility currently sells its energy to the California Independent System Operator (CAISO) and is accounted separate from WAPA's power customers. With the retrofit, the facility will be able to potentially provide other services to the CAISO including energy arbitrage, ramping capacity, regulation up and down, and stability



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services. Although the monetary benefits may not go directly to WAPA customers, the benefits may include indirect benefits to their power customers. The value of the additional pumped storage hydropower is of particular interest as it informs the feasibility of any potential retrofitting. The potential added values need to be evaluated with regards to the requirements to meet water supply requirements. WAPA would like to form an interdisciplinary team including DOE's National Labs to evaluate the current limitations on pump storage hydropower at San Luis Reservoir and explore the value of expanding some of those limitations. This study would have the potential to inform future cost benefit analysis of available retrofit options.

#### **PWRPA outreach**

- Initial discussions with Northern California Power Agency to propose amending the LEC PMOA for utilizing renewable natural gas (RNG) as a fuel to replace certain quantities of [fossil] natural gas. Using RNG would reduce the cost for Cap & Trade compliance, secure reliable sources of fuel not subject to natural gas pricing risks and reduce the LEC emission factor consistent with California's long-term net-zero mandates. The LEC burns approximately 2,000 MMBtu per hour during operations.
- Exploratory discussions with a central valley producer of RNG that has contracted with PG&E to inject RNG into the PG&E pipeline. The production is scheduled to exceed 1,500,000 MMBtu per year by 2027. It is currently uncertain whether purchasing this fuel for the LEC will be cost-effective since RNG brings significant value to the RNG producer when selling it to the transportation sector for compliance with the Low Carbon Fuel Standard.
- Exploratory discussions with a water agency in northern California regarding forest biomass utilization for feedstock at a proposed biomass-powered electricity generating facility. Biomass electricity generation is an eligible renewable resource. Forest thinning activities are forecast to provide more than 3 times the annual fuel needs of the proposed plant, while also mitigating wildfire risks.
- Initial research on available grant funding mechanisms in state and federal arenas. Areas of concentration are grant funding for distributed generation, energy storage technologies and transmission & distribution infrastructure.

#### **Friday virtual coffee - discontinued.**

Beginning in late 2022, I made myself available every Friday morning at 8:00 AM a virtual coffee. This set time is being discontinued, however, I welcome and encourage anyone to contact me for one-on-one TEAMS meetings to discuss any matter of interest.