

**Power & Water Resources Pooling
Authority**

Information Packet

Wednesday, January 4, 2023

- 1. Minutes of the Regular Board Meeting held on December 7, 2022**
- 2. Treasurer's Report**
- 3. Extract of the Operations Report**
- 4. GM Comments**

Power & Water Resources Pooling Authority

1. Minutes of the December 7, 2022 Regular Board Meeting

Power and Water Resources Pooling Authority

Chair	<p>Directors and Alternates Present: <i>Dave Nixon (AEWSD), Dave Weisenberger (BCID), Ed Pattison (BBID), Dave Ansolabehere (CWD), Louis Jarvis (GCID), Manny Amorelli (James), Lance Boyd (PPID), Gary Enos (PPID), Jordan Navarott (RD 108), John Brosnan (SCVWD), Bobby Pierce (WSID), Kiti Campbell (WWD).</i></p> <p><i>Also participating: Bruce McLaughlin (GM), Cori Bradley (OM), James Carney (Z7).</i></p>
Chair	<p>Matters Subsequent to Posting the Agenda – Mr. McLaughlin stated that there were several P3 being considered in the Consent Agenda.</p>
Chair	<p>Public Comment – None</p>
Chair	<p>Stakeholder Appointing Body (Irrigation Districts only) – Consider and possibly approve Sonoma County Water Agency’s appointment of Jake Spaulding as Director.</p> <p>Ed Pattison moved, Manny Amorelli seconded, and participating Directors unanimously approved the appointment of Jake Spaulding as director for Sonoma County Water Agency.</p> <p><i>Voting Shares: 5 Yes / 0 No / 2 Absent (LTRID, WSID)</i></p>
Chair	<p>Consent Agenda</p> <p>A. Minutes of the Regular Board Meeting held on October 5, 2022. B. P3 funding requests (CWD, WSID, SCWA, and RD 108). C. Request to terminate POD: WWD.</p> <p>Dave Nixon moved, Dave Ansolabehere seconded, and participating Directors unanimously approved the Consent Agenda.</p> <p><i>Voting Shares: 76.3% Yes / 0% No / 23.7% Absent (LTRID, SCWA, WSID, Z7)</i></p>
TR GM OM	<p>A. Treasurer’s Report - Approval of Ordering Payments of Accounts and Claims; acceptance of the Treasurer’s Report and other items related to Treasurer’s duties. 2022 Summer Reserve Program update and termination.</p> <p>Mr. Nixon reviewed the disbursement list and cash activities and stated that all activity was normal. He noted that all reimbursement checks have gone out and asked that districts check their mail. He also requested a summary of all P3 funding requests and noted that he will be engaging the same accounting firm for the 2022 audit.</p> <p>Dave Ansolabehere moved, Gary Enos seconded, and participating Directors unanimously approved the Treasurers Report.</p> <p><i>Voting Shares: 76.3% Yes / 0% No / 23.7% Absent (LTRID, SCWA, WSID, Z7)</i></p> <p>B. Resolution 22-12-19 2023 Annual Budget.</p> <p>Ms. Bradley presented the 2023 budget and pro forma rates. She stated that there have not been any significant changes since the Board’s October review. The projected rates are based on both average and dry years. The most significant change for 2023 is the PG&E distribution rates. She said there was no significant change in overhead for 2023 except for more legal expenses allocated to the PG&E WDT litigation at FERC. Lodi is back to normal operations and Astoria and Whitney Point are expected to be fully functional. Slate will have a full year of operations, and Warm Springs will not be online until Q4. She stated that 2022 saw the highest rates and was the worst Base</p>

	<p>Resource year in PWRPA's history. The lack of Base Resource drove the rate to \$101 per unit in 2022 as opposed to the typical \$30 in wet years. She stated that her team averaged 2019-2022 to come up with 2023 projections.</p> <p>2023 is the first year that includes rate adjustments reflective of the WDT3 annual true up. In past years there was a published rate that did not change until a new rate case, however, under WDT3 a formula rate is used so that they can change the rate according to their actual cost during the year.</p> <p>For budgeting, the estimated transmission cost uses the currently published rate with an adder of 5%. She stated that the cost of REC requirements and distribution cost is pushing up each district's cost. PWRPA needs to buy Bucket 1 and Bucket 3 RECs in 2023 and stated that the goal is that in the future PWRPA will receive REC credit from its own renewable projects.</p> <p>Ms. Bradley discussed the pro forma rates report and requested that districts decide if they want to have rates determined based on 2023 being a dry year or an average year.</p> <p>David Nixon moved, David Ansolabehere seconded, and participating Directors unanimously approved utilizing <u>dry-year rates with rate reviews every Board Meeting in 2023.</u></p> <p><i>Voting Shares: 82.1% Yes / 0% No / 17.9% Absent (LTRID, SCWA, Z7)</i></p> <p>C. Resolution 22-12-20 <i>RBI Professional Services Agreement.</i> (Public official performance review in closed session may be taken out of order)</p> <p>Mr. McLaughlin stated that the Board reviews RBI annually as well as reviewing Ms. Bradley's performance. Ms. Bradley's performance review was handled in closed session. The vote was taken in open session.</p> <p>David Nixon moved, Manny Amorelli seconded, and participating Directors unanimously approved Resolution 22-12-20 RBI PSA.</p> <p><i>Voting Shares: 82.1.0% Yes / 0% No / 17.9% Absent (LTRID, SCWA, Z7)</i></p>
GM OM	<p>A. GM Report – WAPA matters; public information on FERC ER20-2878 WDT3, ER22-619 WDT3 and Biannual Update; Inflation Reduction Act update and financing models; distributed solar/storage evaluations; 2023 scope and strategic planning.</p> <p>Mr. McLaughlin updated the Directors on his participation in WAPA committees. He said they are discussing ideas with the Bureau on new ways to handle water to recharge the aquifers. He also discussed a Hydropower Operations Subcommittee proposal to avoid bypassing power generation during environmental water releases. He reminded the group that he is available on TEAMS for "Virtual Coffee" every Friday to discuss anything of interest to them. Mr. McLaughlin briefly described some of the tax credit advantages offered by the Inflation Reduction Act for PWRPA districts, such as a 30-50% tax credit for any carbon-neutral generation project placed in service after 2024.</p> <p>B. OM Report – ops highlights; power & RA forecast; RPS compliance update for CP 4.</p> <p>Ms. Bradley stated that her team has been working on the budget, seeking payment from the CEC for PWRPA's participation in the Demand Side Grid Support (DSGS) program, a refund from the CAISO, and a wrap up of SLATE items. She stated that in October all units operated as expected. She noted that PWRPA is going into the third year of a four-year RPS compliance period.</p>

	<p>C. Resolution 22-12-21 2023 Regular Meeting Dates.</p> <p>Mr. McLaughlin presented the schedule of meetings for 2023.</p> <p>Ed Pattison moved, Dave Ansolabehere seconded, and participating Directors unanimously approved the Resolution 22-12-21, 2023 Regular Meeting Dates.</p> <p><i>Voting Shares: 82.1% Yes / 0% No / 17.9% Absent (LTRID, Z7, SCWA)</i></p> <p>D. Resolution 22-12-22 2023 Appointment of Officers.</p> <p>Mr. McLaughlin opened the floor for members to put forth names the PWRPA Officers to serve in 2023.</p> <p>Dave Ansolabehere moved, Manny Amorelli seconded, and participating Directors unanimously approved the Resolution 22-12-22 which retained all current PWRPA Officers (David Weisenberger, Chairman; David Ansolabehere, Vice Chair; David Nixon, Treasurer; Bruce McLaughlin, Secretary).</p> <p><i>Voting Shares: 82.1% Yes / 0% No / 17.9% Absent (LTRID, SCWA, Z7)</i></p> <p>E. PWRPA district reports (2023 energy outlook related to water operations)</p> <p>Dave Weisenberger gave an update of a battery project BCID is evaluating. John Brosnan stated that his district is considering a solar carport retrofit. He also stated that SCVWD has initiated work on the Pacheco Reservoir Expansion Project to store water with a potential for energy generation.</p>
OM GM	<p>Special Projects – Slate solar & storage update.</p> <p>Ms. Bradley stated that Slate Solar is operating very well to date and provides a net revenue for PWRPA. The project has been bought and sold several times resulting in extra coordination on operational and reporting issues. She stated that due to an inability to agree on the reporting requirements and the logic for calculating payments for battery storage, PWRPA has not paid for storage. She said reporting on battery storage is finally coming in properly, so she anticipates finalizing the payment logic soon.</p>
GC	<p>Closed Session</p> <p>A. Public Employee Performance Evaluation: Operations Manager. Pursuant to Gov’t Code section 54957.</p> <p>After returning to open session, Mr. McLaughlin reported that no action was taken during closed session.</p>
Chair	<p>Board Matters – Other announcements.</p>
Chair	<p>Adjournment - Next Regular Meeting is Wednesday, February 1, 2023, at 9:00 A.M.</p>

Power & Water Resources Pooling Authority

2. Treasurer's Report for Month Ending November 30, 2022

POWER AND WATER RESOURCES POOLING AUTHORITY
CASH ACTIVITY AND TREASURER'S REPORT
 MONTH ENDING NOVEMBER 30, 2022

CASH ACTIVITY:

BALANCE OCTOBER 31, 2022		\$ 14,353,666.78
Increases:		
Power Billing Invoices	\$ 6,356,869.25	
CAISO - Collateral Deposit Refund	3,000,000.00	
2021 Reconciliation P-3 Transfer	143,959.63	
NCPA - LEC	116,227.34	
Whitney Point Solar	102,603.68	
APX - Astoria Solar	91,726.53	
TCB - Monthly Interest	313.57	
		9,811,700.00
Decreases:		
2021 Reconciliation	\$ 3,315,403.02	
CAISO	2,806,855.64	
WAPA - Base Resource Power October 2022	1,329,315.09	
WAPA O&M	285,506.63	
Canadian Solar - Slate Solar - September 2022	152,375.41	
Canadian Solar - Astoria Solar - October 2022	150,151.00	
Robertson-Bryan, Inc	67,304.71	
WAPA - Restoration October 2022	55,598.34	
PG&E - GCID, RD 108, SCVWD, Zone 7	54,246.30	
Trimark - Cell, Meter Reading and TM	50,039.86	
Cameron-Daniel, P.C.	43,603.50	
Aces - November 2022	25,000.00	
Arvin-Edison Water Storage District-Treasurer	5,518.67	
Holland & Knight - Legal Fees WDT3	4,542.19	
Michael McCarty Law Office, PLLC	3,000.00	
White Pines Solar Santa Clara WD - October 2022	2,324.64	
Advanced Data Storage	44.50	
		8,350,829.50
BALANCE NOVEMBER 30, 2022		\$ 15,814,537.28

TREASURERS REPORT:

Operating Account:		
Tri Counties Bank - General Operating/Sweep Accounts #1031821 & #1031830		\$ 2,744,590.75
Local Agency Investment Fund (LAIF) - Account # 90-39007, yield 2.007%		
Reserve Funds	\$ 4,259,220.75	
Cap & Trade Allowance Revenue	5,465,458.69	
Funds on Deposit	3,345,267.09	
Total LAIF		13,069,946.53
TOTAL PWRPA OPERATING FUNDS - NOVEMBER 30, 2022		\$ 15,814,537.28
Public Purpose Program (P-3) Tri Counties Bank Account #1031856		4,174,580.96
TOTAL FUNDS ON DEPOSIT WITH PWRPA NOVEMBER 30, 2022		\$ 19,989,118.24
CAISO Collateral Deposit Account		3,904,922.02
Western Area Power Administration - PWRPA Trust Account		1,000.00
TOTAL FUNDS - PWRPA & OTHER AGENCIES - NOVEMBER 30, 2022		\$ 23,895,040.26

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
		Total	\$3,345,267.09

Power and Water Resources Pooling Authority
P-3 Remaining Funds By Year
as of November 30, 2022

Member Agency	2018 (a)	2019 (b)	2020 (c)	2021 (d)	2022 (e)	Total Available P-3 Funds (f)	Expenditures Total to Date (g)	November-22 (h)
Arvin-Edison WSD	\$0.00	\$0.00	\$0.00	\$13,418.71	\$505,142.28	\$518,560.99	\$4,967,215.16	\$0.00
Banta Carbona ID	0.00	0.00	28,418.11	49,489.90	59,338.11	137,246.12	404,708.20	0.00
Cawelo WD	28,404.62	50,401.52	37,702.35	33,863.10	40,014.45	190,386.04	772,616.22	0.00
Glenn-Colusa ID	0.00	0.00	23,300.11	32,132.77	14,052.65	69,485.53	348,863.79	0.00
James ID	0.00	8,070.92	10,457.51	15,685.23	21,194.02	55,407.68	122,899.04	0.00
Lower Tule ID	20,597.04	28,288.43	28,690.43	29,615.83	27,041.55	134,233.28	222,237.13	0.00
Princeton ID	0.00	7,595.11	9,341.59	8,671.24	4,889.95	30,497.89	146,848.67	0.00
Santa Clara Valley WD	0.00	0.00	0.00	16,885.21	81,777.17	98,662.38	638,166.45	0.00
Sonoma County WA	30,352.25	84,011.90	99,654.97	109,040.76	113,000.13	436,060.01	1,475,857.96	0.00
West Stanislaus ID	20,172.96	27,830.71	38,602.11	44,910.81	65,504.02	197,020.61	357,089.44	0.00
Westlands WD (North & South)	0.00	0.00	417,630.12	684,821.39	1,021,760.13	2,124,211.64	4,531,125.34	0.00
West Side ID	0.00	5,539.13	8,928.49	9,001.39	13,201.78	36,670.79	129,954.40	0.00
RD 108	14,275.67	24,850.41	17,667.76	16,362.76	10,126.69	83,283.29	170,239.74	0.00
Zone 7	0.00	0.00	9,318.79	25,493.12	27,935.74	62,747.65	71,833.02	0.00
Undesignated/Forfeited/Misc	107.06	0.00	0.00	0.00	0.00	107.06	35,133.04	0.00
Total	\$113,909.60	\$236,588.13	\$729,712.34	\$1,089,392.22	\$2,004,978.67	\$4,174,580.96	\$14,394,787.60	\$0.00
Exclusive access Date	12/31/22	08/04/23	08/03/24	08/04/25				

- (a) Three year exclusive access to these funds by agency begins on 8/07/19 and ends 12/31/22 (ending date 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
- € 2022 P-3 collected through November 2022
- (f) Total available P-3 Funds
- (g) Total P-3 expenditures since inception of program
- (h) P-3 expenditures November 2022

Power and Water Resources Pooling Authority

Cap and Trade Allowance Revenue

As of November 30, 2022

District	Resolution 13-04-05		Resolution 21-11-14		Total Revenue	Expenditures	Balance
	Allocation	Revenue	Allocation	Revenue			
Arvin	37.478%	\$3,421,905.95	29.4617%	822,512.53	\$ 4,244,418.48	\$ 3,421,905.95	\$ 822,512.53
Banta Carbona	3.115%	284,413.18	4.7724%	133,237.25	417,650.43	-	417,650.43
Cawelo	8.447%	771,248.19	4.6370%	129,456.56	900,704.75	205,787.50	694,917.25
Glenn-Colusa	2.849%	260,126.21	3.2802%	91,577.00	351,703.21	351,703.21	-
James	0.798%	72,860.90	0.8133%	22,706.81	95,567.71	-	95,567.71
Lower Tule	1.005%	91,760.91	2.8435%	79,384.57	171,145.48	-	171,145.48
Princeton	1.334%	121,800.06	1.0877%	30,366.99	152,167.05	47,503.21	104,663.84
RD 108	1.368%	124,904.41	1.4173%	39,569.22	164,473.63	164,473.63	-
Santa Clara	4.853%	443,100.21	6.3994%	178,658.71	621,758.92	443,100.21	178,658.71
Sonoma	7.787%	710,987.29	10.1161%	282,422.91	993,410.20	196,000.00	797,410.20
Byron Bethany II	0.708%	64,643.51	0.7471%	20,857.91	85,501.42	85,501.42	-
West Stan	3.228%	294,730.57	4.4367%	123,864.27	418,594.84	150,789.15	267,805.69
Westlands	27.030%	2,467,957.68	28.6422%	799,635.31	3,267,592.99	1,390,020.55	1,877,572.44
Zone 7	0.000%	0.00	1.3452%	37,554.41	37,554.41	-	37,554.41
Total	100.000%	\$9,130,439.07	100.0000%	\$ 2,791,804.45	\$11,922,243.52	\$ 6,456,784.83	\$ 5,465,458.69

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

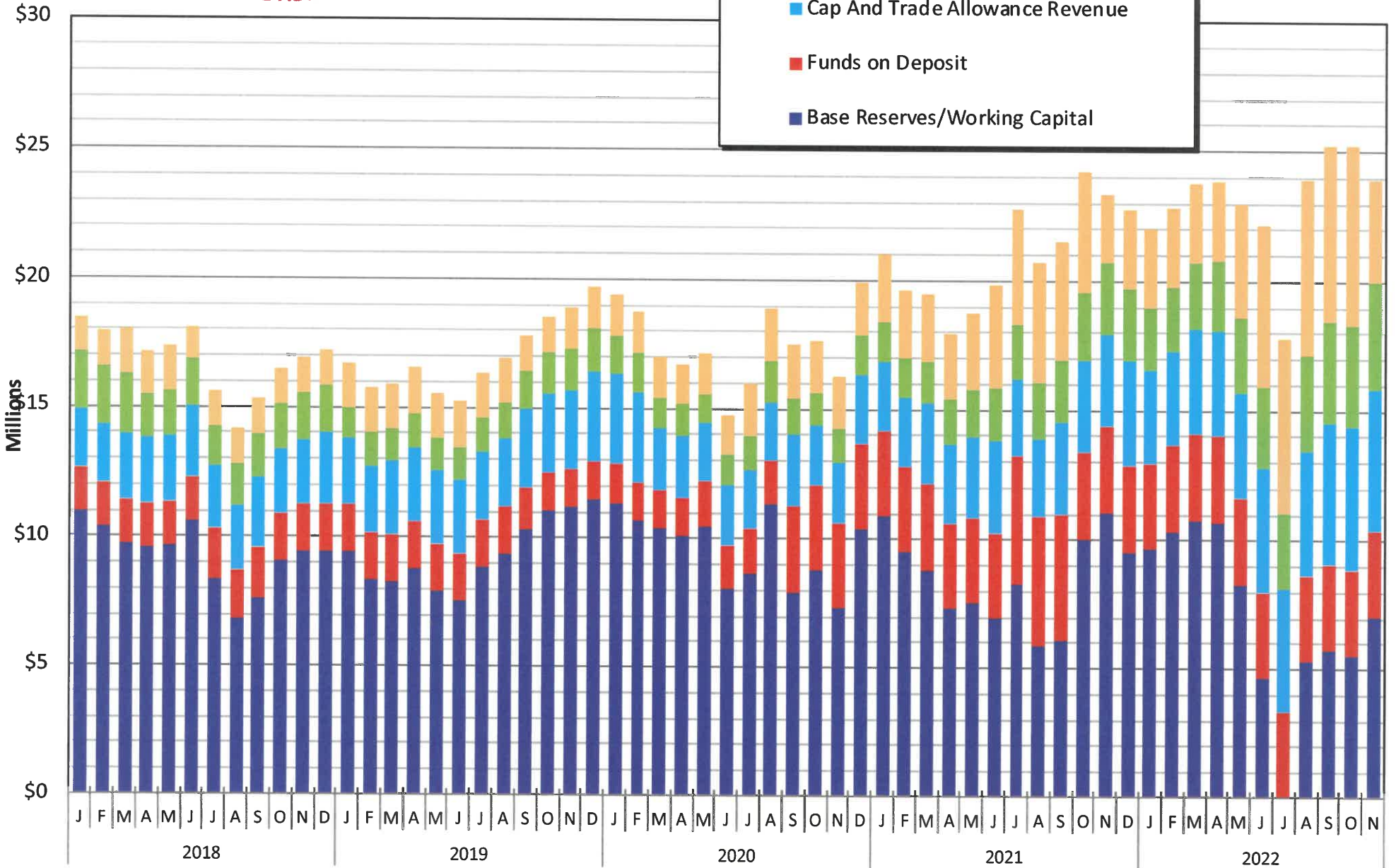
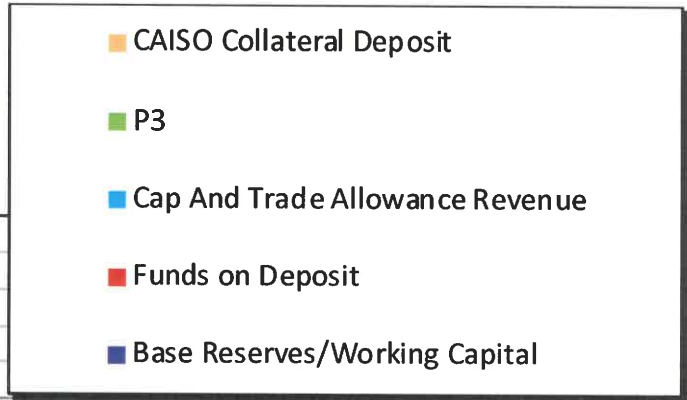
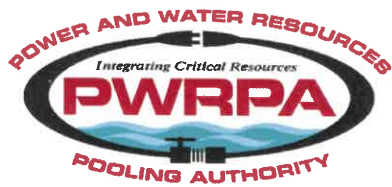
(b) GCID \$65,084.88 in approved projects remaining revenue transferred as a payment to power cost to help meet RPS

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		2,085,304.45
				Total	\$11,922,243.52

Resolution 13-04-05	\$9,130,439.07
Resolution 21-11-14	2,791,804.45
	<u>\$11,922,243.52</u>

SUMMARY TREASURER REPORT

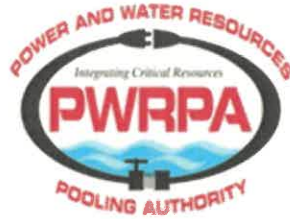


POWER & WATER RESOURCES POOLING AUTHORITY

WIRE TRANSFERS

November 1 - 30, 2022

Transaction Number	Beneficiary Name	Credit Amount	Value Date
157934	Cameron-Daniel, P.C.	\$43,603.50	11/2/2022
157935	Holland & Knight	\$4,542.19	11/2/2022
157936	ACES Power Marketing	\$25,000.00	11/2/2022
158390	CAISO Market Clearing	\$557,070.87	11/7/2022
158391	Pacific Gas and Electric	\$52,440.79	11/7/2022
159069	CAISO Market Clearing	\$411,247.04	11/14/2022
159070	Slate 1 (Canadian Solar)	\$152,375.41	11/14/2022
159071	Garlock Energy	\$2,324.64	11/14/2022
159350	WAPA O M	\$265,506.63	11/16/2022
159351	Western Area Power Administration	\$55,598.34	11/16/2022
159438	WAPA O M	\$20,000.00	11/16/2022
159836	CAISO Market Clearing	\$1,629,345.70	11/21/2022
160293	Western Area Power Administration	\$1,329,315.09	11/28/2022
160294	Trimark Associates, Inc.	\$50,039.86	11/28/2022
160295	Astoria 2 Operating	\$150,151.00	11/28/2022
160296	Pacific Gas and Electric	\$1,805.51	11/28/2022
160589	CAISO Market Clearing	\$209,192.03	11/30/2022
Total		4,959,558.60	



POWER AND WATER RESOURCES POOLING AUTHORITY

DISBURSEMENT LIST
December 2022

Check #	Vendor-name	Payment-description	Check-amount
3315	Advanced Data Storage	Document Storage - December 2022	44.50
3316	Arvin-Edison Water Storage District	Treasurer's Duties	4,899.63
3317	Braun Blaising & Wynne, P.C.	Legal Services - November 2022	426.96
3318	Michael McCarty Law Office PLLC	Consultant	3,000.00
3319	Robertson Bryan Inc.	Consultant	68,157.91
3320	Cawelo Water District	Approved P-3 Project	29,410.56
3321	Lower Tule River Irrigation District	Approved P-3 Project	109,569.31
3322	Reclamation District 108	(2) Approved P-3 Projects	15,000.00
3323	Sonoma County Water Agency	Approved P-3 Project	30,352.25
3324	West Stanislaus Irrigation District	Approved P-3 Project	139,194.86
		Sub-Total	<u>\$ 400,055.98</u>
Wire Transfers:			
Wire	Cameron-Daniel, P.C.	General Manager/General Council	\$ 38,379.46
Wire	Holland & Knight	FERC Wholesale Distribution Filing Legal Fees	11,306.82
		Total	<u><u>\$ 449,742.26</u></u>

Power & Water Resources Pooling Authority

3. Extract from Operations Report reflecting November 2022

SUMMARY OF MONTHLY OPERATIONS

EXECUTIVE SUMMARY

- Total costs:
 - 2% over budget for November
 - 19% over budget year-to-date
 - PWRPA service rate forecast: 17 c/kWh

- Energy consumption:
 - 5% under budget for November
 - 17% over budget year-to-date

- Total Metered Load Demand of 16,915 MWh supplied with:
 - 1,605 MWh Base Resource
 - 150 MWh WWD BOR Energy
 - 1,530 MWh Whitney Point Solar
 - 1,730 MWh Astoria Solar
 - 3,263 MWh Slate Solar
 - 4,364 MWh Lodi Energy Center
 - 4,273 MWh purchased from CAISO

- Displacement Program: On pause until February

- Carbon Free and Renewable resources supplied 49% of demand:
 - Current RPS compliance period requirement is 33%.
 - 9% from Base Resource
 - 9% from Whitney Point Solar
 - 10% from Astoria Solar
 - 19% from Slate Solar
 - 1% from WWD BOR

- The Authority load ranged from 13 to 50 MW with an average of 23 MW:
 - Average deviation from schedule: 8.9 MW
 - Over-scheduling: 73% of hours on average 11.7 MW
 - Under-scheduling: 27% of hours on average 2.5 MW
 - Largest errors: 32.1 MW over-schedule, 9.7 MW under-schedule
 - Deviation resulted in a cost to PWRPA of \$6,910

SUMMARY OF PORTFOLIO GENERATION

EXECUTIVE SUMMARY

- Astoria
 - 1,730 MWh, 24% capacity factor
 - Cost Review
 - \$63 MWh Contract Cost
 - \$68 MWh of attribute value
 - Net credit of \$5/MWh

- Whitney Point
 - 1,530 MWh, 19% capacity factor
 - Cost Review
 - \$62 MWh Contract Cost
 - \$72 MWh of attribute value
 - Net cost of \$11/MWh

- Slate PV and Battery
 - 3,263 MWh, 27% capacity factor
 - Cost Review
 - \$47 MWh Contract Cost
 - \$130 MWh of attribute value
 - Net credit of \$73/MWh

- Lodi Energy Center:
 - 4,364 MWh, 76% capacity factor
 - Cost Review
 - \$90 MWh Contract Cost, \$105 Debt Loaded rate
 - \$113 of attribute value
 - Net revenue of \$8/MWh

TOTAL COSTS AND REVENUE

A. Monthly and Annual Costs

- Transmission cost increase due to load and a rate increase retroactive to January 1, 2022.
- Distribution costs use Contract Demand usage for Jan – May and Actual Demand starting June.
- Base Resource costs are below budget due to dramatically decreased Base Resource forecast which lowers energy revenue.
- Supplemental power costs are up due to increased loads and power prices.

	November 2022			Annual 2022		
	AVG Budget*	Actual	Difference	AVG Budget*	Actual	Difference
DLF Energy (MWh)	17,861	16,915	-5%	423,181	495,459	17%
Operations	\$ 189,051	\$ 176,945	-6%	\$ 2,268,607	\$ 2,099,315	-7%
Distribution	1,846,015	1,447,020	-22%	22,152,181	18,784,731	-15%
Transmission	467,564	548,582	17%	11,461,050	16,108,097	41%
***Base Resource	306,443	(3,345)	-101%	(1,245,210)	(977,714)	-21%
**Supplemental	1,440,149	1,775,556	23%	29,326,148	39,587,735	35%
CAISO Admin & Misc.	28,613	410,293	1334%	677,911	1,202,280	77%
Total Costs	\$ 4,277,835	\$ 4,355,051	2%	\$ 64,640,687	\$ 76,804,444	19%
P3, Misc., etc.	121,918	127,945		1,842,260	1,799,427	
Invoice Revenue	3,419,193	3,879,103	13%	66,482,946	79,304,376	19%
Surplus / (Deficit)	\$ (980,560)	\$ (603,892)		\$ (0)	\$ 700,505	

*** BR amount is based on invoice, not cost allocation

** Supplemental category includes all Generation

B. District Cost Allocation and Cash Position:

- December data is largely impacting results. The power prices are coming in at average of \$250/MWh at the time of this report. We'll have a better estimate next month when December data is complete (as well as the CRR collateral for November).

Participant	Revenue		Expenses		Balance	Summary	
	Power Invoice	Power & Ops Costs	P3	Direct Consulting	Over/(Under) Funded	Total Costs	Composite Rate (¢/ kWh)
Arvin-Edison	\$ 19,466,307	\$ 18,427,761	\$ 525,191	\$ (110,920)	\$ 624,275	\$ 18,842,032	\$ 16.00
Banta-Carbona	\$ 2,236,820	\$ 1,998,989	\$ 56,971	\$ (46,000)	\$ 226,860	\$ 2,009,961	\$ 10.53
Cawelo	\$ 1,782,509	\$ 1,516,866	\$ 43,231	\$ (69,575)	\$ 291,987	\$ 1,490,521	\$ 14.94
Glenn-Colusa	\$ 607,079	\$ 548,022	\$ 15,619	\$ (8,625)	\$ 52,063	\$ 555,016	\$ 19.42
James	\$ 830,319	\$ 734,367	\$ 20,929	\$ (2,875)	\$ 77,898	\$ 752,421	\$ 14.99
Lower Tule	\$ 1,291,409	\$ 1,327,948	\$ 37,847	\$ -	\$ (74,386)	\$ 1,365,795	\$ 19.95
Princeton	\$ 196,440	\$ 113,631	\$ 3,238	\$ (2,875)	\$ 82,445	\$ 113,994	\$ 123.10
RD108	\$ 456,044	\$ 409,305	\$ 11,665	\$ (4,469)	\$ 39,543	\$ 416,501	\$ 23.62
Santa Clara	\$ 3,426,900	\$ 3,440,450	\$ 98,053	\$ (5,810)	\$ (105,793)	\$ 3,532,693	\$ 16.65
Sonoma	\$ 5,244,345	\$ 5,303,730	\$ 151,156	\$ (10,939)	\$ (199,602)	\$ 5,443,947	\$ 15.73
West Stan	\$ 2,518,405	\$ 2,388,105	\$ 68,061	\$ (34,500)	\$ 96,739	\$ 2,421,666	\$ 11.84
Westlands	\$ 39,407,673	\$ 38,773,081	\$ 1,105,033	\$ (82,424)	\$ (388,017)	\$ 39,795,690	\$ 17.90
Westside	\$ 506,460	\$ 446,818	\$ 12,734	\$ (5,175)	\$ 52,083	\$ 454,378	\$ 17.25
Zone 7	\$ 1,333,667	\$ 1,375,370	\$ 39,198	\$ (5,312)	\$ (75,589)	\$ 1,409,256	\$ 16.75
PWRPA	\$ 79,304,376	\$ 76,804,444	\$ 2,188,927	\$ (389,500)	\$ 700,505	\$ 78,603,871	\$ 16.62

PORTFOLIO PERFORMANCE

A. PWRPA's Portfolio Summary

Table 3: PWRPA Energy Summary								
	Total MWh	Avg MW		Vendor Cost / (Credit)		CAISO		
		On	Off	Cost	Rate	Cost/(Credit)	Rate	
Supply:								
*Base Resource	(1,605)	3.3	0.8	\$ 163,009	\$ 101.56	\$ (127,572)	\$ (79.48)	
*Displacement Program	-	-	-	\$ -	\$ -	\$ -	\$ -	
WWD BOR Energy	(150)	0.3	0.1	\$ -	\$ -	\$ (11,597)	\$ (77.31)	
**Warm Springs Hydro	-	-	-	\$ -	\$ -	\$ -	\$ -	
Whitney Point Solar	(1,530)	3.2	0.7	\$ 89,872	\$ 58.75	\$ (87,614)	\$ (57.27)	
Astoria Solar	(1,730)	3.6	1.0	\$ 108,989	\$ 63.00	\$ (90,333)	\$ (52.22)	
Slate Solar	(3,263)	6.7	1.8	\$ 87,471	\$ 26.81	\$ (259,873)	\$ (79.65)	
Lodi Energy Center	(4,364)	5.9	6.2	\$ 392,443	\$ 89.92	\$ (437,467)	\$ (100.24)	
Market Resources	-	-	-	\$ -	\$ -	\$ -	\$ -	
Subtotal:	(12,642)	23	11	\$ 841,784	\$ 66.59	\$ (1,014,456)	\$ (80.25)	
Load:								
Scheduled Load (DAM)	22,552	33	29			\$ 2,023,730	\$ 89.73	
Load Imbalance (RTM)	(5,637)	(8)	(7)			\$ (476,134)	\$ 84.46	
Subtotal:	16,915	25	22			\$ 1,547,596	\$ 91.49	
**Net total:	4,273					\$ 533,140	\$ 124.76	

* Base Resource and Displacement dollars here are based on annual rate, not the monthly invoice.

** Warm Springs is allocated 100% to SCWA

Table 4: PWRPA Energy Supply, Energy and Rates			
	Cost / (Credit)	Energy from/(to) CAISO (MWh)	Rate (\$/MWh)
Base Resource:	\$ 163,009	(1,605)	\$ 101.56
Vendor Market and Generation Energy:	\$ 678,776	(11,037)	\$ 61.50
CAISO credit from market and import supplies:	\$ (1,014,456)		\$ (80.25)
CAISO energy to serve load:	\$ 1,547,596	16,915	\$ 91.49
Total Energy Supply Expenditure:	\$ 1,374,924		\$ 81.28

B. Rates

Table 5: CAISO Average Rates (NP15)				
Average	October		November	
	On Peak	Off Peak	On Peak	Off Peak
Day Ahead Load Rate	\$ 72.44	\$ 70.34	\$ 92.46	\$ 93.01
Real Time Load Rate	\$ 70.98	\$ 76.08	\$ 91.68	\$ 93.58
Base Resource Credit Rate	\$ 69.23	\$ 66.57	\$ 89.44	\$ 89.33
Market Resource Credit Rate	\$ 71.73	\$ 66.55	\$ 91.79	\$ 90.60

Power & Water Resources Pooling Authority

4. GM Comments

Power and Water Resources Pooling Authority

January 4, 2023 Information Packet

GM comments

Strategic foresight issues for 2023

The electric sector is strategically changing around the globe, particularly in the areas of decarbonization (i.e., net-zero by 2045 to 2050), distributed generation, energy storage and the increasing penetration of intermittent zero-carbon generation (i.e., the energy transition). The volatile, uncertain, complex and ambiguous (VUCA) future in California presents physical, political and policy risks to almost every part of the energy, water and agricultural sectors. Just a few grand unknowns include droughts, floods, water curtailments, SGMA, increasing RPS requirements, tighter carbon emission restrictions on the water and/or agricultural sectors, wildfire power shutoffs and significant increases in energy and delivery costs. The mid-transitional period between now and 2045, in which the zero-carbon energy system coexists with the legacy fossil-based system, will require a progressive and coordinated phase in and phase out.

PWRPA is, effectively, a tool. It does not exist for its own sake. On several occasions, the PWRPA Board has considered whether the past PWRPA model and practices will provide the most cost-effective and reliable energy services for customers beyond 2030. A few adaptations and transitions were made to promote achieving those two goals. I do believe that further improvements can and should be pursued. Evaluating costs and services in past years does not, by itself, provide ample guidance for envisioning and developing strategies for the future years. Education, discovery, coordination, planning and implementation are necessary to ensure that PWRPA customers move strategically in the right direction into the next decade. I always welcome your thoughts and insights. Every Friday morning at 8:00 AM, I use TEAMS for a virtual coffee with anyone who wants to chat for 5 minutes or a full hour.

The following list presents *just a short list* of my musings.

Hard infrastructure – coordinated on supply side and demand side

1. Climate adaptive infrastructure
2. Distributed Energy Resources (DERs)
 - a. Solar
 - b. In-conduit, low-head hydro
 - c. Hydrogen fuel cell, zero-GHG microturbine
 - d. Solar over water bodies, agrivoltaics
3. Energy storage
 - a. Battery, technologies and types
 - b. Long-duration energy storage
 - c. Water storage (tanks, underground, canal, reservoir, etc.)
 - d. Compressed air, thermal
4. Distribution system expansion
 - a. Transmission voltage interconnections
 - b. Combining multiple loads at together at a single PRI interconnection
 - c. Microgrid platforms
5. EV utilization and charging
6. Energy efficiency activities
 - a. Pumping operations
 - b. T&D loss reduction
 - c. Water banking/transfers

Power and Water Resources Pooling Authority

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GM comments

Soft Infrastructure

1. Legal structure options for PWRPA and projects– reduce regulatory uncertainties for future operations
 - a. Identify and evaluate novel options; no restrictions to following past or existing service models
 - b. Alternative service models for possible future states of the electric industry
 - c. Reduce electricity consumption defined as retail sales
 - d. Reduce the amount of load that is served having PG&E/CAISO T&D costs
 - e. Full utilization of Irrigation District legal authority to redefine deliveries
 - f. Assert PWRPA's status as an Electric Utility under FERC rules
2. Identify, optimize and standardize (thru SOPs)
 - a. Interconnection types and processes, template agreements
 - b. PPA types and template agreements
 - c. Project development options, steps, contracts
3. Strategic partners
 - a. Approved service providers
 - i. Solar generation developer (design, build, own, operate, etc.)
 - ii. Energy storage
 - iii. T&D design and construction
 - b. PG&E as partner
 - i. NEM load aggregation
 - ii. Distributed Energy Resource Management System (DERMS) and CAISO markets
4. Cost concerns and risks
 - a. WAPA
 - i. 2024 BR Contract off-ramp
 - ii. 2025 PG&E Contract renewal
 - iii. More value from, or lower cost for, BR
 - b. PG&E
 - i. Annual WDT increases and DRR increases from extensive undergrounding capital expenses
 - ii. 2025 WAPA Contract renewal
5. Staffing
 - a. Ensure knowledge capture and business continuity
 - b. District staffing assets as service
6. Generation facilities
 - a. FERC Order 2222 aggregated generation sales into CAISO
 - b. Long term contracts
 - c. Ownership and leaseback models
 - d. Inflation Reduction Act direct pay and credit transfers
7. New value streams
 - a. Demand side services
 - b. Virtual Power Plant coordination with PG&E
 - c. Hydrogen production
 - d. EV charging
 - e. Carbon capture & sequestration coordination with ag and/or industry