

**WESTERN AREA POWER ADMINISTRATION  
HYDRO CONDITIONS AND PURCHASE POWER REPORT  
October 2024  
Water Year 2024, Final Report**

	Generation (Megawatt-Hours [MWh])				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
<b>Oct 23</b>	1,525,114	1,601,376	2,009,421	1,623,818	165,241	\$ 9,637,477	\$ 9,247,728	\$ 8,773,482
<b>Nov 23</b>	1,180,375	1,305,668	1,829,897	1,392,997	259,840	\$ 11,881,374	\$ 11,356,081	\$ 11,602,306
<b>Dec 23</b>	1,023,883	1,188,450	1,753,869	1,100,880	566,102	\$ 22,741,034	\$ 22,341,034	\$ 20,141,222
<b>Jan 24</b>	929,659	1,214,819	1,850,641	1,270,922	531,007	\$ 26,105,013	\$ 26,098,429	\$ 40,789,223
<b>Feb 24</b>	938,201	1,340,282	1,734,517	1,491,863	529,860	\$ 12,296,116	\$ 12,244,202	\$ 14,687,766
<b>Mar 24</b>	1,367,636	1,838,788	1,922,208	1,852,432	296,482	\$ 9,474,326	\$ 9,566,185	\$ 6,413,814
<b>Apr 24</b>	1,910,881	2,181,475	2,170,274	2,112,513	116,230	\$ 3,437,137	\$ 2,898,108	\$ 3,382,832
<b>May 24</b>	2,314,817	2,615,675	2,543,138	2,421,238	99,357	\$ 2,664,838	\$ 2,241,107	\$ 3,333,508
<b>Jun 24</b>	2,608,198	2,590,906	2,668,148	2,422,007	112,065	\$ 2,984,618	\$ 3,013,276	\$ 4,979,357
<b>Jul 24</b>	2,077,628	2,099,234	2,943,937	2,176,801	310,895	\$ 11,638,717	\$ 11,675,964	\$ 17,814,092
<b>Aug 24</b>	2,325,395	2,316,553	2,764,910	2,224,973	269,166	\$ 11,642,623	\$ 11,715,338	\$ 15,383,976
<b>Sep 24</b>	1,928,820	2,020,971	2,268,972	1,836,369	225,529	\$ 7,654,935	\$ 7,687,599	\$ 13,037,552
<b>Total</b>	20,130,607	22,314,197	26,459,932	21,926,813	3,481,774	\$ 132,158,208	\$ 130,085,052	\$ 160,339,131

Actual generation as a percentage of average: 82.9%      Cost per MWh: \$46.05

Western Area Power Administration (WAPA) generated a total of 21,927 gigawatt-hours (GWh) from October through September of fiscal year 2024, or 82.9 percent of average. Actual purchase power data is currently available from October through September for all WAPA Regions, and during this period total purchase power was 3,482 GWh and total purchase power expenses were \$160,339,131, which equates to \$46.05 per MWh overall.

The following pages indicate WAPA’s regional snowpack, lake/reservoir inflow and storage, generation, and purchase power expenses. The information related to weather and other conditions are a snapshot in time as of Oct. 1, 2024. Snowpack is reported as snow water equivalent, which is the depth of water that theoretically would result if the entire snowpack melted instantaneously.

**Disclaimer:** The monthly purchase power numbers in this report are used by WAPA’s regions as a forecasting tool; therefore, they do not reflect energy imbalance transactions and other such information that cannot be forecasted. Furthermore, the purchase power numbers have not been verified for financial auditing purposes. Consequently, these numbers will vary from those reported in WAPA’s year-end financial statements, and the latter should be considered the definitive source for WAPA’s purchase power data.



## Colorado River Storage Project

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
<b>Oct 23</b>	0.70	0.58	514.42	324.00	15.01	8.72	218,843	282,700	392,070	285,680	6,105	\$ 0	\$ 0	\$ 260,839
<b>Nov 23</b>	3.40	1.70	474.23	380.00	14.91	8.63	115,541	283,329	379,493	270,178	10,831	\$ 0	\$ 0	\$ 431,851
<b>Dec 23</b>	6.50	4.25	362.96	324.00	14.86	8.44	143,368	323,140	449,721	329,427	15,772	\$ 0	\$ 0	\$ 707,451
<b>Jan 24</b>	9.60	8.26	361.45	283.00	14.98	8.14	46,967	375,412	457,656	376,043	-3,126	\$ 0	\$ 142,903	\$ (190,336)
<b>Feb 24</b>	12.80	12.98	392.01	345.00	15.99	7.94	42,649	338,635	389,089	333,178	113	\$ 0	\$ 0	\$ 3,367
<b>Mar 24</b>	15.50	17.13	666.27	455.00	16.77	7.72	44,385	339,748	412,640	350,973	-2,267	\$ 0	\$ 0	\$ (84,110)
<b>Apr 24</b>	12.94	11.70	1,057.14	733.00	16.74	7.77	67,300	330,917	413,625	355,746	2,054	\$ 0	\$ 0	\$ 34,141
<b>May 24</b>	2.88	4.29	2,337.68	1,421.00	16.30	8.42	220,846	428,044	493,255	449,532	2,891	\$ 0	\$ 0	\$ 60,076
<b>Jun 24</b>	0.00	0.03	2,668.50	2,530.00	16.00	9.75	281,336	380,469	541,219	420,903	2,241	\$ 0	\$ 0	\$ 56,548
<b>Jul 24</b>	0.00	0.00	1,093.88	647.00	15.88	9.67	351,494	422,690	581,235	377,269	77,199	\$ 0	\$ 0	\$ 4,046,937
<b>Aug 24</b>	0.00	0.10	496.08	335.00	15.68	9.38	347,250	432,473	560,126	341,375	113,634	\$ 0	\$ 0	\$ 5,735,648
<b>Sep 24</b>	0.00	0.12	405.88	208.00	15.38	9.14	239,362	339,433	432,354	240,546	96,893	\$ 0	\$ 0	\$ 5,600,009
<b>Total</b>							2,119,341	4,276,990	5,502,483	4,130,851	322,340	\$ 0	\$ 142,903	\$ 16,662,421

Actual generation as a percentage of average: 75.1%

Cost per MWh: \$51.69

### Lake/Reservoir Levels

End of September storage volume for Lake Powell was 9.14 million acre-feet (MAF) or about 39.1 percent of capacity. Lake Powell reservoir inflow for September was 0.208 million acre-feet or 51.2 percent of average. Lake Powell elevation at the end of September was 3,578 feet, or about 122 feet from the maximum reservoir level and 88 feet from the minimum generation level.

### Weather and Other Conditions

The release volume from Glen Canyon Dam for water year 2024 will be 7.48 million acre-feet, which is below average. Early forecasts point to the same release volume for WY 2025. CRSP has experienced higher-than-normal purchased power expense due to an ongoing bypass experiment to cool the waters downstream from Glen Canyon dam thereby disadvantaging spawning of the Small Mouth Bass (SMB), an invasive species. This SMB bypass experiment is expected to end late October or early November. Firming purchase power costs through September were \$16,662,421. Purchase power in the region was available and prices per megawatt-hour over the last month have averaged in the high \$50s for on-peak and off-peak.



## Desert Southwest Region

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 23	0.70	0.58	60.19	31.00	20.00	10.92	269,100	261,105	373,406	263,326	18,943	\$ 2,412,331	\$ 2,412,331	\$ 1,291,913
Nov 23	3.40	1.70	54.10	41.00	19.96	10.96	276,100	257,555	360,237	259,438	21,443	\$ 2,973,741	\$ 2,973,741	\$ 1,291,512
Dec 23	6.50	4.25	72.70	74.00	19.97	11.25	171,650	181,445	360,088	183,271	33,261	\$ 5,214,589	\$ 5,214,589	\$ 1,704,626
Jan 24	9.60	8.26	92.00	68.00	20.03	11.67	219,550	183,265	383,339	182,113	38,984	\$ 4,920,163	\$ 4,920,163	\$ 3,129,234
Feb 24	12.80	12.98	104.79	87.00	19.98	11.96	195,900	183,345	382,035	188,654	32,989	\$ 2,436,773	\$ 2,436,773	\$ 1,412,259
Mar 24	15.50	17.13	104.79	59.00	19.78	11.88	434,700	429,765	523,377	428,729	34,396	\$ 1,743,729	\$ 1,743,729	\$ 999,204
Apr 24	12.94	11.70	85.67	78.00	19.68	11.64	493,750	489,495	566,244	474,958	34,346	\$ 873,355	\$ 873,355	\$ 1,311,362
May 24	2.88	4.29	59.22	24.00	19.89	11.24	538,250	534,910	568,733	525,015	28,227	\$ 501,700	\$ 501,700	\$ 1,151,256
Jun 24	0.00	0.03	26.63	20.00	20.40	10.94	488,150	493,225	533,354	489,522	30,682	\$ 1,474,787	\$ 1,474,787	\$ 1,865,363
Jul 24	0.00	0.00	65.50	28.00	20.38	10.83	397,900	398,310	539,958	398,338	47,653	\$ 4,579,316	\$ 4,579,316	\$ 5,196,008
Aug 24	0.00	0.10	99.19	82.00	20.24	10.94	322,550	318,485	500,723	319,451	67,009	\$ 7,915,934	\$ 7,915,934	\$ 4,598,158
Sep 24	0.00	0.12	86.76	68.00	20.05	10.86	279,750	280,830	424,032	283,193	64,030	\$ 4,411,353	\$ 4,411,353	\$ 3,670,200
<b>Total</b>							4,087,350	4,011,735	5,515,526	3,996,008	451,963	\$ 39,457,771	\$ 39,457,771	\$ 27,621,095

Actual generation as a percentage of average: 72.5%

Cost per MWh: \$61.11

### Lake/Reservoir Levels

Aggregate system storage for the Lower Colorado River Basin, or Lakes Mead, Mohave, and Havasu, was 10.864 million acre-feet (MAF) at the end of September, or 38 percent of the Lower Basin capacity. The Lower Basin tributary inflow into Lake Mead for September was 68,000 acre-feet, or about 84 percent of the five-year average for the month. The total side inflow into Lake Mead for WY 2024 was 661,000 acre-feet, which represents a 51 percent decrease from last year and 51 percent of the normal annual side inflow. Lake Mead's elevation at the end of September was 1,063.71 feet, or 156 feet below full storage elevation and 113.7 feet above the minimum generation elevation for Hoover Dam. For WY 2024, Lake Mead's elevation peaked in February at 1,076.52 feet (10.7 feet above the WY 2023 peak elevation) and the minimum elevation of 1,061.38 feet occurred in July.

### Weather and Other Conditions

The Desert Southwest Region's hydrology, or the Lower Colorado River Basin, is mostly dependent on the Colorado River Basin snowpack and precipitation above Lake Powell. As of September, precipitation is currently 81 percent of average. Market prices for September averaged \$48 per megawatt-hour (MWh) for firm on-peak and \$28 per MWh for firm off-peak.



## Rocky Mountain Region

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 23	0.00	0.00	143.40	197.20	3.87	4.41	75,593	85,593	97,400	71,843	90,389	\$ 3,472,280	\$ 3,072,280	\$ 3,840,631
Nov 23	3.70	4.00	124.10	143.00	3.97	4.45	59,796	69,796	110,000	68,764	91,236	\$ 4,096,160	\$ 3,696,160	\$ 4,255,679
Dec 23	11.70	8.00	102.10	116.00	4.00	4.44	111,587	121,587	123,500	64,556	102,944	\$ 2,620,520	\$ 2,220,520	\$ 5,354,587
Jan 24	20.30	14.70	100.70	96.90	3.87	4.37	55,114	65,114	122,100	62,620	106,220	\$ 4,699,440	\$ 4,299,440	\$ 11,801,536
Feb 24	29.00	24.40	98.40	118.00	3.88	4.39	56,504	66,504	111,600	58,078	70,595	\$ 3,219,840	\$ 2,819,840	\$ 3,351,470
Mar 24	38.00	36.30	158.60	161.70	4.41	4.25	84,797	94,797	128,900	78,048	68,239	\$ 2,580,120	\$ 2,180,120	\$ 1,928,015
Apr 24	45.90	49.10	254.90	323.90	3.80	4.43	156,375	166,375	144,600	183,740	35,653	\$ 801,000	\$ 401,000	\$ 428,988
May 24	45.00	43.40	764.80	600.40	4.36	4.59	185,243	274,243	196,800	258,762	21,721	\$ 560,000	\$ 0	\$ 205,026
Jun 24	13.10	18.90	1,202.70	1,292.90	4.91	5.14	295,012	305,012	246,200	292,242	2,457	\$ 0	\$ 0	\$ 64,457
Jul 24	0.00	0.00	539.00	841.80	4.60	4.67	257,234	267,234	261,200	254,645	17,781	\$ 190,640	\$ 0	\$ 1,099,823
Aug 24	0.00	0.00	186.10	138.40	4.11	4.20	221,095	231,095	214,800	234,453	14,114	\$ 0	\$ 0	\$ 980,550
Sep 24	0.00	0.00	127.10	151.10	3.89	4.42	160,008	170,008	141,600	145,414	17,963	\$ 0	\$ 0	\$ 267,622
<b>Total</b>							1,718,358	1,917,358	1,898,700	1,773,166	639,312	\$ 22,240,000	\$ 18,689,360	\$ 33,578,384

Actual generation as a percentage of average: 93.4%

Cost per MWh: \$52.52

### Lake/Reservoir Content

At the end of September reservoir inflows were at 119 percent of average, and storage is at 114 percent of average.

### Weather and Other Conditions

LAP's hydrologic conditions can vary from one river basin and watershed to another. The latest National Weather Service forecast indicates November through January temperatures have equal chances for above average and below average in lower Montana, and temperatures are leaning to above average in Wyoming and Colorado. The same forecast indicates precipitation will have equal chances for above average and below average in lower Montana and Wyoming, and precipitation is leaning to below average in Colorado. Fall and winter generation in the Colorado River Basin, North Platte Basin, and Big Horn Basin is forecasted to be average.

*Note: The Rocky Mountain Region's most recent reported actual generation is an estimated value.*



## Sierra Nevada Region

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 23	N/A	N/A	300.00	270.00	5.15	6.81	128,000	143,000	163,000	196,031	37,640	\$ 2,822,422	\$ 2,822,422	\$ 2,822,422
Nov 23	N/A	N/A	418.00	382.00	5.12	6.71	60,000	10,000	104,000	76,421	39,504	\$ 2,907,599	\$ 2,907,599	\$ 2,907,599
Dec 23	25.00	2.50	834.00	580.00	5.46	6.85	53,000	18,000	143,000	38,932	41,458	\$ 3,039,643	\$ 3,039,643	\$ 3,039,643
Jan 24	26.25	8.40	1,128.00	1,246.00	6.14	7.52	53,000	53,000	163,000	68,432	37,274	\$ 2,733,880	\$ 2,733,880	\$ 2,747,727
Feb 24	26.43	18.50	1,222.00	1,904.00	6.51	8.10	50,000	175,000	195,000	409,679	34,797	\$ 2,560,400	\$ 2,560,400	\$ 2,569,652
Mar 24	26.18	28.80	1,524.00	1,797.00	7.20	8.87	91,000	291,000	207,000	327,709	37,486	\$ 2,730,355	\$ 2,730,355	\$ 2,751,542
Apr 24	24.80	18.60	1,350.00	1,426.00	7.65	9.34	267,000	291,000	288,000	307,508	27,223	\$ 1,292,140	\$ 1,292,140	\$ 1,336,667
May 24	7.50	3.30	1,101.00	1,277.00	7.62	9.45	458,000	508,000	442,000	409,721	27,104	\$ 1,358,230	\$ 1,358,230	\$ 1,364,416
Jun 24	N/A	N/A	760.00	567.00	7.64	8.91	559,000	454,000	440,000	391,958	26,000	\$ 1,318,700	\$ 1,318,700	\$ 1,318,700
Jul 24	N/A	N/A	427.00	363.00	6.58	7.94	411,000	371,000	524,000	469,129	37,645	\$ 3,286,156	\$ 3,286,156	\$ 3,301,364
Aug 24	N/A	N/A	338.00	342.00	5.96	7.20	451,000	376,000	402,000	374,580	37,522	\$ 3,299,616	\$ 3,299,616	\$ 3,318,329
Sep 24	N/A	N/A	307.00	292.00	5.56	6.77	294,000	284,000	269,000	241,562	36,056	\$ 3,164,520	\$ 3,164,520	\$ 3,171,196
<b>Total</b>							2,875,000	2,974,000	3,340,000	3,311,662	419,709	\$ 30,513,662	\$ 30,513,662	\$ 30,649,258

Actual generation as a percentage of average: 99.2%

Cost per MWh: \$73.03

### Lake/Reservoir Content

As of September 30, reservoir storage was 130 percent of the 15-year average for Trinity, 113 percent for Shasta, 99 percent for Folsom, and 138 percent for New Melones. Accumulated inflow was 139 percent of the 15-year average for Trinity, 116 percent for Shasta, 87 percent for Folsom, and 87 percent for New Melones.

### Weather and Other Conditions

Northern Sierra precipitation in July was 0.04 inches or 24 percent of average, in August it was 0.77 inches or 301 percent of average, and in September it was 0.21 inches or 27 percent average. The water year ended at 48.22 inches or 96 percent of the annual average of 50.2 inches. There is discussion of a weak La Nina being a possibility. The Sacramento Valley 40-30-30 index at the 50 percent exceedance level is "above normal," as well as at the 90 percent exceedance level.

*Note: The Sierra Nevada Region's average generation is based upon long-term modeling done for its "Green Book." The region does not project purchase power expenses for dry conditions, and its most probable expenses are based upon term purchases of 35 to 65 percent of projected power needs, with the difference being left to day-ahead markets after project pumping and generation have been scheduled.*



## Upper Great Plains Region

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 23	1.20	1.00	8,188.00	7,794.25	56.17	55.02	833,578	828,978	983,545	806,938	12,164	\$ 930,443	\$ 940,695	\$ 557,677
Nov 23	3.80	1.80	7,527.00	7,053.46	55.03	54.19	668,938	684,988	876,167	718,196	96,826	\$ 1,903,874	\$ 1,778,581	\$ 2,715,665
Dec 23	7.10	3.30	6,425.00	5,000.04	54.44	54.53	544,278	544,278	677,560	484,694	372,667	\$ 11,866,282	\$ 11,866,282	\$ 9,334,915
Jan 24	10.30	5.20	6,664.00	4,971.07	54.34	54.08	555,028	538,028	724,546	581,715	351,655	\$ 13,751,530	\$ 14,002,043	\$ 23,301,062
Feb 24	13.10	8.30	6,297.00	5,688.02	54.63	55.25	593,148	576,798	656,793	502,273	391,366	\$ 4,079,103	\$ 4,427,189	\$ 7,351,018
Mar 24	0.00	11.30	8,247.00	6,819.79	0.00	55.52	712,754	683,478	650,292	666,973	158,628	\$ 2,420,122	\$ 2,911,981	\$ 819,163
Apr 24	0.00	10.30	8,205.00	8,040.46	0.00	55.61	926,456	903,688	757,805	790,561	16,954	\$ 470,642	\$ 331,613	\$ 271,674
May 24	0.00	6.50	9,841.00	8,560.50	0.00	56.69	912,478	870,478	842,350	778,208	19,414	\$ 244,908	\$ 381,177	\$ 552,734
Jun 24	0.00	0.00	11,857.00	9,828.01	0.00	58.42	984,700	958,200	907,375	827,381	50,685	\$ 191,131	\$ 219,789	\$ 1,674,289
Jul 24	0.00	0.00	10,840.00	6,195.77	0.00	58.24	660,000	640,000	1,037,544	677,419	130,617	\$ 3,582,605	\$ 3,810,492	\$ 4,169,960
Aug 24	0.00	0.00	9,862.00	8,079.01	0.00	56.72	983,500	958,500	1,087,261	955,114	36,887	\$ 427,073	\$ 499,788	\$ 751,291
Sep 24	0.00	0.00	8,816.00	8,112.80	0.00	54.97	955,700	946,700	1,001,986	925,654	10,587	\$ 79,062	\$ 111,726	\$ 328,525
<b>Total</b>							9,330,558	9,134,114	10,203,224	8,715,126	1,648,450	\$ 39,946,776	\$ 41,281,356	\$ 51,827,973

Actual generation as a percentage of average: 85.4%

Cost per MWh: \$31.44

### Lake/Reservoir Content

The yearly runoff forecast for the Missouri River Basin as of October 1 was 23.5 million acre-feet (MAF) or 91 percent of average. Runoff above Sioux City for September was 0.8 MAF or 66 percent of average. System storage as of October 22 was 52.1 MAF.

### Weather and Other Conditions

Since June 30, the mountain snow water equivalent (SWE) above Fort Peck and Fort Peck to Garrison reaches have remained at zero. The reach above Fort Peck peaked April 9, at 11.6 inches or 73 percent of average, and the Fort Peck to Garrison reach peaked on April 10 at 12 inches or 82 percent of average. As of October 15, moderate and severe drought conditions expanded in the south and west portions of North Dakota, most of South Dakota, Nebraska, and Kansas. Moderate and severe drought also expanded over eastern Colorado, as well as across eastern Wyoming. The 90- to 180-day averages outlook shows equal changes of above normal or below normal temperatures and precipitation across most the region.

*Note: The Upper Great Plains Region reports 50 percent share of Yellowtail Dam generation while Rocky Mountain Region reports the snowpack, inflow, content, and remaining share of generation. Asterisks indicate that actual purchase power data is not available for the month.*

