

**WESTERN AREA POWER ADMINISTRATION  
HYDRO CONDITIONS AND PURCHASE POWER REPORT  
March 2024**

	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	566,215	\$ 22,741,034	\$ 22,341,034	\$ 20,147,037
<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	1,158,685				
<b>Mar 24</b>								
<b>Apr 24</b>								
<b>May 24</b>								
<b>Jun 24</b>								
<b>Jul 24</b>								
<b>Aug 24</b>								
<b>Sep 24</b>								
<b>Total</b>	5,597,233	6,650,594	9,178,345	6,547,302	1,522,303	\$ 70,364,898	\$ 69,043,273	\$ 81,312,048
	Actual generation as a percentage of average: 71.3%					Cost per MWh: \$53.41		

Western Area Power Administration (WAPA) generated a total of 6,547 gigawatt-hours (GWh) from October through February of fiscal year 2024, or 71.3 percent of average. This total does not include actual CRSP generation in February. Actual purchase power data is currently available from October through January for all of WAPA’s Regions, and during this period total purchase power was 1,522 GWh and total purchase power expenses were \$81,312,048, which equates to \$53.41 per MWh overall.

The following pages indicate WAPA’s regional snowpack, lake/reservoir inflow and storage, generation, and purchase power expenses. Snowpack is reported as snow water equivalent, which is the depth of water that theoretically would result if the entire snowpack melted instantaneously.

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
Oct 23	0.70	0.58	514.42	324.00	15.01	8.72	218,843	282,700	392,070	285,680	6,105	\$ 0	\$ 0	\$ 260,838.56
Nov 23	3.40	1.70	474.23	380.00	14.91	8.63	115,541	283,329	379,493	270,178	10,831	\$ 0	\$ 0	\$ 431,850.92
Dec 23	6.50	4.25	362.96	324.00	14.86	8.44	143,368	323,140	449,721	329,427	15,772	\$ 0	\$ 0	\$ 707,450.97
Jan 24	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	\$ (190,336.14)
Feb 24	12.80	12.98	392.01	345.00	15.99	7.94	42,649	338,635	389,089	*	113	\$ 0	\$ 0	\$ 3,367
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							567,369	1,603,215	2,068,029	1,261,328	29,695	\$ 0	\$ 142,903	\$ 1,213,171

Actual generation as a percentage of average: 61.0%

Cost per MWh: \$40.85

\*Actual generation data for February unavailable as of April 2, 2024.

### Lake/Reservoir Levels

End of February storage volume for Lake Powell was 7.94 million acre-feet (MAF) or about 34 percent of capacity. Lake Powell reservoir inflow for February was 345,000 acre-feet or 95 percent of average. Lake Powell elevation at the end of February was about 3,562 feet, or about 138 feet from maximum reservoir level and 72 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. With this release volume, it is expected CRSP generation in water year 2024 will be below average. Firming purchase power costs through February were \$1,213,171. CRSP is forecasting little to no purchases will be required over the next few months to meet obligations. Purchase power in the region was generally available and prices over the last month have averaged in the low \$30s both 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	33,374	\$ 5,214,589	\$ 5,214,589	\$ 1,710,441
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	32,965	\$ 2,436,773	\$ 2,436,773	\$ 1,411,232
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							1,132,300	1,066,715	1,859,105	1,076,802	145,709	\$ 17,957,597	\$ 17,957,597	\$ 8,834,332

Actual generation as a percentage of average: 57.9%

Cost per MWh: \$60.63

### Lake/Reservoir Levels

Aggregate system storage for the Lower Colorado River Basin, or Lakes Mead, Mohave, and Havasu, was 11.96 million acre-feet (MAF) at the end of February, or 42 percent of the Lower Basin capacity. The Lower Basin tributary inflow into Lake Mead for February was 87,000 acre-feet, or about 128 percent of the five-year average for the month. The total side inflow into Lake Mead for WY 2024 is projected to be 852,000 acre-feet, which represents a 36 percent decrease from last year and 66 percent of the normal annual side inflow. Lake Mead’s elevation at the end of February was 1,079.52 feet, or 140.12 feet below full storage elevation and 129.52 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 1,059.3 feet is projected to occur in September.

### 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. The precipitation is currently 104 percent of average and the snowpack is 110 percent of median.



## 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														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							358,594	408,594	564,600	325,861	461,384	\$ 18,108,240	\$ 16,108,240	\$ 28,603,903

Actual generation as a percentage of average: 57.7%

Cost per MWh: \$62.00

### Lake/Reservoir Content

At the end of February reservoir inflows were at 120 percent of average, and storage is at 113 percent of average.

### Weather and Other Conditions

LAP's hydrologic conditions can vary from one river basin and watershed to another. Looking at the end of March, the snowpack is average for the Wyoming Colorado East Slope areas. The latest National Weather Service forecast indicates April through May temperatures will have equal probability to be either above or below average in Colorado and Wyoming. However, in the Southwestern Area of Colorado temperature forecast is looking to be slightly above average. The same forecast indicates precipitation will have an equal chance to be above and below average in Wyoming and Colorado. Spring generation in the North Platte Basin and the Colorado River Basin is forecasted to be average, while Big Horn Basin is forecasted to be slightly below 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	22.84	15.30	1,222.00	1,904.00	6.51	8.10	50,000	175,000	195,000	409,679	34,800	\$ 2,560,400	\$ 2,560,400	\$ 2,560,400
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							344,000	399,000	768,000	789,495	190,676	\$ 14,063,945	\$ 14,063,945	\$ 14,077,791

Actual generation as a percentage of average: 102.8%

Cost per MWh: \$73.83

### Lake/Reservoir Content

As of February 29, reservoir storage was 119 percent of the 15-year average for Trinity, 122 percent for Shasta, 121 percent for Folsom, and 137 percent for New Melones. Accumulated inflow was 167 percent of the 15-year average for Trinity, 124 percent for Shasta, 73 percent for Folsom, and 89 percent for New Melones.

### Weather and Other Conditions

December had 6.96 inches or 79 percent of average, January had 9.93 inches or 113 percent average, and February had 12 inches or 146 percent average. The Sierra snowpack is assumed to reach its peak April 1. Currently, the snowpack has reached 67 percent of that peak. The water year total is now at 32.77 inches or 65 percent of the annual average of 50 inches. Based on March 1 conditions, the Sacramento Valley 40-30-30 index at the 50 percent exceedance level is "above normal" while the 90 percent exceedance level is "below normal."

*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	1,727.40	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	1,719.59	593,148	576,798	656,793	502,273	*	\$ 4,079,103	\$ 4,427,189	*
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							3,194,970	3,173,070	3,918,611	3,093,816	833,312	\$ 32,531,233	\$ 33,014,790	\$ 35,909,319

Actual generation as a percentage of average: 79.0% Cost per MWh: \$43.09

### Lake/Reservoir Content

The yearly runoff forecast for the Missouri River Basin as of March 1 was 17 million acre-feet (MAF) or 66 percent of average. Runoff above Sioux City for February was 1.8 MAF or 161 percent of average. System storage as of March 26 was 54.2 MAF.

### Weather and Other Conditions

On March 27, the mountain snow water equivalent in the total above Fort Peck reach was 10.7 inches or 72 percent of average, and the mountain snow water equivalent in the Fort Peck to Garrison reach was 10.8 inches or 81 percent of average. The normal peak for both reaches occurs on or around April 17. Much of the region experienced precipitation, including late-season snow, in turn lessening the moderate to severe drought conditions in parts of the Dakotas, northern Kansas, and eastern sections of Montana and Nebraska. Specific areas, especially Southern Kansas, are still experiencing abnormal dryness and moderate drought. The 90- to 180-day averages outlook shows normal to slightly above normal temperatures and anticipates normal precipitation.

*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.*

