

**WESTERN AREA POWER ADMINISTRATION  
HYDRO CONDITIONS AND PURCHASE POWER REPORT  
February 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	178,410	\$ 9,637,477	\$ 9,247,728	\$ 9,671,575
<b>Nov 23</b>	1,180,375	1,305,668	1,829,897	1,392,997	283,817	\$ 11,881,374	\$ 11,356,081	\$ 13,046,455
<b>Dec 23</b>	1,023,883	1,188,450	1,753,869	1,100,880	588,389	\$ 22,741,034	\$ 22,341,034	\$ 21,338,992
<b>Jan 24</b>	929,659	1,214,819	1,850,641	1,270,922				
<b>Feb 24</b>								
<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>	4,659,031	5,310,312	7,443,828	5,388,617	1,050,616	\$ 44,259,885	\$ 42,944,843	\$ 44,057,022
	Actual generation as a percentage of average: 72.4%					Cost per MWh: \$41.93		

Western Area Power Administration (WAPA) generated a total of 5,389 gigawatt-hours (GWh) from October through January of fiscal year 2024, or 72.4 percent of average. Actual purchase power data is currently available from October through December for all of WAPA’s Regions, and during this period total purchase power was 1,051 GWh and total purchase power expenses were \$44,057,022, which equates to \$41.93 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														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							524,719	1,264,580	1,678,940	1,261,328	29,582	\$ 0	\$ 142,903	\$ 1,209,804

Actual generation as a percentage of average: 75.1%

Cost per MWh: \$40.90

### Lake/Reservoir Levels

End of January storage volume for Lake Powell was 8.14 million acre-feet (MAF) or about 35 percent of capacity. Lake Powell reservoir inflow for January was 283,000 acre-feet or 84 percent of average. Lake Powell elevation at the end of January was about 3,565 feet, or about 135 feet from maximum reservoir level and 77 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 for the first quarter of water year 2024 were \$1,209,804. 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 mid \$30s on-peak to low \$30s 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	32,112	\$ 2,412,331	\$ 2,412,331	\$ 2,190,006
Nov 23	3.40	1.70	54.10	41.00	19.96	10.96	276,100	257,555	360,237	259,438	45,420	\$ 2,973,741	\$ 2,973,741	\$ 2,735,661
Dec 23	6.50	4.25	72.70	74.00	19.97	11.25	171,650	181,445	360,088	183,271	55,548	\$ 5,214,589	\$ 5,214,589	\$ 2,902,396
Jan 24	9.60	8.26	92.00	68.00	20.03	11.67	219,550	183,265	383,339	182,113	38,990	\$ 4,920,163	\$ 4,920,163	\$ 3,168,717
Feb 24														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							936,400	883,370	1,477,070	888,148	172,070	\$ 15,520,824	\$ 15,520,824	\$ 10,996,780

Actual generation as a percentage of average: 60.1%

Cost per MWh: \$63.91

Lake/Reservoir Levels

Aggregate system storage for the Lower Colorado River Basin, or Lakes Mead, Mohave, and Havasu, was 11.67 MAF at the end of January, or 41 percent of the Lower Basin capacity. The Lower Basin tributary inflow into Lake Mead for December was 68,000 acre-feet, or about 94 percent of the five-year average for the month. The total side inflow into Lake Mead for WY 2024 is projected to be 711,000 acre-feet, which represents a 47 percent decrease from last year and 55 percent of the normal annual side inflow. Lake Mead’s elevation at the end of January was 1,072.14 feet, or 146.97 feet below full storage elevation and 122.67 feet above the minimum generation elevation for Hoover Dam. Lake Mead’s projected peak elevation for WY 2024 is anticipated in February at 1,076.14 feet (10.32 feet above the WY 2023 peak elevation) and the minimum elevation of 1,057.5 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 97 percent of average and the snowpack is 99 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														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							302,090	342,090	453,000	267,783	390,789	\$ 14,888,400	\$ 13,288,400	\$ 25,252,433

Actual generation as a percentage of average: 59.1%

Cost per MWh: \$64.62

### Lake/Reservoir Content

At the end of January reservoir inflows were at 96 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 February, the snowpack is below average for the Wyoming area and the Colorado East Slope area is average. The latest National Weather Service forecast indicates March through May temperatures will have equal probability to be either above or below average in Colorado and a probability of above average in Wyoming. 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 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	322.00	189.00	4.94	2.82	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	398.00	243.00	4.92	2.76	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	822.00	891.00	5.25	3.34	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	1,121.00	2,356.00	5.65	4.82	53,000	53,000	163,000	68,432	37,274	\$ 2,733,880	\$ 2,733,880	\$ 2,733,880
Feb 24														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							294,000	224,000	573,000	379,815	155,876	\$ 11,503,545	\$ 11,503,545	\$ 11,503,545

Actual generation as a percentage of average: 66.3%      Cost per MWh: \$73.80

### Lake/Reservoir Content

As of January 31, reservoir storage was 110 percent of the 15-year average for Trinity, 130 percent for Shasta, 119 percent for Folsom, and 143 percent for New Melones. Accumulated inflow was 147 percent of the 15-year average for Trinity, 98 percent for Shasta, 61 percent for Folsom, and 88 percent for New Melones.

### Weather and Other Conditions

November had 3.12 inches or 50 percent of monthly average, December had 6.96 inches or 79 percent of average, and January had 9.93 inches or 113 percent average. Snowpack statewide is much improved. The water year total is now at 20.78 inches or 41 percent of the annual average of 50 inches. Based on February 1 conditions, the Sacramento Valley 40-30-30 index at the 50 percent exceedance level is "below normal" while the 90 percent exceedance level is "dry."

*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	*	\$ 13,751,530	\$ 14,002,043	*
Feb 24														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
<b>Total</b>							2,601,822	2,596,272	3,261,818	2,591,543	481,657	\$ 28,452,129	\$ 28,587,601	\$ 12,608,257

Actual generation as a percentage of average: 79.5%      Cost per MWh: \$26.18

### Lake/Reservoir Content

The yearly runoff forecast for the Missouri River Basin as of February 1 was 19 MAF or 73 percent of average. Runoff above Sioux City for January was 0.4 MAF or 56 percent of average. System storage as of February 27 was 53.6 MAF.

### Weather and Other Conditions

On February 25, the mountain snow water equivalent in the total above Fort Peck reach was 7.8 inches or 64 percent of average, and the mountain snow water equivalent in the Fort Peck to Garrison reach was 7.7 inches or 69 percent of average. The normal peak for both reaches occurs on or around April 17. Abnormally dry and moderate drought conditions expanded in the Dakotas and eastern Kansas based on the 1- to 2-month dryness and unusually warm temperatures. Wyoming, with very low precipitation and very low mountain snow water content, also saw expansion of moderate to severe drought conditions. The 90- to 180-day averages outlook shows above normal temperatures and equal chances of above or below 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.*

