WESTERN AREA POWER ADMINSTRATION
HYDRO CONDITIONS AND PURCHASE POWER REPORT
January 2024

	Generation (Megawatt-Hours [MWh])				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 23	1,525,114	1,601,376	2,009,421	1,623,818	178,822	$ 9,637,477	$ 9,247,728	$ 9,671,575
Nov 23	1,180,375	1,305,668	1,829,897	1,392,997	282,440	$ 11,881,374	$ 11,356,081	$ 13,046,455
Dec 23	1,023,883	1,188,450	1,753,869	1,100,880				
Jan 24								
Feb 24								
Mar 24								
Apr 24								
May 24								
Jun 24								
Jul 24								
Aug 24								
Sep 24								
Total	3,729,373	4,095,494	5,593,187	4,117,695	461,262	$ 21,518,851	$ 20,603,809	$ 22,718,030
	Actual generation as a percentage of average:			73.6%			Cost per MWh:	$49.25

Western Area Power Administration (WAPA) generated a total of 4,118 gigawatt-hours (GWh) from October through December of fiscal year 2024, or 73.6 percent of average. Actual purchase power data is currently available from October through November for all of WAPA's Regions, and during this period total purchase power was 461 GWh and total purchase power expenses were $22,718,030, which equates to $49.25 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	$260,839
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	$431,851
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	$707,451
Jan 24														
Feb 24														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
Total							477,753	889,169	1,221,284	885,285	32,708	$ 0	$ 0	$ 1,400,140
							Actual generation as a percentage of average:			72.5%			Cost per MWh:	$42.81

Lake/Reservoir Levels

End of December storage volume for Lake Powell was 8.44 million acre-feet (MAF) or about 36 percent of capacity. Lake Powell reservoir inflow for December was 324,000 acre-feet or 101 percent of average. Lake Powell elevation at the end of December was about 3,569 feet, or about 131 feet from maximum reservoir level and 79 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 generation in water year 2024 will be below average. Firming purchase power costs for the first quarter of water year 2024 were $1,400,140. Purchase power in the region was generally available and prices over the last month have averaged in the low $80s 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	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														
Feb 24														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
Total							716,850	700,105	1,093,731	706,035	133,080	$ 10,600,661	$ 10,600,661	$ 7,828,063
							Actual generation as a percentage of average:			64.6%			Cost per MWh:	$58.82

Lake/Reservoir Levels

Aggregate system storage for the Lower Colorado River Basin, or Lakes Mead, Mohave, and Havasu, was 11.25 MAF at the end of November, or 39 percent of the Lower Basin capacity. The Lower Basin tributary inflow into Lake Mead for December was 74,000 acre-feet, or about 102 percent of the five-year average for the month. The total side inflow into Lake Mead for WY 2024 is projected to be 718,000 acre-feet, which represents a 46 percent decrease from last year and 55 percent of the normal annual side inflow. Lake Mead's elevation at the end of December was 1,068.05 feet, or 148.59 feet below full storage elevation and 118.05 feet above the minimum generation elevation for Hoover Dam. Lake Mead's projected peak elevation for WY 2024 is anticipated in February at 1,073.32 feet (7.5 feet above the WY 2023 peak elevation) and the minimum elevation of 1,054.67 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 89 percent of average and the snowpack is 94 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														
Feb 24														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
Total							246,976	276,976	330,900	205,163	284,569	$ 10,188,960	$ 8,988,960	$ 13,450,897
							Actual generation as a percentage of average:			62.0%			Cost per MWh:	$47.27

Lake/Reservoir Content

At the end of December reservoir inflows were at 114 percent of average, and storage is at 110 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 January, the snowpack is below average for the Wyoming area and the Colorado East Slope area is slightly below average. The latest National Weather Service forecast indicates February through April temperatures will have equal probability to be either above or below average in Colorado and Wyoming. The same forecast indicates precipitation will have an equal chance to be above and below average in the Wyoming area and in the Colorado area. Winter generation in the, North Platte Basin, and Big Horn Basin is forecasted to be average. However, winter generation in the Colorado River Basin will be well below average due to an urgent equipment repair.

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	38,052	$ 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	38,127	$ 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	44,132	$ 3,039,643	$ 3,039,643	$ 3,039,643
Jan 24														
Feb 24														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
Total							241,000	171,000	410,000	311,384	120,311	$ 8,769,665	$ 8,769,665	$ 8,769,665
							Actual generation as a percentage of average:			75.9%			Cost per MWh:	$72.89

Lake/Reservoir Content

As of December 31, reservoir storage was 101 percent of the 15-year average for Trinity, 127 percent for Shasta, 112 percent for Folsom, and 151 percent for New Melones. Accumulated inflow was 98 percent of the 15-year average for Trinity, 80 percent for Shasta, 59 percent for Folsom, and 109 percent for New Melones.

Weather and Other Conditions

October had 0.77 inches of precipitation, November had 3.12 inches or 50 percent of average for the month, and December had 6.96 inches or 79 percent of average for the month. Snowpack is off to a very slow start; At the end of December the snowpack was at 22 percent of the average. However, the last half of January saw some storms that may indicate improvement.

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	*	$ 11,866,282	$ 11,866,282	*
Jan 24														
Feb 24														
Mar 24														
Apr 24														
May 24														
Jun 24														
Jul 24														
Aug 24														
Sep 24														
Total							2,046,794	2,058,244	2,537,272	2,009,828	108,990	$ 14,700,599	$ 14,585,558	$ 3,273,342
							Actual generation as a percentage of average:			79.2%			Cost per MWh:	$30.03

Lake/Reservoir Content

The yearly runoff forecast for the Missouri River Basin as of January 1 was 30 MAF or 118 percent of average. Runoff above Sioux City for December was 1.3 MAF or 172 percent of average. System storage as of January 23 was 52.4 MAF.

Weather and Other Conditions

On January 24, the mountain snow water equivalent in the total above Fort Peck reach was 5.1 inches or 55 percent of average, and the mountain snow water equivalent in the Fort Peck to Garrison reach was 5.3 inches or 64 percent of average. The normal peak for both reaches occurs on or around April 17. The wetter weather pattern over the past several months has improved the existing drought in eastern Nebraska and Kansas. However, there are still long-term issues that go out 24-36 months or more in much of the central Plains. Northern North Dakota and eastern Wyoming saw abnormally dry conditions expand. The 90- to 180-day averages outlook shows above normal temperatures and average to above 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.