WESTERN AREA POWER ADMINSTRATION
HYDRO CONDITIONS AND PURCHASE POWER REPORT
July 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	165,241	$ 9,637,477	$ 9,247,728	$ 8,773,482
Nov 23	1,180,375	1,305,668	1,829,897	1,392,997	259,840	$ 11,881,374	$ 11,356,081	$ 11,602,306
Dec 23	1,023,883	1,188,450	1,753,869	1,100,880	566,215	$ 22,741,034	$ 22,341,034	$ 20,147,037
Jan 24	929,659	1,214,819	1,850,641	1,270,922	531,007	$ 26,105,013	$ 26,098,429	$ 40,789,223
Feb 24	938,201	1,340,282	1,734,517	1,491,863	529,836	$ 12,296,116	$ 12,244,202	$ 14,686,739
Mar 24	1,367,636	1,838,788	1,922,208	1,852,432	296,342	$ 9,474,326	$ 9,566,185	$ 6,409,747
Apr 24	1,910,881	2,181,475	2,170,274	2,112,513	116,230	$ 3,437,137	$ 2,898,108	$ 2,724,044
May 24	2,314,817	2,615,675	2,543,138	2,421,238	99,357	$ 2,664,838	*	$ 2,887,645
Jun 24	2,608,198	2,590,906	2,668,148	*				
Jul 24								
Aug 24								
Sep 24								
Total	13,798,764	15,877,439	18,482,113	13,266,662	2,564,068	$ 98,237,315	$ 93,751,768	$ 108,020,223
	Actual generation as a percentage of average:			71.8%			Cost per MWh:	$42.13

Western Area Power Administration (WAPA) generated a total of 13,267 gigawatt-hours (GWh) from October through May of fiscal year 2024, or 71.8 percent of average for June. The percent of average is low because actual generation for Colorado River Storage Project in June is not yet available. Actual purchase power data is currently available from October through May for all of WAPA's Regions, and during this period total purchase power was 2,564 GWh and total purchase power expenses were $108,020,223, which equates to $42.13 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	333,178	113	$ 0	$ 0	$ 3,367
Mar 24	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)
Apr 24	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
May 24	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
Jun 24	0.00	0.03	2,668.50	2,530.00	16.00	9.75	281,336	380,469	541,219	*	2,241	$ 0	$ 0	$ 56,548
Jul 24														
Aug 24														
Sep 24														
Total							1,181,235	3,082,394	3,928,768	2,750,757	34,614	$ 0	$ 142,903	$ 1,279,826
							Actual generation as a percentage of average:			70.0%			Cost per MWh:	$36.97

Lake/Reservoir Levels

End of June storage volume for Lake Powell was 9.75 million acre-feet (MAF) or about 42 percent of capacity. Lake Powell reservoir inflow for June was 2.527 million acre-feet or 103 percent of average. Lake Powell elevation at the end of June was 3,586 feet, or about 114 feet from the maximum reservoir level and 93 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. Early forecasts continue to point to the same 7.48 million acre-feet release in water year 2025. Firming purchase power costs through June were $1,279,826. Purchase power in the region was available and prices per megawatt-hour over the last month have averaged in the lower $30s for on-peak and upper $10s for 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	15.50	17.13	104.79	59.00	19.78	11.88	434,700	429,765	523,377	428,729	34,256	$ 1,743,729	$ 1,743,729	$ 995,137
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	$ 652,574
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	$ 705,393
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	$ 1,370,872
Jul 24														
Aug 24														
Sep 24														
Total							3,087,150	3,014,110	4,050,813	2,995,026	273,220	$ 22,551,168	$ 22,551,168	$ 12,558,308
							Actual generation as a percentage of average:			73.9%			Cost per MWh:	$45.96

Lake/Reservoir Levels

Aggregate system storage for the Lower Colorado River Basin, or Lakes Mead, Mohave, and Havasu, was 110.944 million acre-feet (MAF) at the end of June, or 38 percent of the Lower Basin capacity. The Lower Basin tributary inflow into Lake Mead for June was 20,000 acre-feet, or about 72 percent of the five-year average for the month. The total side inflow into Lake Mead for WY 2024 is projected to be 707,000 acre-feet, which represents a 47 percent decrease from last year and 54 percent of the normal annual side inflow. Lake Mead's elevation at the end of June was 1,062.5 feet, or 157.1 feet below full storage elevation and 112.5 feet above the minimum generation elevation for Hoover Dam. For WY 2024, Lake Mead's elevation peaked in March at 1,076.62 feet (10.8 feet above the WY 2023 peak elevation) and the minimum elevation of 1,060.89 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. As of July, precipitation is currently 101 percent of average. Market prices for June averaged $36 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	*	$ 205,026
Jun 24	13.10	18.90	1,202.70	1,292.90	0.50	5.44	295,012	305,012	246,200	292,242	2,457	*	*	$ 64,457
Jul 24														
Aug 24														
Sep 24														
Total							1,080,021	1,249,021	1,281,100	1,138,653	589,454	$ 22,049,360	$ 18,689,360	$ 31,230,389
							Actual generation as a percentage of average:			88.9%			Cost per MWh:	$52.98

Lake/Reservoir Content

At the end of June reservoir inflows were at 107 percent of average, and storage is at 105 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 June, the snowpack is almost all melted off for both the Wyoming area and the Colorado East Slope area. The latest National Weather Service forecast indicates August through October temperatures will be above average in northern Colorado, Wyoming, and the southern part of Montana. The same forecast indicates precipitation will be below average across Colorado, Wyoming, and Montana. The same forecast indicates precipitation will be below average in Wyoming and Colorado. Summer generation for both the North Platte Basin and the Big Horn Basin is forecasted to be average. Summer 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														
Aug 24														
Sep 24														
Total							1,719,000	1,943,000	2,145,000	2,226,391	308,486	$ 20,763,370	$ 20,763,370	$ 20,858,369
							Actual generation as a percentage of average:			103.8%			Cost per MWh:	$67.62

Lake/Reservoir Content

As of June 30, reservoir storage was 124 percent of the 15-year average for Trinity, 119 percent for Shasta, 117 percent for Folsom, and 140 percent for New Melones. Accumulated inflow was 141 percent of the 15-year average for Trinity, 118 percent for Shasta, 86 percent for Folsom, and 90 percent for New Melones.

Weather and Other Conditions

Northern Sierra precipitation in April it was 2.02 inches or 53 percent average, in May it was at 2.22 inches or 98 percent of average, and there was no recorded precipitation for June. The water year total remains at 47.20 inches or 94 percent of the annual average of 50 inches. 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	*	$ 191,131	$ 219,789	*
Jul 24														
Aug 24														
Sep 24														
Total							6,731,358	6,588,914	7,076,433	6,156,939	1,419,674	$ 35,858,036	$ 36,859,350	$ 44,903,908
							Actual generation as a percentage of average:			87.0%			Cost per MWh:	$31.63

Lake/Reservoir Content

The yearly runoff forecast for the Missouri River Basin as of July 1 was 25 million acre-feet (MAF) or 96 percent of average. Runoff above Sioux City for June was 6.6 MAF or 119 percent of average. System storage as of July 30 was 56.5 MAF.

Weather and Other Conditions

On July 30, the mountain snow water equivalent (SWE) above Fort Peck and Fort Peck to Garrison reaches remains 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. The Fort Peck Flow test was terminated the week of July 22 as there were no indications of pallid sturgeon spawned in the reach. Normal operations at Fort Peck Dam have resumed, following the ponding efforts with the reservoirs done last month to reduce the downstream flooding impacts of the heavy rains. Eastern Colorado saw heavy rainfall in July. However, drought conditions are expanding in Montana, Nebraska, South Dakota and parts of eastern Wyoming. The 90- to 180-day averages outlook shows normal to slightly above normal temperatures across the region; and anticipates slightly below normal precipitation in the southern half of 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.