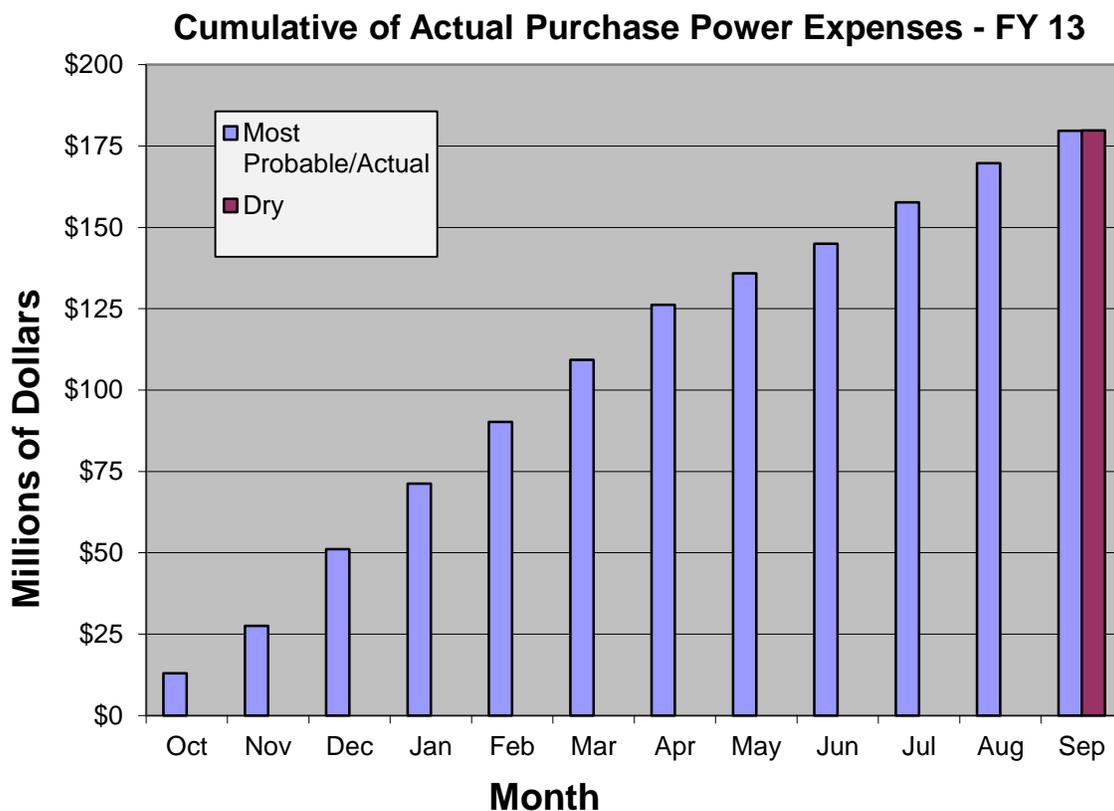


Hydro Conditions and Purchase Power Monthly Outlook September 2013

Western Summary

- The most probable forecast of net generation for FY 2013 is 22,590 gigawatt-hours (GWh) or 83 percent of average. October through August generation was 83 percent of average.
- The lower level forecast of generation for FY 2013 is 22,558 GWh or 83 percent of average.
- The purchased power for FY 2013 is expected to be approximately 4,338 GWh.
- The average price for purchase power across all hydro projects and off-peak and on-peak periods is expected to be \$41/MWh. This price compares to \$48/MWh last year.
- Purchase power expenses for FY 2013 are forecast to be approximately \$179.7 million.
- October through August purchases totaled over \$169 million – compared to \$91 million for the same period last year.



Upper Great Plains Region

Storage: August inflows resulted in 51 percent of average and the anticipated inflow for September is forecast to be 57 percent of average. Based upon the current water supply forecast, releases out of Canyon Ferry to the Missouri River below Holter Dam will be maintained near 3,000 cfs to conserve storage. Streamflows into Bighorn Lake during August continued to remain below average at only 64% of average. Based on the September 1 water supply forecast and the planned releases out of Boysen and Buffalo Bill Reservoirs, the September runoff into Bighorn Lake is expected to equal 122,700 acre-feet (66% of average).

As of September 22, 2013, the storage level at [Canyon Ferry](#) was 1,451,091 acre feet and the active conservation pool is 76.7% full. Storage at [Yellowtail](#) is 946,501 acre feet and the active conservation pool is 92.7% full.

COE: Total runoff for the year is estimated to be 90% of normal at 22.7 million acre-feet (MAF), due to above normal rains in the Missouri Basin. Up 2% from last month. Normal runoff is 25.2 MAF. The COE remains in conservation mode and recent rains below Gavins Point have allowed the COE to lower releases from the system and still keep navigation elevations at usable levels. Forecasted energy production for the calendar year is up slightly from last month's forecast by 97 GWh.

Snow pack: The September 1 forecasted runoff for calendar year 2013 is 22.7 MAF. This runoff would be 90% of normal runoff.

FY Generation: The six main stem power plants generated 726 million kilowatt hours of electricity in July. Total energy production for 2013 was earlier forecasted to reach 8.0 billion kWh, but has been reduced to around 7.6 billion kWh. The long-term average is approximately 10 billion kWh.

Purchased Power: Surplus energy and cooler fall temperatures depressed the market prices to low to mid-teens for off peak power and low to mid-twenties for on peak power.

Rocky Mountain Region

The Loveland Area Projects (LAP) reside in both the Upper Missouri and Upper Colorado basins. Hydrologic conditions can vary from one river basin and watershed to another. The three LAP watersheds are the Bighorn River Basin in Wyoming, the North Platte River Basin in Colorado and Wyoming, and the headwaters of the Colorado River Basin in Colorado.

Drought conditions still range from moderate to extreme in most of the LAP area. Parts of the South Platte, North Platte, and Upper Colorado rivers are no longer in drought status due to record precipitation that caused September flooding. The reservoir inflow has been well below normal in all three LAP basins so far this year. The reservoir storage at the end of August was near average in the Bighorn Basin, below average for the Colorado-Big Thompson Project (CBT), and well below average in the North Platte Basin. The latest National Weather Service forecast for the October through December period indicates temperatures are more likely to be above normal in southwest Colorado and southwest Wyoming and just as likely to be above normal as below normal elsewhere. Precipitation is just as likely to be above normal as below normal throughout the LAP area.

LAP Water Conditions At-A-Glance									
	Reservoir Storage 1,000 acre-feet			Actual Reservoir Inflow To-Date 1,000 acre-feet			Spring Reservoir Inflow 1,000 acre-feet (April - July)		
	end of August	average	% of average	October - August	average	% of average	actual	average	% of average
CBT	628.5	718.9	87%	648.7	754.6	86%	526.1	590.0	89%
North Platte	781.2	1,343.7	58%	519.6	1,110.0	47%	356.4	750.0	48%
Bighorn	1,912.4	1,988.1	96%	1,122.7	1,712.5	66%	792.8	1,435.3	55%
TOTAL	3,322.1	4,050.7	82%	2,291.0	3,577.1	64%	1,675.3	2,775.3	60%
Net At Plant Generation Projections (GWh)									
	Most Probable Case median inflow			Reasonable Minimum Case lower decile inflow			Reasonable Maximum Case upper decile inflow		
	September projection	average	% of average	September projection	average	% of average	September projection	average	% of average
Winter 12-13	512.8	724.0	71%	512.8	724.0	71%	512.8	724.0	71%
Summer 13	911.0	1,214.7	75%	909.0	1,214.7	75%	912.1	1,214.7	75%
TOTAL 2013	1,423.8	1,938.7	73%	1,421.8	1,938.7	73%	1,424.9	1,938.7	73%
Winter 13-14	483.3	724.0	67%	468.3	724.0	65%	515.0	724.0	71%

LAP generation has been well below average since October and is also expected to be below average in September. The low generation reflects hydrologic conditions, significant plant bypasses for maintenance, and the six week cessation of CBT Adams Tunnel imports and associated generation to improve Grand Lake water clarity that started on July 23 and ended on September 4. The upcoming winter generation is projected to be between 65% and 70% of average depending on the level of late season water demand.

Colorado River Storage Project Management Center

The total storage volume for the CRSP main stem reservoirs is 15,051,000 acre feet, which is about 49 percent of the total main stem reservoir storage capacity. Main stem reservoir inflows for the most recent historical month (August, 2013) were about 54 percent of average. Lake Powell elevation currently is about 3,590 feet, 110 feet from maximum reservoir level, and about 100 feet from the minimum generation level. Based on observed inflows and current forecasts, water year 2013 unregulated inflow is expected to be 4.46 MAF (41% of average), which would be the second significantly below-average year in a row.

The hydrologic forecast for water year 2014 for Lake Powell, issued by the Colorado Basin River Forecast Center, projects that the most probable (median) unregulated inflow volume will be 8.41 MAF (78% of average based on the period 1981-2010). The Lake Powell operational tier for water year 2014 is the Mid-Elevation Release Tier with an annual release volume of 7.48 MAF.

Estimated SLCA/IP net generation for Fiscal Year 2013 is 4.28 GWh as compared to 5.61 GWh based on the long-term historical average generation.

Total purchase power expenses for firming during the fiscal year 2013 are about \$52.4 million as compared to about \$14.8 million based on long-term median historical releases. Purchase power availability in the region is abundant and prices are typical for this time of year. Firming purchases for the last couple of months have been in the upper \$30's to low \$40's on-peak and upper \$20's to low \$30's off-peak.

Desert Southwest Region

Current Aggregate Storage (Mead, Mohave & Havasu): 14.629 MAF (14.577 MAF July-2013), 20.860 MAF (63-Year Historical Avg).

The Lake Mead end of August 2013 elevation was 1,106.13 ft. (0.21 ft. higher than end of July 2013 elevation), or about 113.51 ft. below full storage elevation of 1,219.64 ft. and 56.13 ft. above the minimum generation elevation for Hoover of 1,050 ft.

Lake Mead's elevation peaked at 1122.32 ft in January of WY 2013 (11.86 ft. below the WY 2012 peak elevation of 1134.18 ft.), and is projected to drop to a minimum elevation of 1106.16 ft. in September of WY 2013, a maximum fluctuation in lake elevation of 16.16 ft.

The Lake Powell operational tier for WY 2013 is currently the Upper Elevation Balancing Tier. Total releases from Lake Powell are projected to be average at 8.23 MAF for WY 2013 (actual of 9.47 MAF for WY 2012). The observed 2013 April – July unregulated inflow into Lake Powell was 2.56 MAF or 36% of average (actual of 2.06 MAF or 29% of average for 2012).

Basin Snow Pack and Precipitation: DSW hydrology is mostly dependent on the Colorado River Basin snow pack and precipitation above Lake Powell. The WY 2013 precipitation is currently 90% of average and the snowpack is non-existent.

Lower Basin Runoff: The lower basin tributary inflow into Lake Mead for Aug 2013 was 129 KAF. The projected side inflow into Lake Mead for WY 2013 is 747 KAF which represents a 2.3% increase over last year's actual of 730 KAF, and represents 57% of the normal annual side inflow of 1.3 MAF.

Forecasted WY 2013 Generation: 5,076 GWh compared to 5,642 GWh (Historical Average). The projected Hoover and Parker-Davis generation for WY 2013 is 90% of the average historical generation.

Wholesale Power Market Conditions: The August market prices in the Desert Southwest averaged about \$37/MWh firm on-peak, \$26/MWh firm off-peak compared to \$44/MWh firm on-peak, \$26/MWh firm off-peak for the previous month.

Sierra Nevada Region

The total storage of the four major CVP reservoirs is 4.684 MAF, compared to 6.426 MAF last year. Accumulated inflow for the water year-to-date is 61 percent of the 15-year average for Trinity, 72 percent for Shasta, 68 percent for Folsom and 55 percent for New Melones.

The Northern Sierra Eight Station index averages slightly more than 50 inches of precipitation per water year. This water year started out with October recorded precipitation totaling 2.70 inches,

which is below average for this month. November recorded precipitation totaled 13.00 inches, which is more than 200 percent of average. December came in at 17.10 inches, or 193 percent of average. January came in at 1.50 inches or 17 percent of its average. It ranks as one of the sixth driest. February ended at 0.90 inches or 11 percent of its average. March ended at only at 4.38 inches or 65 percent of its average. April ended at 1.52 inches or 41 percent of its average. May ended at 1.30 inches or 59 percent of its average. June ended at 1.80 inches or 186 percent of its average. July ended at zero inches. August ended at zero inches. September has 1.24 inches of recorded precipitation which is 156 percent of its monthly average. The cumulative total at this time is 45.54 inches or 91 percent of the total average of 50.30 inches.

The snowpack is assumed to reach its peak April 1. Therefore, snow water equivalents are reported as a percentage of this average. As of May 23, the North is at 2 percent, the Central is at 2 percent and the South is at 1 percent of this average. The Sacramento River Index forecast of water supply based upon May 1 conditions is “dry” (close to critical) for the 90 percent exceedence case and “dry” for the 50 percent case, reflecting the poor January, February and March, which has set records, but not in a good way. The State’s final yeartype declaration is based upon May 1 conditions at the 50 percent exceedence level. This year is officially “dry.”

The average projection of net generation is again taken from the latest modeling using the update to our customers’ “Green Book.” This average, at 3.34 GWh, is less than the 3.63 GWh from the CVPIA PEIS planning studies. Under the Post 2004 Marketing Plan, net generation, after Project Use load, First Preference Customer load and sub-control area reserve requirement, becomes the Base Resource which is allocated among the Base Resource, Variable Resource and Full Load Service Customers. This past fiscal year ended at 109 percent of that average. It seems likely that this year will come in at approximately 90 percent of that average. Delta Salinity has been an issue. As Reclamation has been cutting instream flows to conserve storage, they have had to cut Delta pumping as needed to manage salinity.