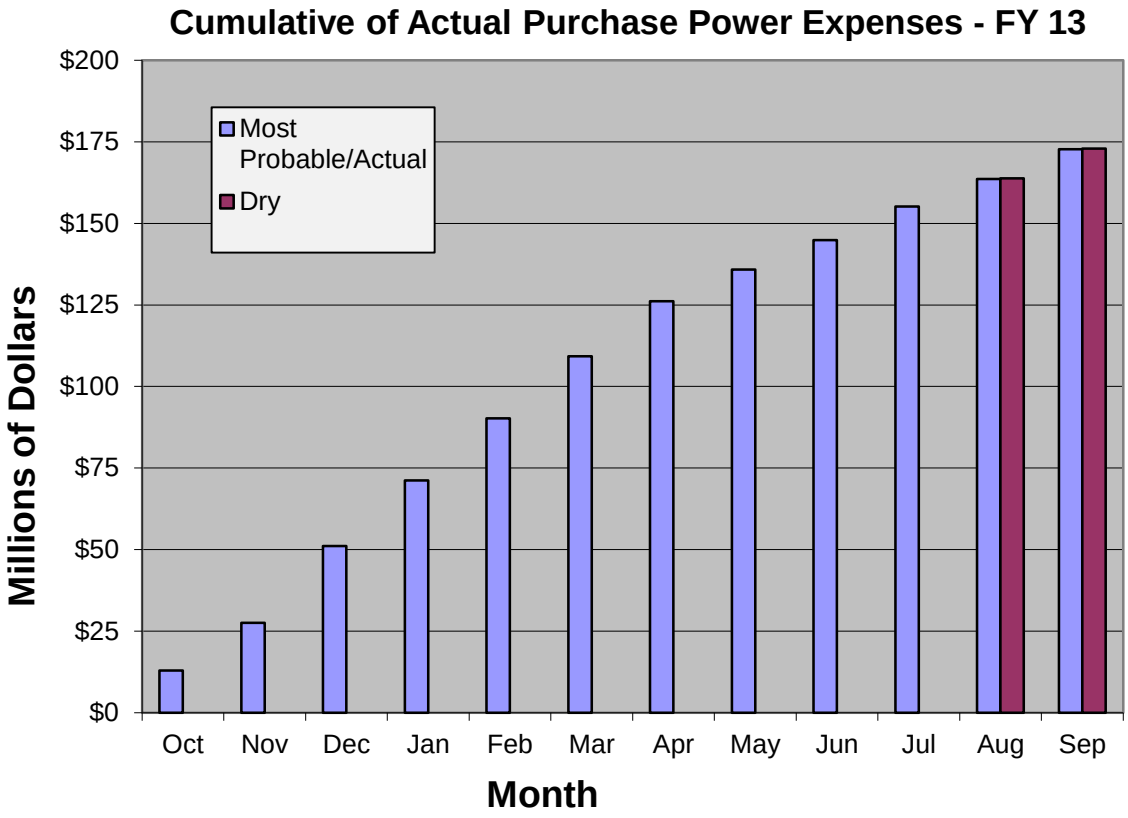
Hydro Conditions
and
Purchase Power Monthly Outlook
August 2013

Western Summary

- The most probable forecast of net generation for FY 2013 is 22,722 gigawatt-hours (GWh) or 85 percent of average. October through July generation was 86 percent of average.
- The lower level forecast of generation for FY 2013 is 22,686 GWh or 85 percent of average.
- The purchased power for FY 2013 is expected to be approximately 4,161 GWh.
- The average price for purchase power across all hydro projects and off-peak and on-peak periods is expected to be $42/MWh. This price compares to $48/MWh last year.
- Purchase power expenses for FY 2013 are forecast to be approximately $173 million.
- October through July purchases totaled over $155 million – compared to $84 million for the same period last year.



Upper Great Plains Region

Storage: July inflows resulted in 42 percent of average and the anticipated inflow for August is forecast to be 52 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 July continued to remain below average at only 50 percent of average. Based on the August 1 water supply forecast and the planned releases out of Boysen and Buffalo Bill Reservoirs, the August runoff into Bighorn Lake is expected to equal 100,300 acre-feet (66 percent of average).

As of August 19, 2013, the storage level at Canyon Ferry was 1,541,288 acre feet and the active conservation pool is 81.5 percent full. Storage at Yellowtail is 959,760 acre feet and the active conservation pool is 94.0 percent full.

COE: Total runoff for the year is estimated to be 90 percent of normal at 22.7 MAF, due to above normal rains in the Missouri Basin. Up 2 percent 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 August 1 forecasted runoff for calendar year 2013 is 22.7 MAF. This runoff would be 90 percent 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 7.8 billion KWh. The long-term average is approximately 10 billion kWh.

Purchased Power: The expected hot weather did not come and cooler temperatures kept the prices in the lower 20s for off peak power and upper 30s 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 the LAP area. The reservoir inflow has been below normal in all three LAP basins so far this year. The reservoir storage at the end of July 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 September through November period indicates temperatures and precipitation are just as likely to be above average as below average. The spring runoff ended up below average for the CBT and well below average for the North Platte and Bighorn basins.

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 July	average	% of average	October - July	average	% of average	actual	average	% of average
CBT	696.1	776.4	**90%**	611.5	697.0	**88%**	526.1	590.0	**89%**
North Platte	1,036.8	1,636.5	**63%**	501.8	1,067.7	**47%**	356.4	750.0	**48%**
Bighorn	2,081.6	2,124.4	**98%**	1,069.7	1,613.0	**66%**	792.8	1,435.3	**55%**
TOTAL	3,814.5	4,537.3	**84%**	2,183.0	3,377.7	**65%**	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		
	August projection	average	% of average	August projection	average	% of average	August projection	average	% of average
Winter 12-13	512.8	724.0	**71%**	512.8	724.0	**71%**	512.8	724.0	**71%**
Summer 13	922.2	1,214.7	**76%**	916.1	1,214.7	**75%**	942.5	1,214.7	**78%**
TOTAL 2013	1,435.0	1,938.7	**74%**	1,428.9	1,938.7	**74%**	1,455.3	1,938.7	**75%**
Winter 13-14	482.1	724.0	**67%**	464.8	724.0	**64%**	548.5	724.0	**76%**

LAP generation has been well below average since October and is expected to be below average through 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. The upcoming winter generation is projected to be well between 64 percent and 76 percent 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 15,408,000 acre feet, which is about 50 percent of the total main stem reservoir storage capacity. Main stem reservoir inflows for the most recent historical month (July 2013) were about 19 percent of average. Lake Powell elevation currently is about 3,593 feet, 107 feet from maximum reservoir level, and about 103 feet from the minimum generation level. Based on observed inflows and current forecasts, water year 2013 unregulated inflow is expected to be 4.33 MAF (40 percent of average), which would be the second significantly below-average year in a row.

The August 2013 24-Month study projects that, with an 8.23 MAF annual release pattern in water year 2014, the January 1, 2014, Lake Powell elevation would be 3,573.69 feet and the Lake Mead elevation would be 1,107.39 feet. Therefore, consistent with Section 6.C.1 of the Interim Guidelines for the operation of Lake Powell and Lake Mead, 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 4.29 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 $49.8 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): 14.577 MAF (14.576 MAF June 2013), 20.995 MAF (63-Year Historical Avg).

The Lake Mead end of July 2013 elevation was 1,105.92 ft. (0.06 ft. lower than end of June 2013 elevation), or about 113.72 ft. below full storage elevation of 1,219.64 ft. and 55.92 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 1104.29 ft. in September of WY 2013, a maximum fluctuation in lake elevation of 18.03 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 preliminary observed 2013 April – July unregulated inflow into Lake Powell is 2.56 MAF or 36 percent of average (actual of 2.06 MAF or 29 percent 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 81 percent of average and the snowpack is non-existent.

Lower Basin Runoff: The lower basin tributary inflow into Lake Mead for June 2013 was 115 KAF. The projected side inflow into Lake Mead for WY2013 is 728 KAF which represents a 0.3 percent decrease over last year's actual of 730 KAF, and represents 56 percent of the normal annual side inflow of 1.3 MAF.

Forecasted WY 2013 Generation: 5163 GWh compared to 5643 GWh (Historical Average). The projected Hoover and Parker-Davis generation for WY 2013 is 91 percent of the average historical generation.

Wholesale Power Market Conditions: The July market prices in the Desert Southwest averaged about $44/MWh firm on-peak, $26/MWh firm off-peak compared to $38/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 5.192 MAF, compared to 6.979 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 54 percent for New Melones. Reclamation announced on August 7 that water from the Trinity Reservoir will go to supplement

flows in the Lower Klamath River in an effort to help protect an expected large returning run of adult Chinook salmon from a disease outbreak and mortality.

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. The cumulative total at this time is 44.30 inches or 88 percent of the total average of 50.30 inches. There has been no measurable precipitation for August.

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. Reclamation forecasts are based upon April 1 conditions, which were based upon water supply forecast of "dry" for the 90 percent exceedence and "dry" for the 50 percent exceedence. These forecasts would both be 93 percent of this "Green Book" average net generation. Project use pumping is now at maximum to meet South of Delta water demands. And operations at San Luis Reservoir have changed from generation to pumping.