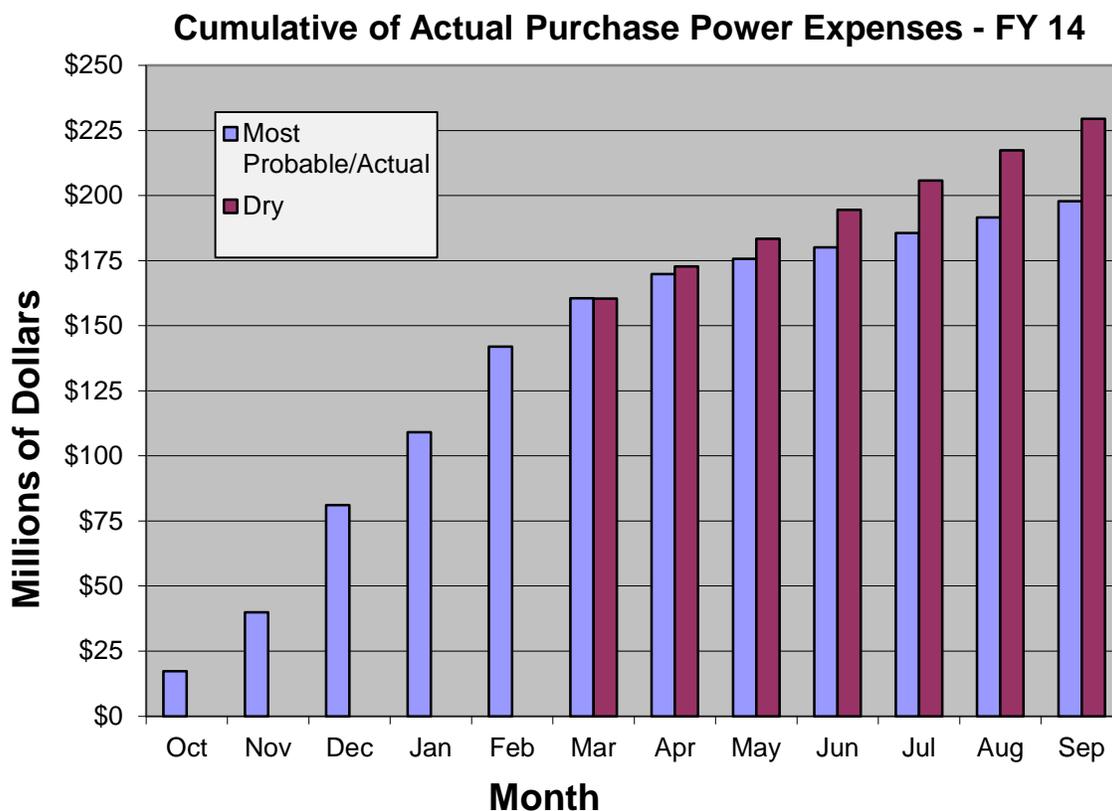


Hydro Conditions and Purchase Power Monthly Outlook March 2014

Western Summary

- The most probable forecast of net generation for fiscal year (FY) 2014 is 23,039 gigawatt-hours (GWh) or 85 percent of average. October through February generation was 73 percent of average.
- The lower level forecast of generation for FY 2014 is 21,824 GWh or 80 percent of average.
- The amount of power purchased for FY 2014 is expected to range between 4,050 and 4,484 GWh.
- The average price for purchase power across all hydro projects and off-peak and on-peak periods is expected to be \$49/megawatt-hour (MWh). This price compares to \$42/MWh last year.
- Purchase power expenses for FY 2014 are forecast to range between \$198 and \$230 million – compared to \$182 million in FY 2013.
- October through February purchases totaled \$142 million – compared to \$92 million for the same period last year.



Upper Great Plains Region

Storage: The anticipated inflow for the April through July period is forecast to be 2,027.7 thousand acre-feet (kAF) or 117 percent of the 30 year average. Based upon the current water supply forecast, releases out of Canyon Ferry to the Missouri River below Holter Dam is expected to be maintained near or above 4,100 cubic feet per second beginning in late March and continue through the remainder of the year. Streamflows into Bighorn Lake during February were 96 percent of average. On March 1, the NRCS measured the snow water content of the mountain snowpack in the Bighorn Basin at 128 percent of average. Based on the March 1 water supply forecast and the planned releases out of Boysen and Buffalo Bill Reservoirs, the April-July runoff into Bighorn Lake is expected to equal 1,646,700 acre-feet (154 percent of average).

As of March 21, 2014, the storage level at [Canyon Ferry](#) was 1,460,387 acre-feet and the active conservation pool is 77.2 percent full. Storage at [Yellowtail](#) is 888,152 acre-feet and the active conservation pool is 87.0 percent full.

COE: As of March 7, mountain snowpack is about 125 percent. There is not much plains snow in the eastern Dakotas. Runoff forecast was increased to 30.6 million acre-feet (MAF), which is about 20 percent above normal. Total water volume stored in the Missouri Mainstream Reservoir is about 50.6 MAF, even though storage is down due to the lingering drought. Runoff is now estimated to be 106 percent of normal. Forecast energy was raised to 8,404 GWh, up somewhat from last month. The average is 10,027 GWh.

Snow pack: March 1 forecasted runoff for calendar year 2014 is 30.6 MAF. This runoff would be 121 percent of normal runoff.

FY Generation: The six main stem power plants generated 499 million kilowatt hours of electricity in February. Total energy production for 2014 is forecasted to be 8,404 GWh, up from 7,564 GWh forecasted in December. The long-term average is approximately 10 billion kWh.

Purchased Power: The extreme cold weather has abated and so the price of power is starting to come back down. Prices for off peak power range from \$24-\$28 and on peak power ranges up to the mid-\$40s.

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.

The LAP area is essentially drought free. The overall LAP reservoir storage at the end of February was below average with gains in the Colorado-Big Thompson Project (CBT) and significant losses in the North Platte Basin since the end of last February. The snowpack was well above average starting the month and remains so as of this writing. The spring snow melt runoff is forecast to be above average for the North Platte Basin and well above average for the CBT and Bighorn Basin. The latest National Weather Service forecast indicates April through June temperatures and precipitation will just as likely be above average as below average in Northern Colorado and Wyoming.

LAP Water Conditions At-A-Glance									
	Reservoir Storage 1,000 acre-feet			Snowpack inches snow water equivalent			Most Probable Reservoir Inflow 1,000 acre-feet (April - July)		
	end of February	average	% of average	beginning of March	average	% of average	March forecast	average	% of average
	CBT	587.4	607.3	97%	335.7	248.0	135%	783.0	588.0
North Platte	1,032.4	1,456.3	71%	319.9	265.0	121%	800.0	770.0	104%
Bighorn	1,937.3	1,730.4	112%	383.9	278.9	138%	1,947.0	1,318.4	148%
TOTAL	3,557.1	3,794.0	94%	1,039.5	791.9	131%	3,530.0	2,676.4	132%
Net At Plant Generation Projections (GWh)									
	Most Probable Case median inflow			Reasonable Minimum Case lower decile inflow			Reasonable Maximum Case upper decile inflow		
	March projection	average	% of average	March projection	average	% of average	March projection	average	% of average
	Winter 13-14	532.4	718.0	74%	526.0	718.0	73%	537.5	718.0
Summer 14	1,346.7	1,217.8	111%	1,111.9	1,217.8	91%	1,588.3	1,217.8	130%
TOTAL 2014	1,879.1	1,935.8	97%	1,637.9	1,935.8	85%	2,125.8	1,935.8	110%

The winter season generation is expected to be about 75 percent of average. There was an extended CBT outage due the flooding in September. Reclamation drained Lake Estes and curtailed all imports through Adams Tunnel through early December to allow for the removal of sediment and debris washed into the Lake by the flood. Imports resumed in mid-December and heavier Adams Tunnel imports later in the winter shifted normal October and November CBT generation into February and March. There have been minimum reservoir releases and associated generation in the North Platte Basin due to depleted reservoir storage.

The upcoming summer season generation is expected to fall between 90 percent and 130 percent of average. If heavy runoff and reduced water demands result in nearly full East Slope storage while the possibly of a late summer spill of Lake Granby is low then conditions would be right for another curtailment of Adams Tunnel imports and associated CBT generation in the late summer as a means to improve water clarity in Grand Lake.

Colorado River Storage Project Management Center

The total storage volume for the CRSP main stem reservoirs is 13,947,000 acre-feet, which is about 45 percent of the total main stem reservoir storage capacity. Main stem reservoir inflows for the most recent historical month (February 2014) were about 87 percent of average. Lake Powell elevation currently is about 3,575 feet, 125 feet from maximum reservoir level, and about 85 feet from the minimum generation level. Lake Powell elevation is expected to increase beginning in April as spring runoff begins entering the reservoir.

The forecast for the 2014 April to July water supply season for Lake Powell, issued on March 4, 2014, by the Colorado Basin River Forecast Center, projects that the most probable (median) unregulated inflow volume will be 8.30 MAF (116 percent of average based on the period 1981-

2010). The April-July forecast increased by 1.05 MAF since last month. The winter snow accumulation season has tracked near average to slightly above average in the past month (currently 115 percent of median). There is currently about one more month remaining for the typical snow accumulation season so there is still uncertainty regarding the final snowpack and resulting runoff. The April-July forecast ranges from a minimum probable of 6.00 MAF (84 percent of average) to a maximum probable of 11.1 MAF (155 percent of average). For reference, the 30-year April-July average is 7.16 MAF. There is a 10 percent chance that inflows could be higher than the maximum probable, and a 10 percent chance they could be lower than the minimum probable.

Based on that inflow forecast, estimated SLCA/IP net generation for FY 2014 is 4,141 GWh as compared to 5,584 GWh based on the long-term historical average generation.

Estimated purchase power expenses for firming during the FY 2014 are about \$51.8 million, as compared to about \$18.4 million based on long-term median historical releases. Purchase power availability in the region is good and prices are somewhat higher than usual for this time of year, but are coming down as the weather warms. Firming purchases for the last month have been averaging in the low \$40's on-peak and low \$30's off-peak, but have spiked higher during extreme cold weather events.

Desert Southwest Region

Current Aggregate Storage (Mead, Mohave & Havasu): 14.708 MAF (14.721 MAF Jan-2014), 20.960 MAF (64-Year Historical Avg).

The Lake Mead end of February 2014 elevation was 1,107.94 feet (0.81 feet lower than end of Jan 2014 elevation), or about 111.7 feet below full storage elevation of 1,219.64 feet and 57.94 feet above the minimum generation elevation for Hoover of 1,050 feet.

Lake Mead's elevation peaked at 1,108.75 feet in January of WY 2014 (13.57 feet below the WY 2013 peak elevation of 1,122.32 feet), and is projected to drop to a minimum elevation of 1,082.77 feet in September of WY 2014, a maximum fluctuation in lake elevation of 25.98 feet.

The Lake Powell operational tier for WY 2014 is currently the Mid-Elevation Release Tier. Total releases from Lake Powell are projected to average about 7.48 MAF for WY 2014 (actual of 8.232 MAF for WY 2013). The projected 2014 April - July unregulated inflow into Lake Powell (as of March 17, 2014) is 8.0 MAF or 112 percent of average (actual of 2.56 MAF or 36 percent of average for 2013).

Basin Snow Pack and Precipitation: DSW hydrology, or the Lower Colorado River Basin, is mostly dependent on the Colorado River Basin snow pack and precipitation above Lake Powell. The WY 2014 precipitation is currently 101 percent of average and the snowpack is 111 percent of the 30-year (1981-2010) median.

Lower Basin Runoff: The lower basin tributary inflow into Lake Mead for February 2014 was 76 kAF. The projected side inflow into Lake Mead for WY 2014 is 823 kAF which represents a 0.12 percent decrease over last year's actual of 824 kAF, and represents 63 percent of the normal annual side inflow of 1.3 MAF.

Forecasted WY 2014 Generation: 5,363 GWh compared to 5,638 GWh (Historical Average). The projected Hoover and Parker-Davis generation for WY 2014 is 95 percent of the average historical generation.

Wholesale Power Market Conditions: The January market prices in the Desert Southwest averaged about \$60/MWh firm on-peak, \$48/MWh firm off-peak compared to \$40/MWh firm on-peak, \$34/MWh firm off-peak for the previous month.

Sierra Nevada Region

The total storage of the four major CVP reservoirs is 4.835 MAF, compared to 7.920 MAF last year. Accumulated inflow for the water year-to-date is 39 percent of the 15-year average for Trinity, 48 percent for Shasta, 40 percent for Folsom and 46 percent for New Melones. None of the reservoirs is in flood control operations at this time.

The Northern Sierra Eight Station index averages slightly more than 50 inches of precipitation per water year. October recorded precipitation totaled 0.72 inches, or 23 percent of the monthly average. November recorded precipitation totaled 1.66 inches, or 26 percent of average. December came in at 0.92 inches, or 10 percent of average. January came in at 1.20 inches or 13 percent of its average. February ended at 14.20 inches or 130 percent of its average. The cumulative total at this time is 20.94 inches or 41 percent of the annual average. December and January are the months with the highest average, with February very close. March is next, but has been dry until just recently. As of the 24th, March is at 5.74 inches or 86 percent of its average. It started raining and snowing again with storms expected throughout the weekend.

Water year type forecasting begins in December, but snow surveying doesn't begin until January. The snowpack is assumed to reach its peak April 1. Therefore, snow water equivalents are reported as a percentage of this average. As of February 26, the North is at 10 percent, the Central is at 25 percent and the South is at 17 percent of this average. The Sacramento River Index forecast of water supply, based upon March 1 conditions forecast, remains "critical" for the 90 percent exceedence as well as the 50 percent case. Recent gains in precipitation will be reflected in the April 1 conditions forecasts. The year type declaration will be based upon May 1 conditions at the 50 percent exceedence level.

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 FY ended at approximately 91 percent of that average. Reclamation forecasts are based upon January 1 conditions, which were based upon water supply forecast of "critical" for the 90 percent exceedence and "critical" for the 50 percent exceedence. These forecasts would be 65 percent and 66 percent of this "Green Book" average net generation. Currently, Delta export remains low because the initial storm system did not produce as much as predicted.