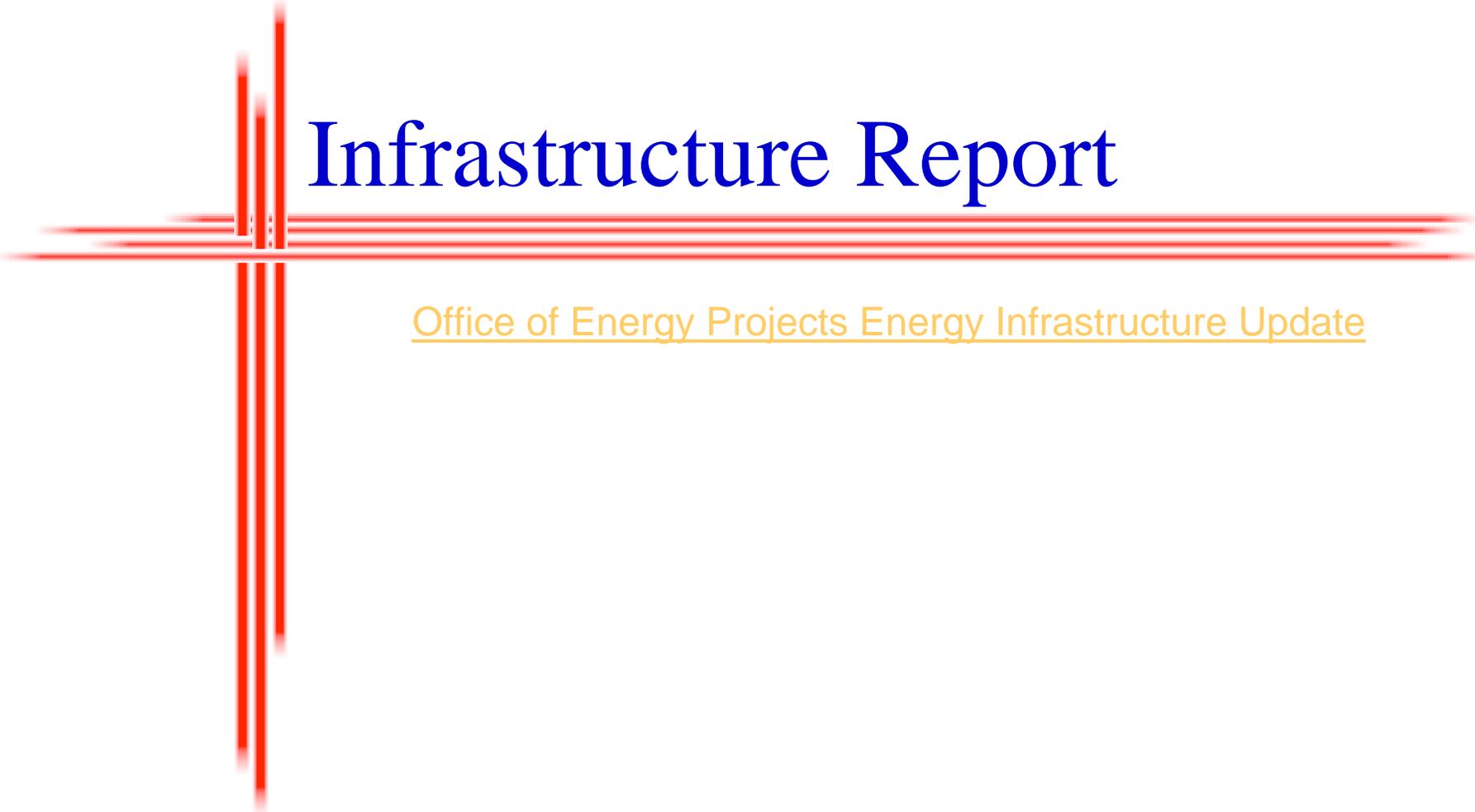


OE ENERGY MARKET SNAPSHOT

Western States Version – September 2013 Data

Office of Enforcement
Federal Energy Regulatory Commission
October 2013



Infrastructure Report

Office of Energy Projects Energy Infrastructure Update



<http://www.ferc.gov/market-oversight/reports-analyses/st-mkt-ovr/2012-som-final.pdf>

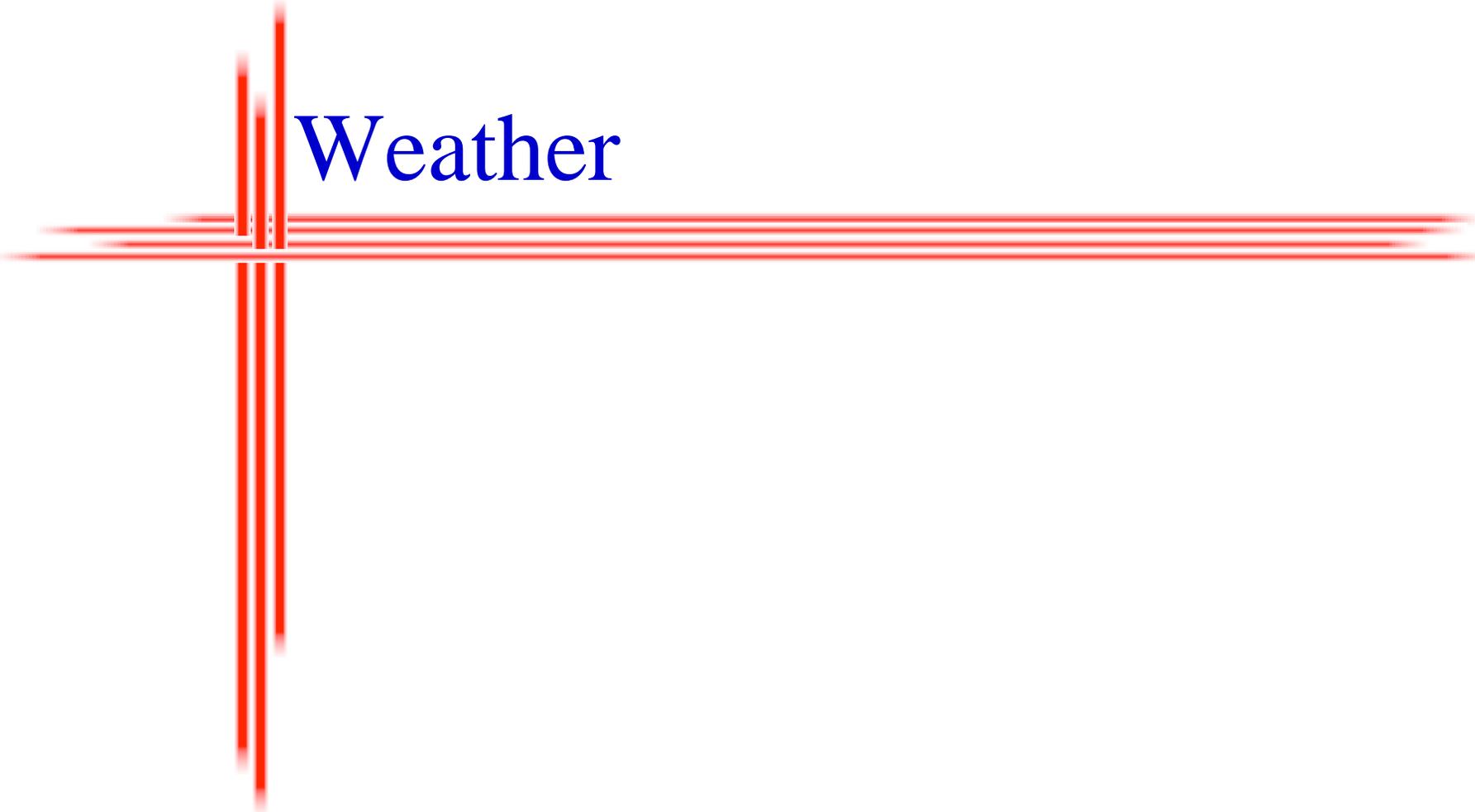


**Winter 2013-14
Energy Market Assessment
Report to the Commission**

Docket No. AD06-3-000
October 2013

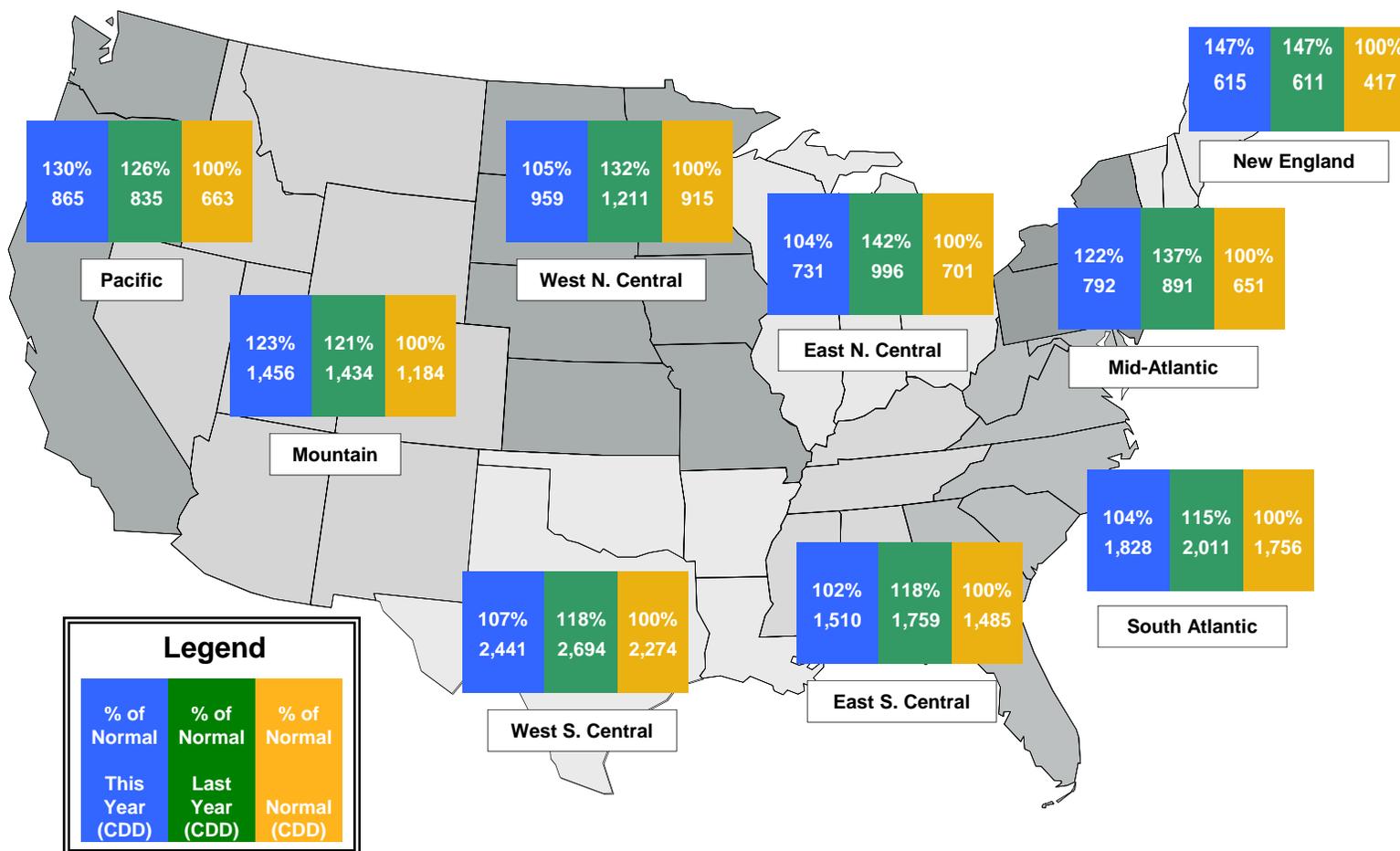
Disclaimer: The matters presented in this staff report do not necessarily represent the views of the Federal Energy Regulatory Commission, its Chairman, or individual Commissioners, and are not binding on the Commission.

<http://www.ferc.gov/CalendarFiles/20131017101835-2013-14-WinterReport.pdf>



Weather

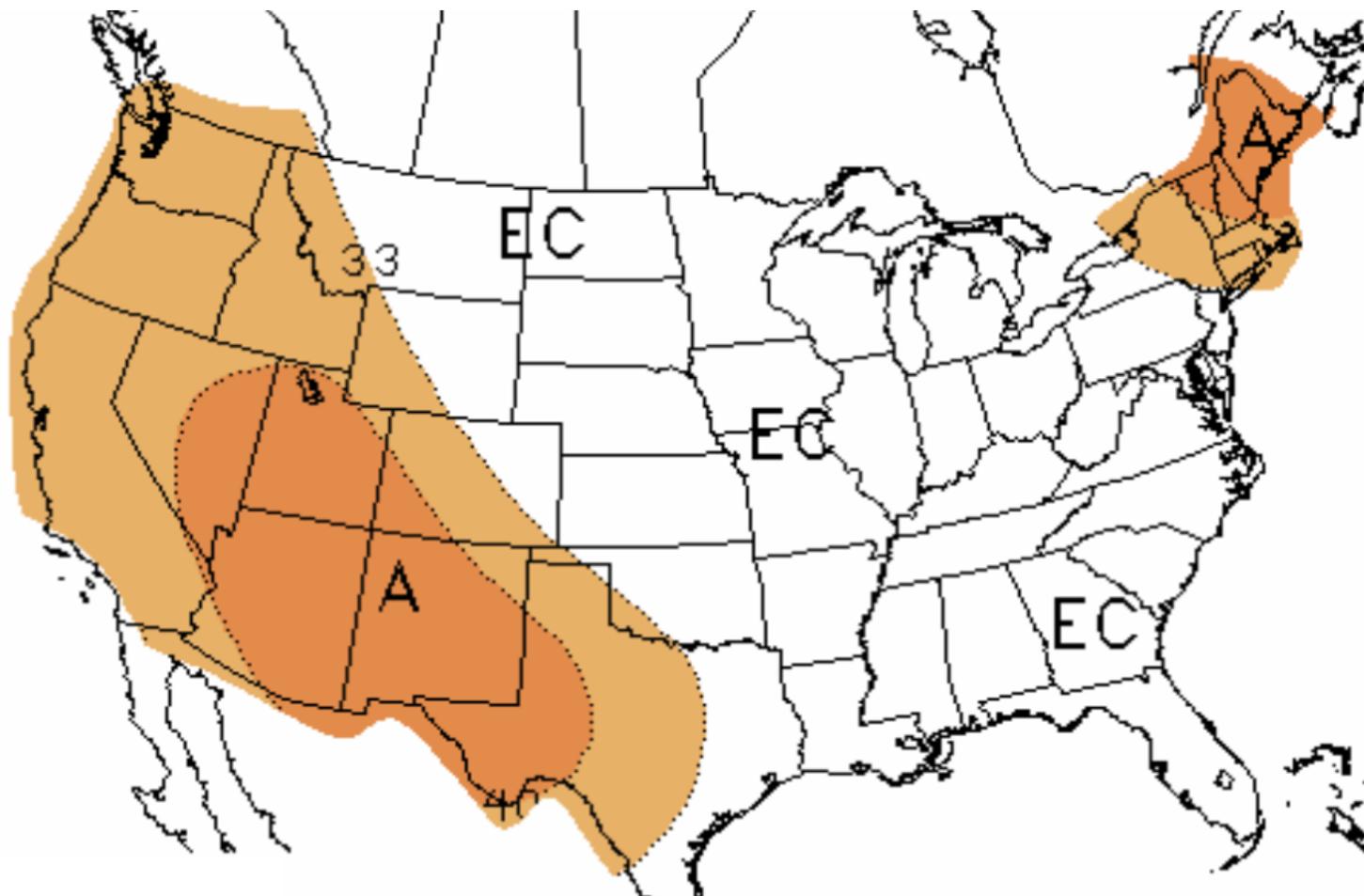
Regional Cooling Degree Days – January to September 2013



Source: Derived from NOAA data. Normal is based on a 30-year average of cooling degree day data.
 October 2013 Western Snapshot Report

Updated: October 16, 2013

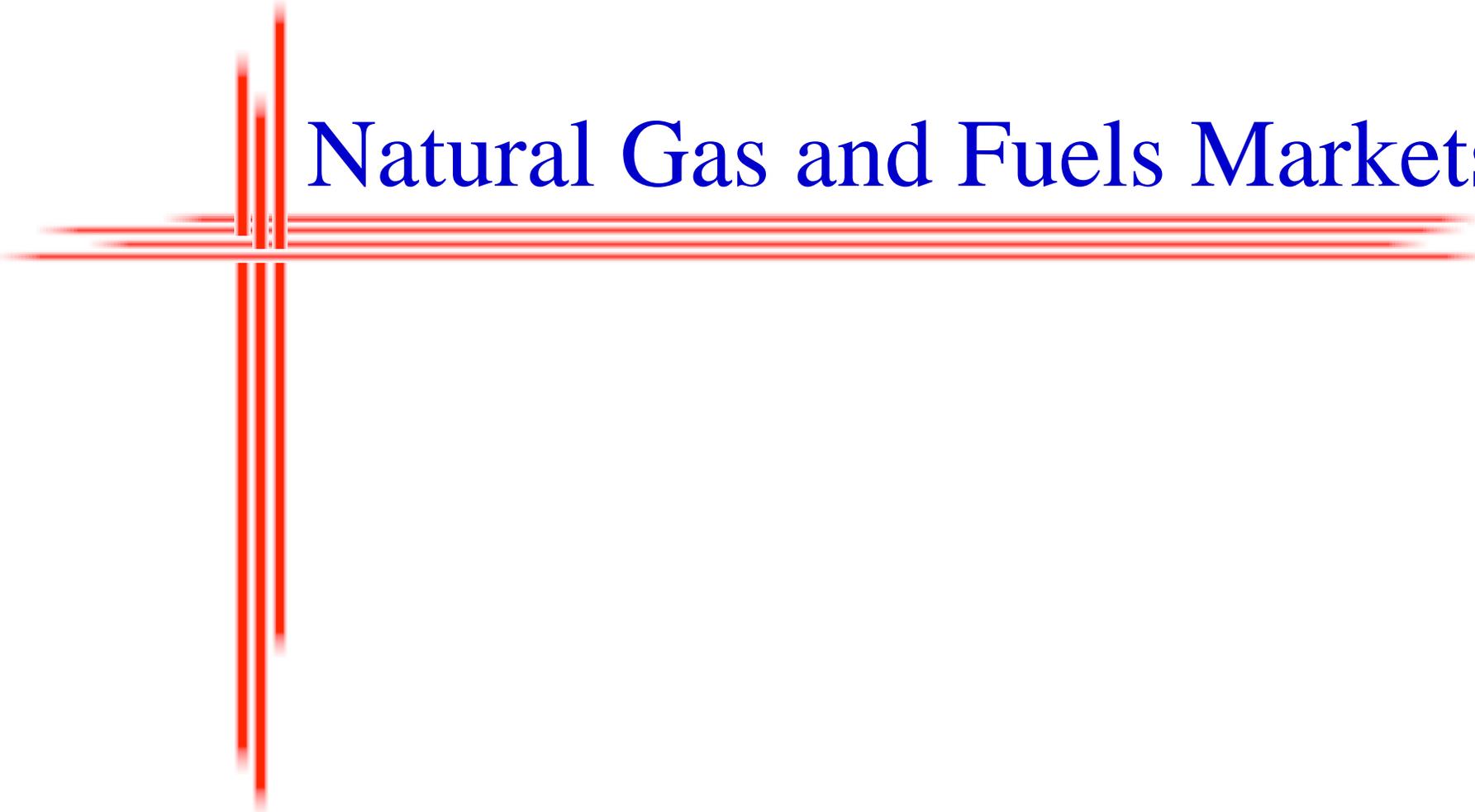
NOAA's 3 Month Temperature Forecast Made July 18, 2013, Valid for October 2013 – December 2013



Note: "A" areas are above normal, "B" areas are below normal and "EC" means equal chance. Normal is based on the last 30 years of data.

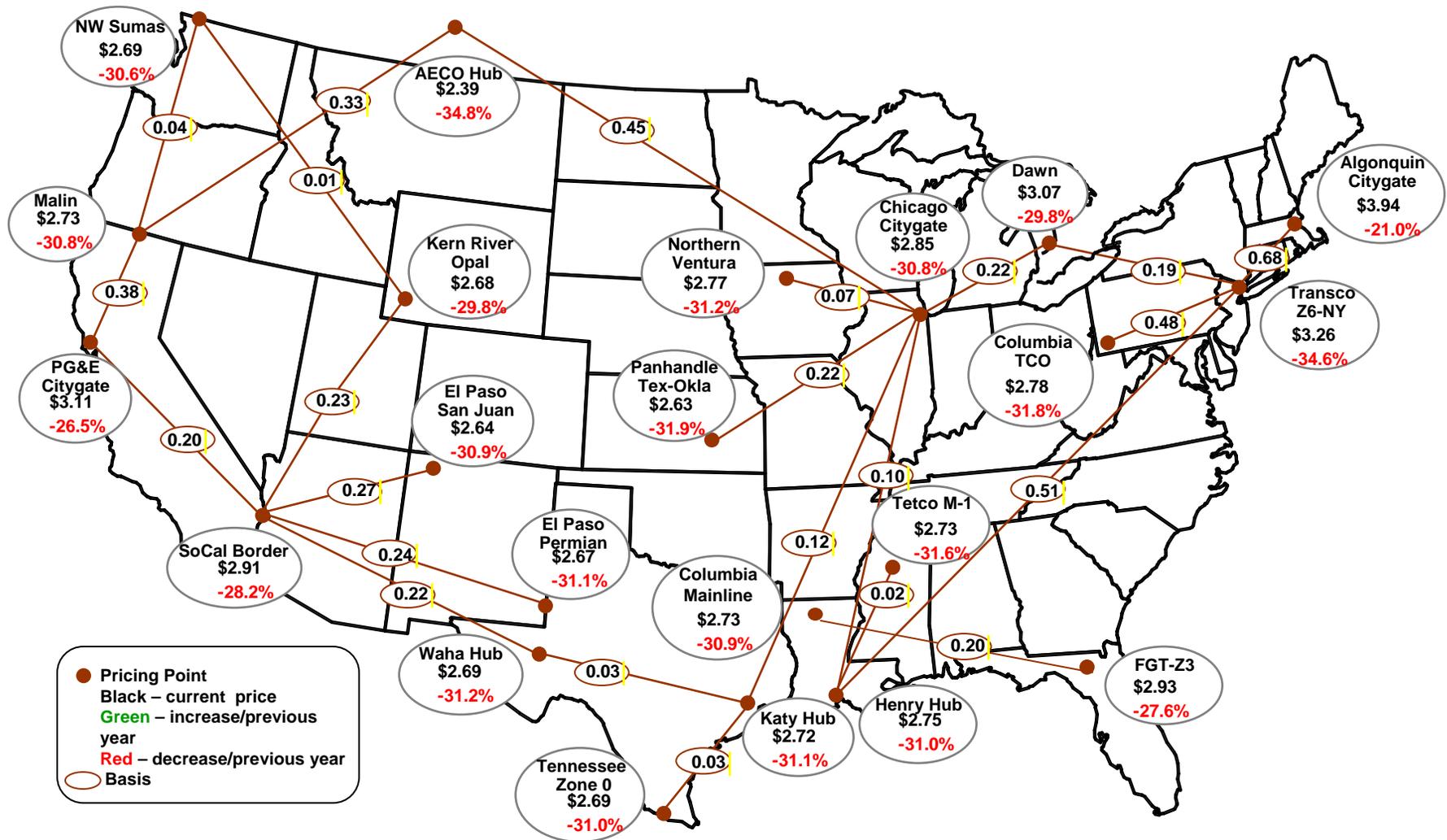
Source: Derived from NOAA data.

Updated: October 16, 2013



Natural Gas and Fuels Markets

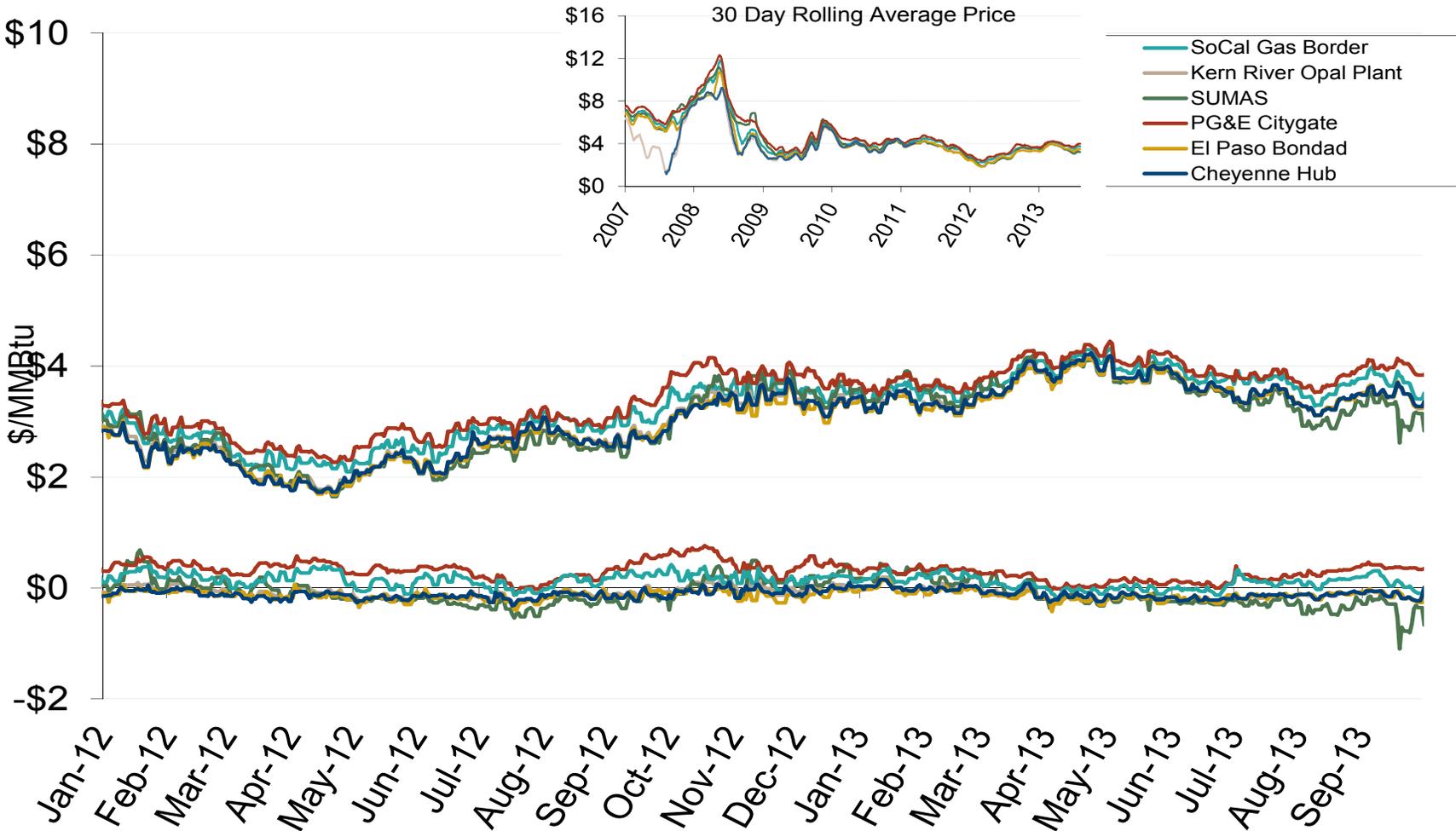
Average Spot Gas Prices, 2012 (\$MMBtu)



Source: Derived from *Platts* data.
October 2013 Western Snapshot Report

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Western Day-Ahead Hub Spot Prices and Basis



Source: Derived from Platts data
October 2013 Western Snapshot Report

Updated: October 03, 2013

Western Natural Gas Market: Average Basis to Henry Hub

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Western Monthly Average Basis Value to Henry Hub



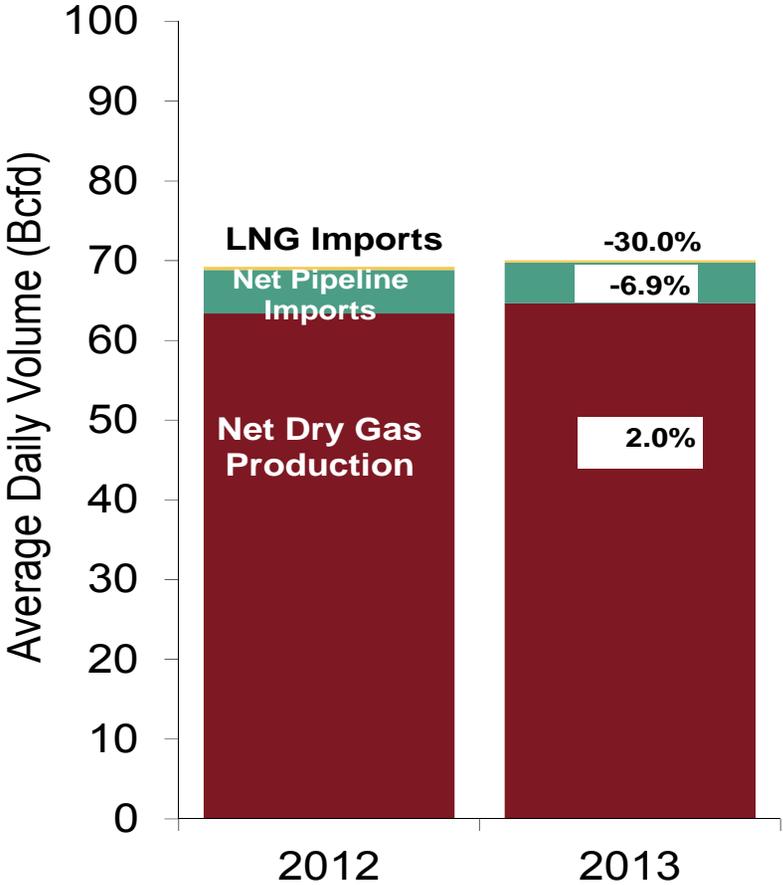
Source: Derived from Platts data
October 2013 Western Snapshot Report

Updated: October 03, 2013

U.S. NG Supply and Demand 2012 vs. 2013: January - September

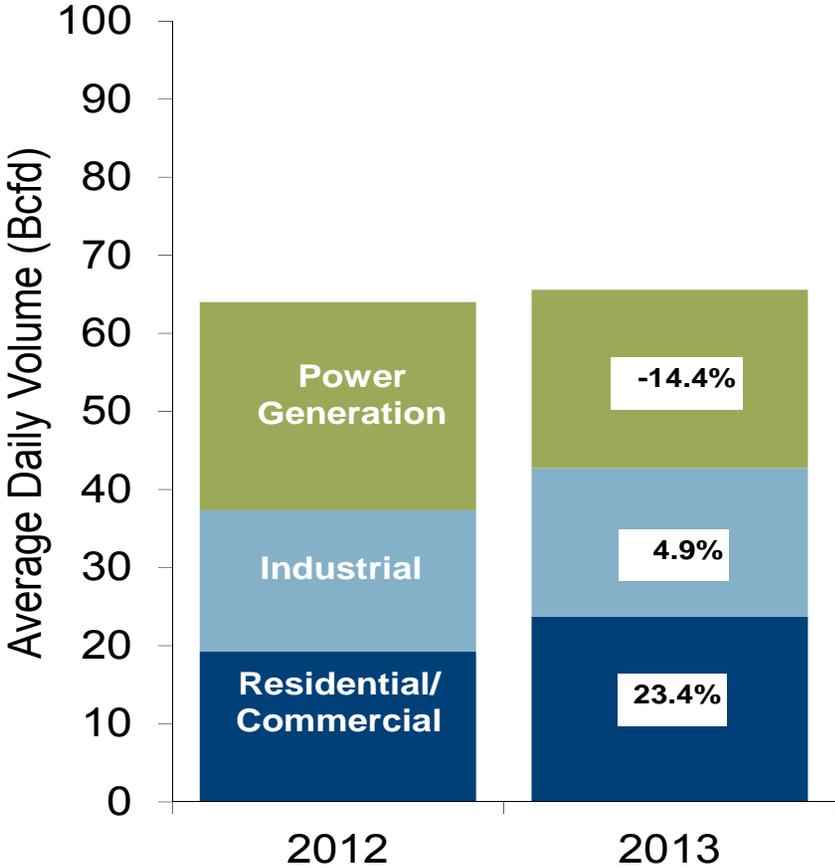
US Natural Gas Supply

Total Change in Supply 0.8%



US Natural Gas Demand

Total Change in Demand 1.4%

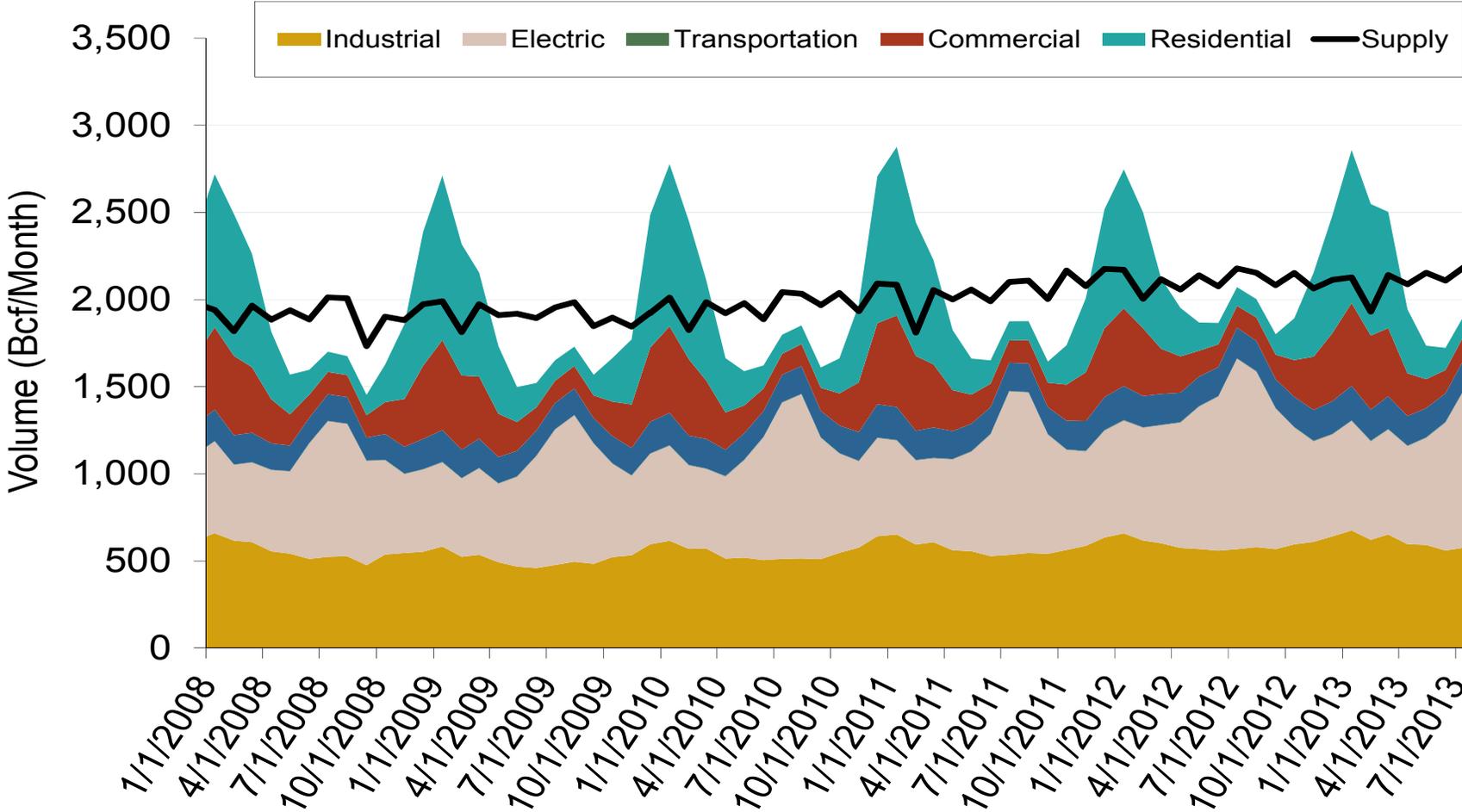


Note: Balance includes all amounts not attributable to other categories.

Source: Derived from *Bentek Energy* data

October 2013 Western Snapshot Report

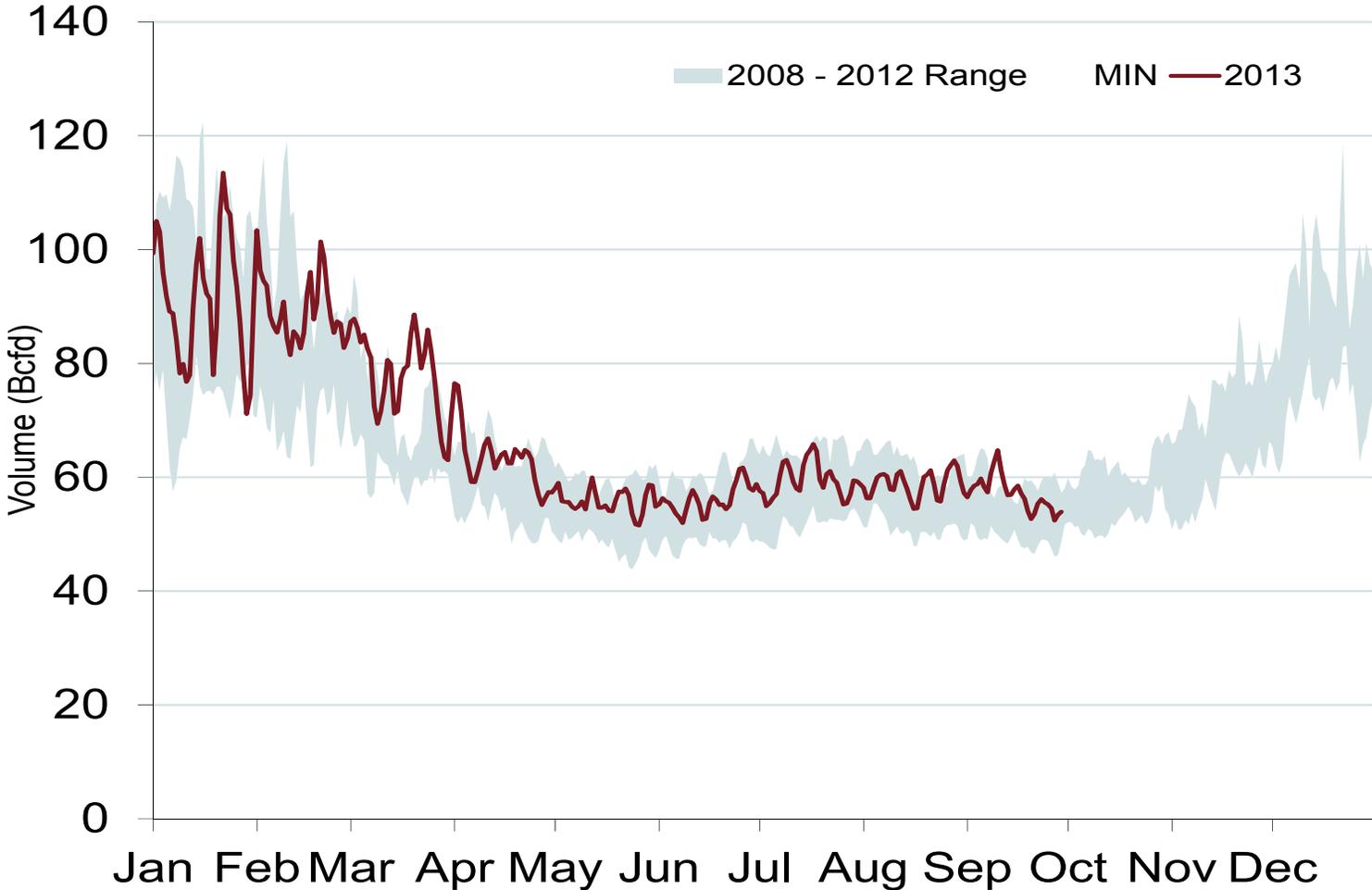
Annual U.S. Natural Gas Consumption by Sector



Notes: Supply includes lower 48 state production, net pipeline imports, and LNG imports

Source: Derived from EIA data

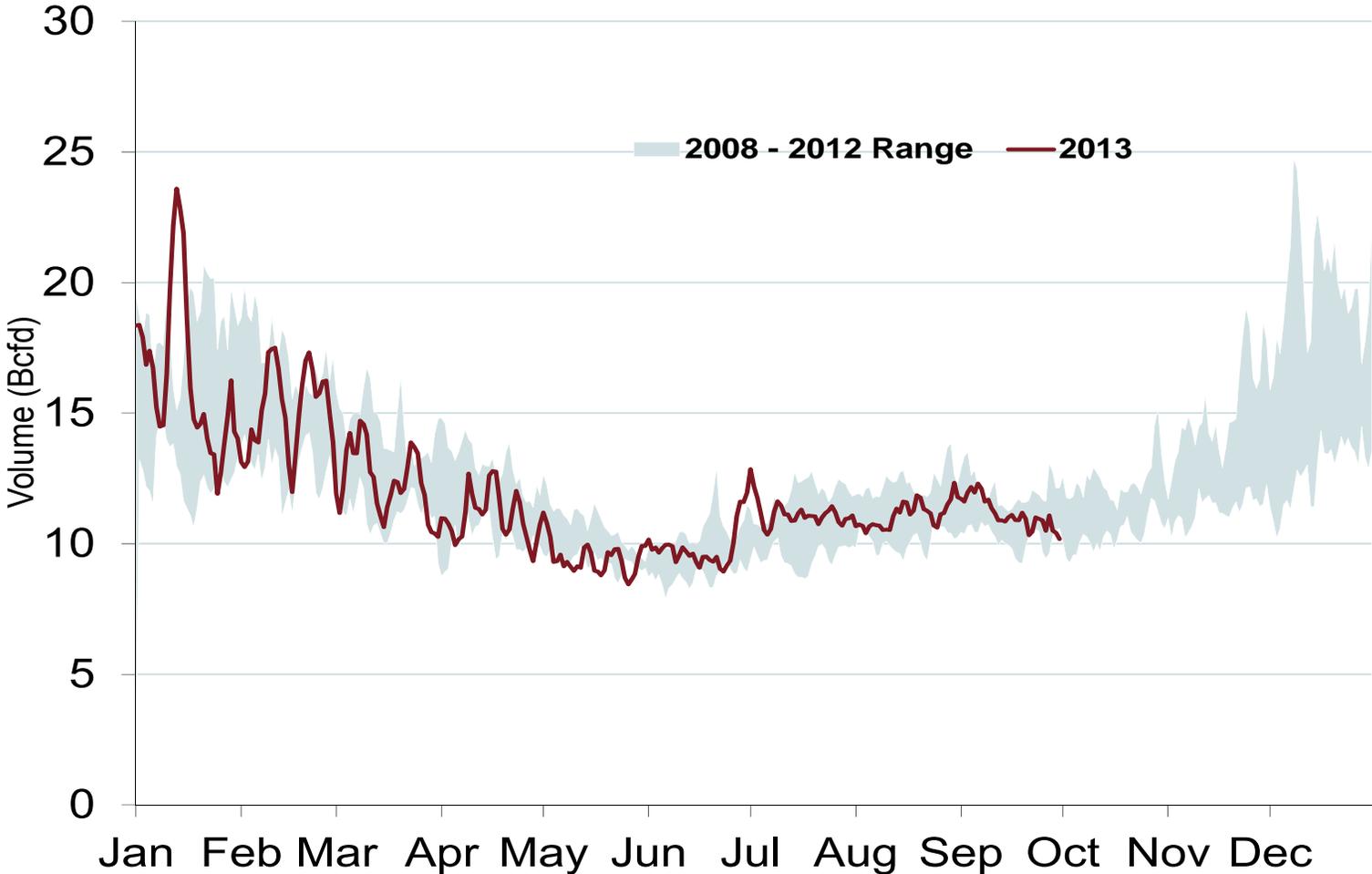
Total U.S. Natural Gas Demand All Sectors



Source: Derived from *Bentek Energy* data
October 2013 Western Snapshot Report

Updated: October 07, 2013

Daily Western Natural Gas Demand All Sectors

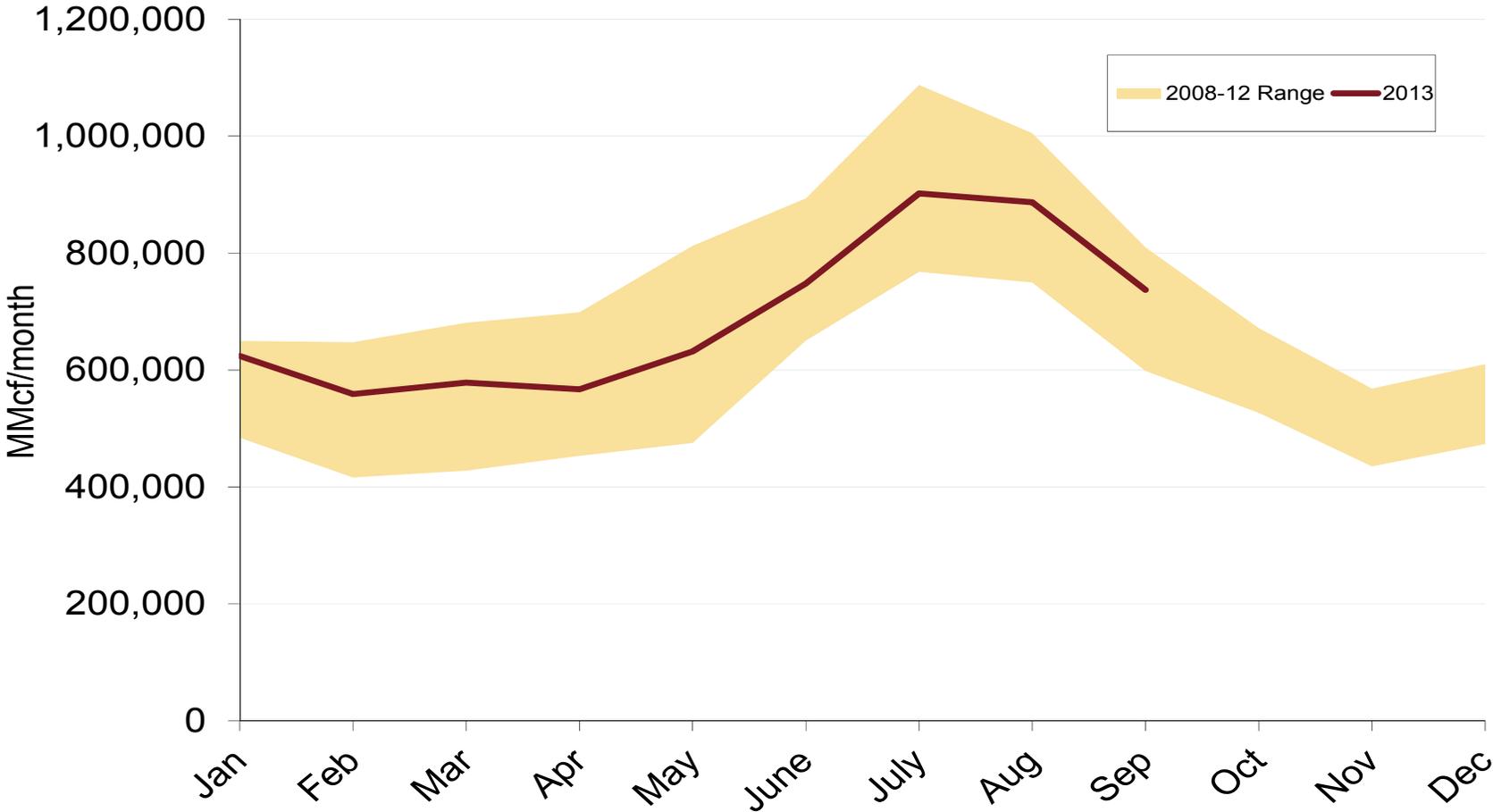


Source: Derived from *Bentek Energy* data
October 2013 Western Snapshot Report

Updated: October 07, 2013

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U.S. Natural Gas Consumption for Power Generation

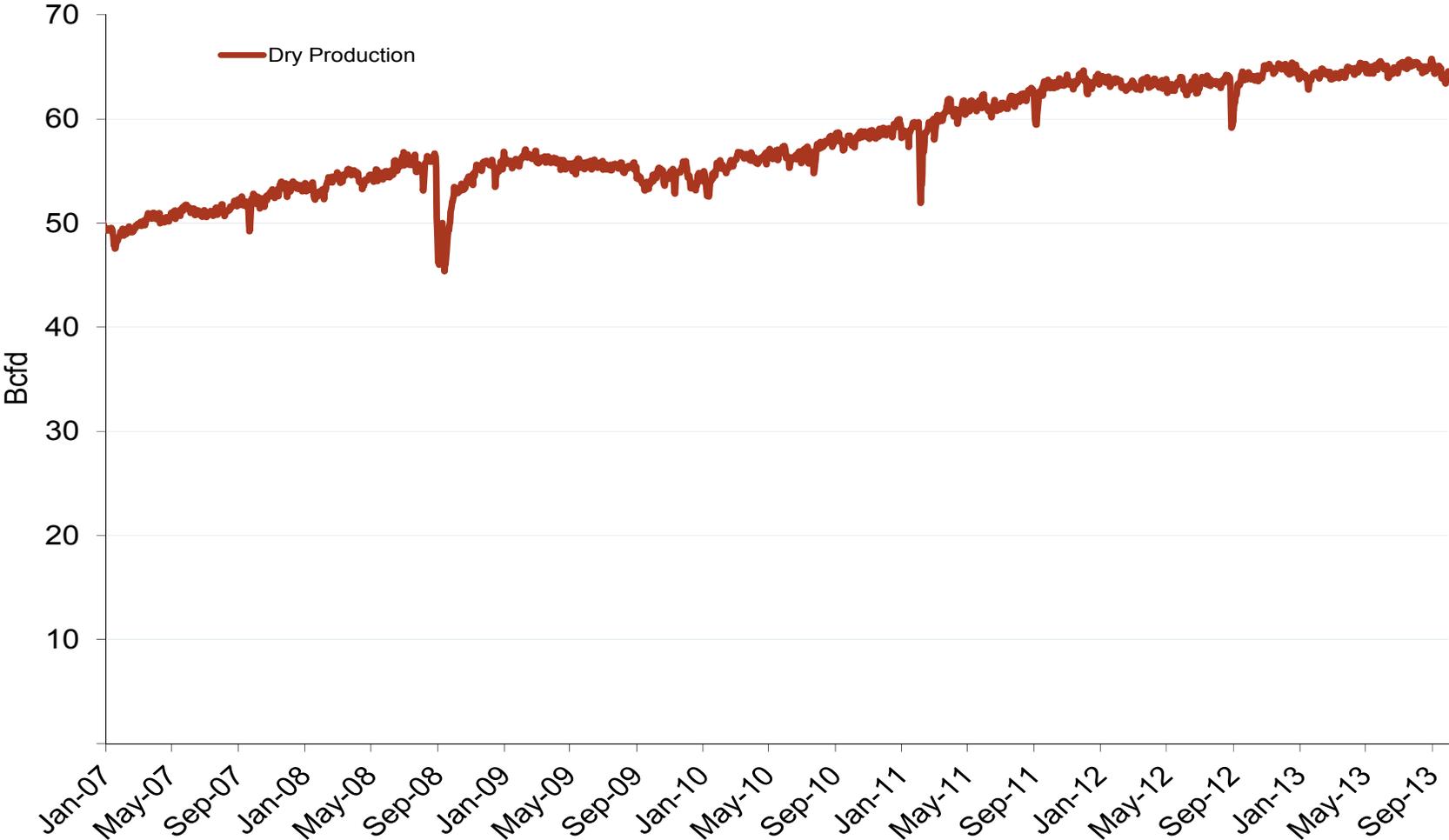


Source: Derived from *Bentek Energy* data
October 2013 Western Snapshot Report

Updated: October 07, 2013

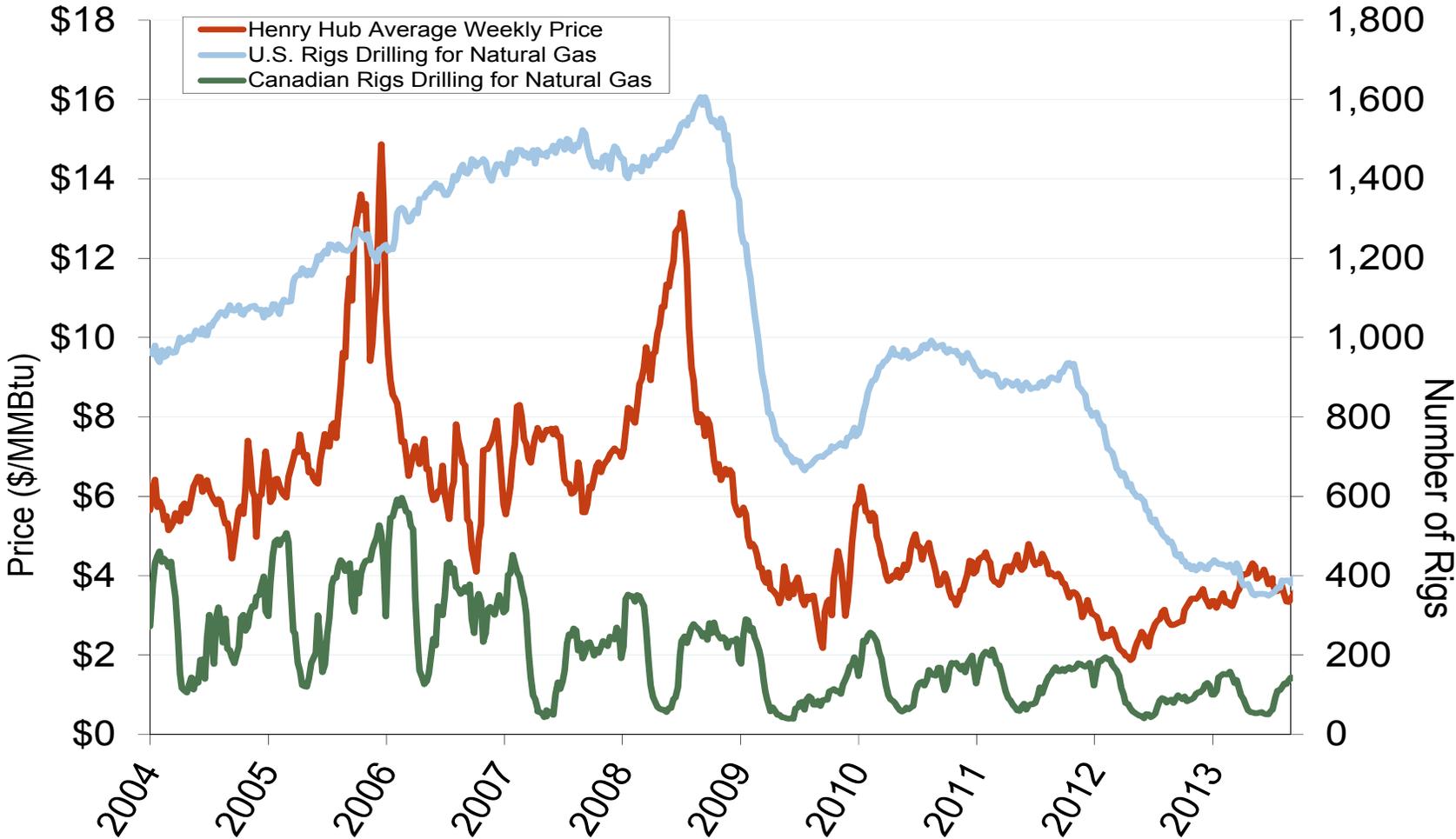
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Monthly U.S. Dry Gas Production – Lower 48 States



Note: Prior to July 2010, chart was derived from a combination of EIA and Bentek Energy data
Source: Derived from Bentek Energy data
October 2013 Western Snapshot Report

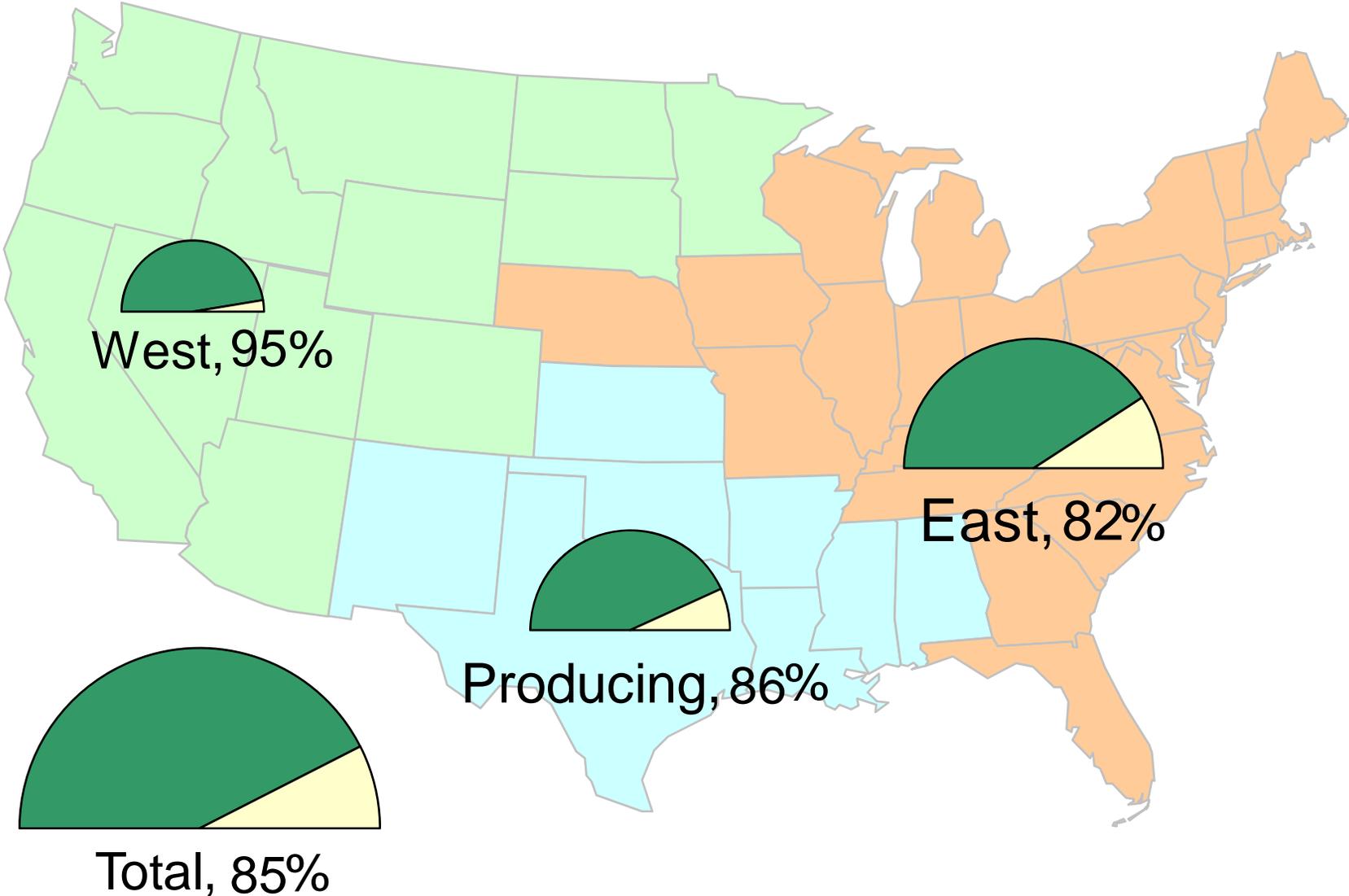
U.S. and Canadian NG Drilling Rig Count and Daily Spot Prices



Source: Derived from *Platts* and *Baker Hughes* data
October 2013 Western Snapshot Report

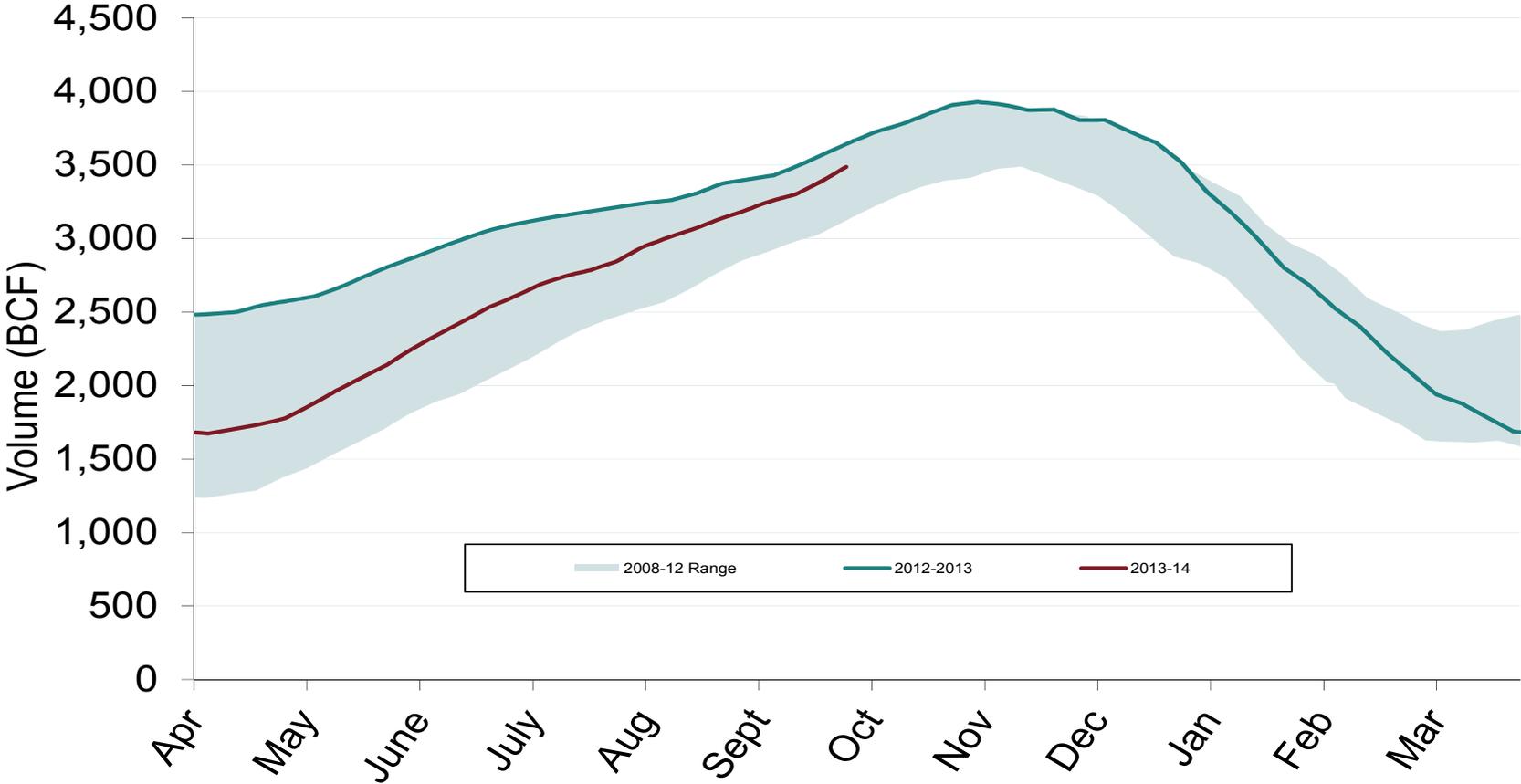
Updated: October 07, 2013

Natural Gas Storage Inventories – September 30, 2013



Source: Derived from EIA Storage and Estimated Working Gas Capacity data
October 2013 Western Snapshot Report

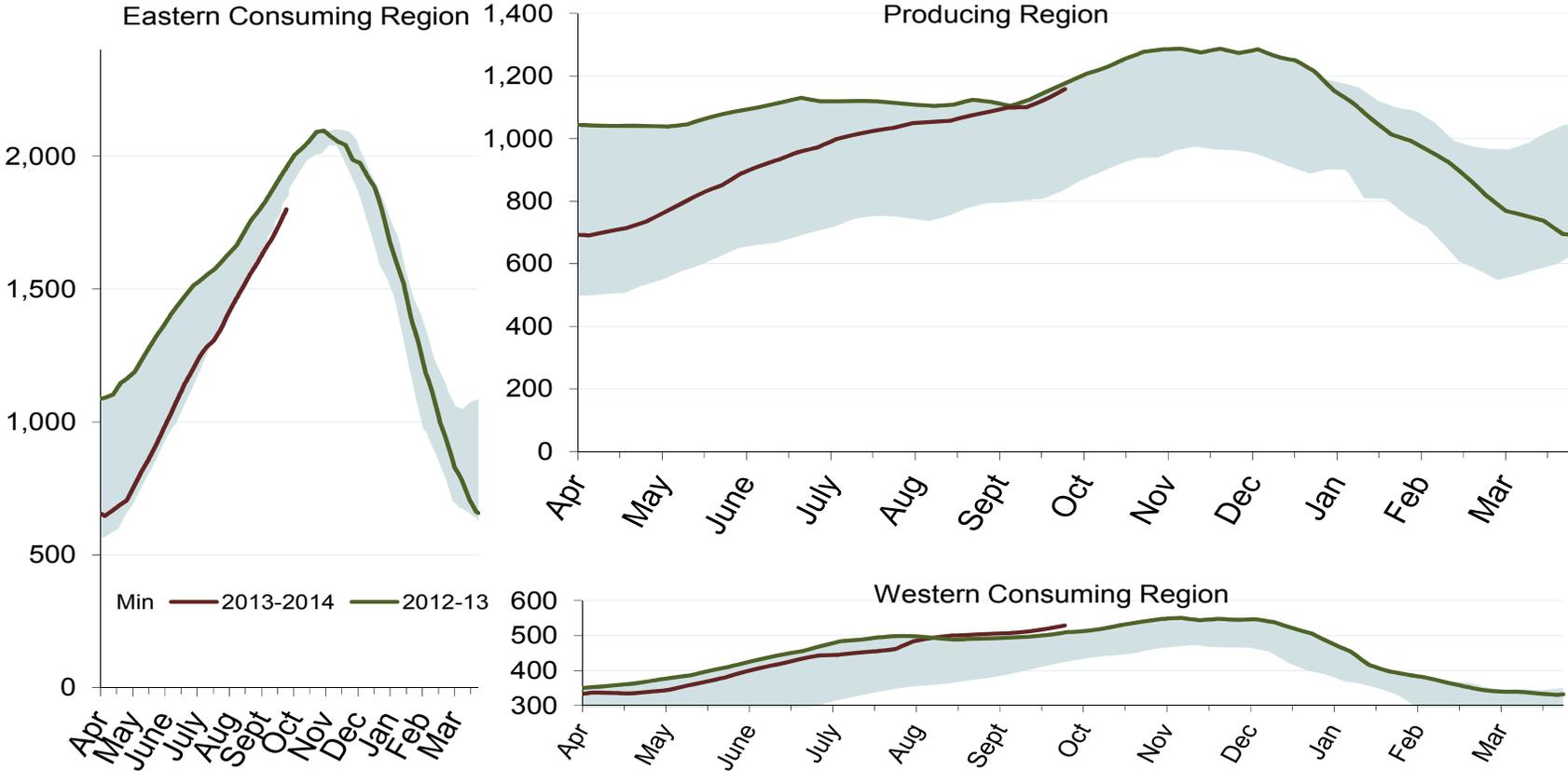
Total U.S. Working Gas in Storage



Source: Derived from EIA data
October 2013 Western Snapshot Report

Updated: October 07, 2013

Regional Totals of Working Gas in Storage



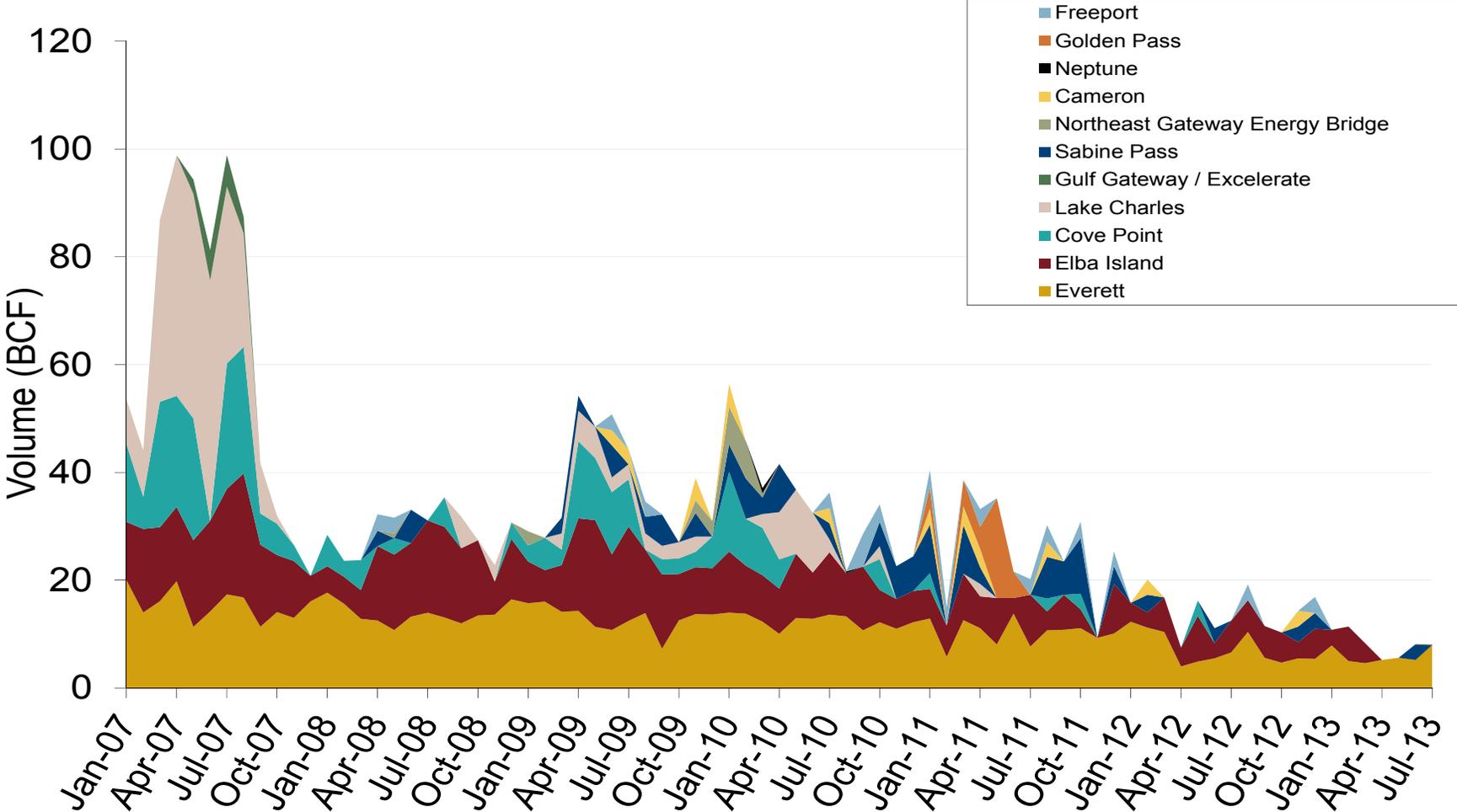
Source: Derived from EIA data
October 2013 Western Snapshot Report

Updated: October 07, 2013

World LNG Estimated November 2013 Landed Prices



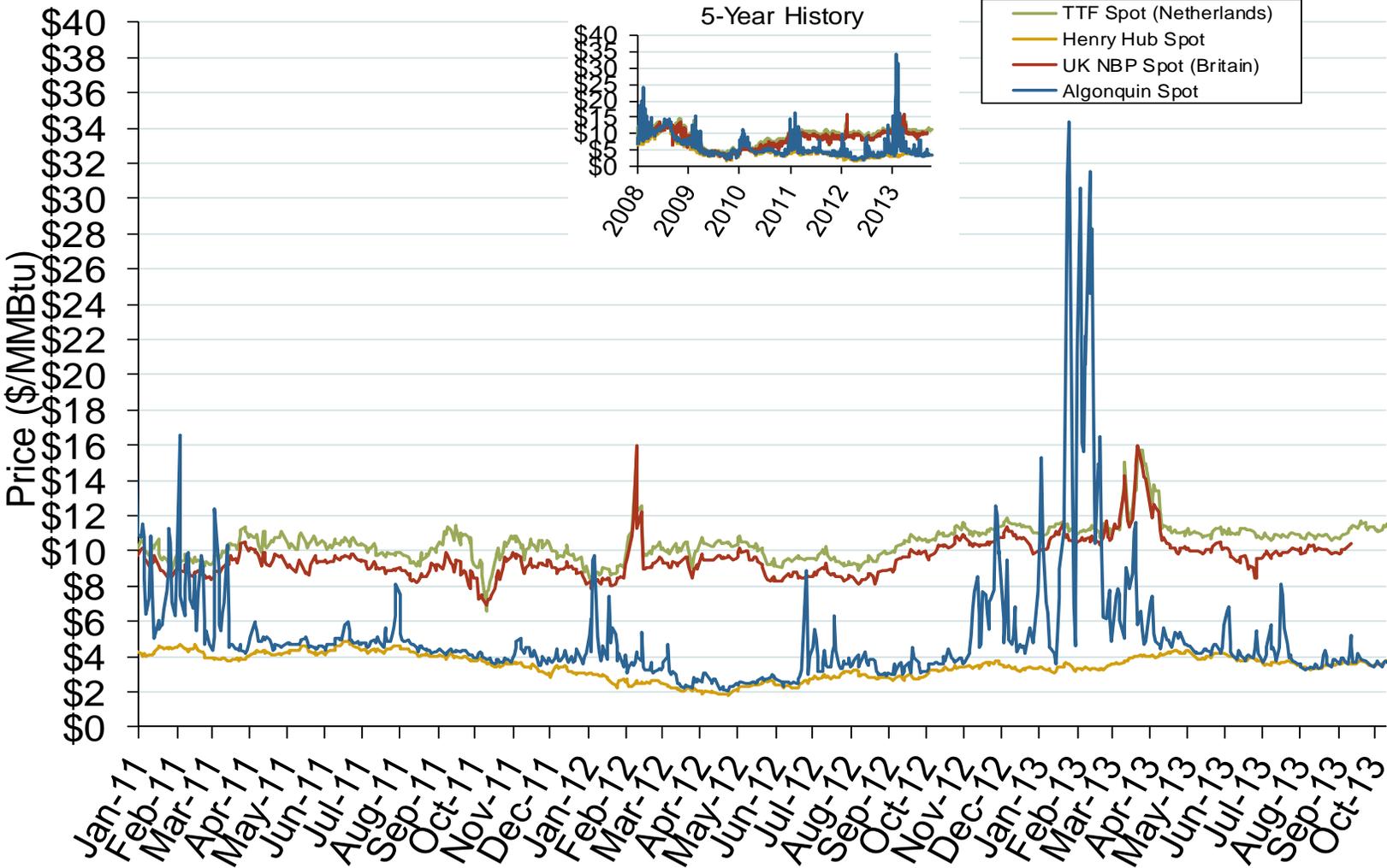
Monthly Gas Imports at Existing U.S. LNG Facilities



Source: Derived from DOE Office of Fossil Energy data
October 2013 Western Snapshot Report

Updated: October 07, 2013

Atlantic Basin European and US Spot Natural Gas Prices



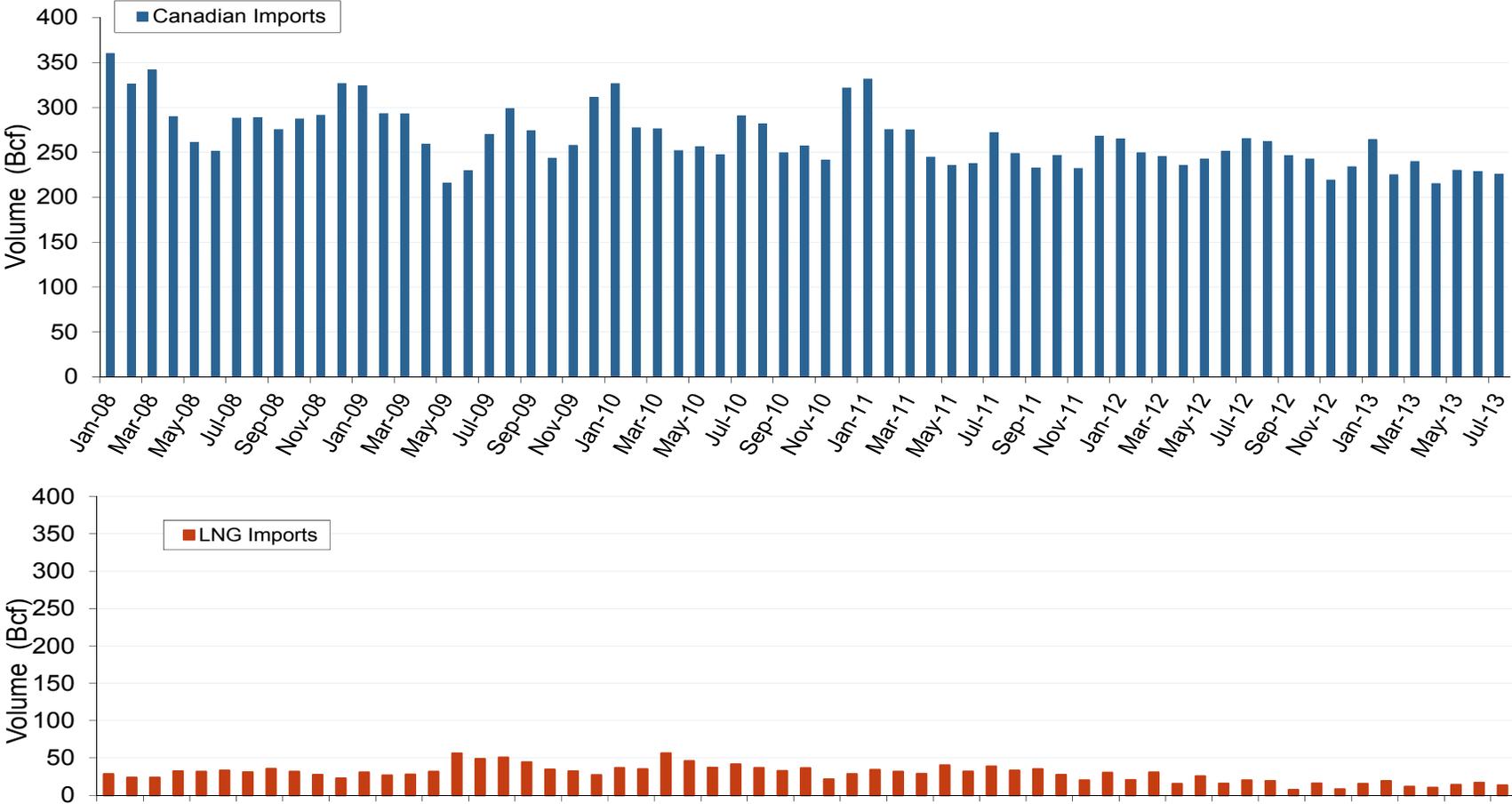
Source: Derived from *Bloomberg* and *ICE* data
October 2013 Western Snapshot Report

Updated October 10, 2013

Natural Gas Overview: Natural Gas Imports

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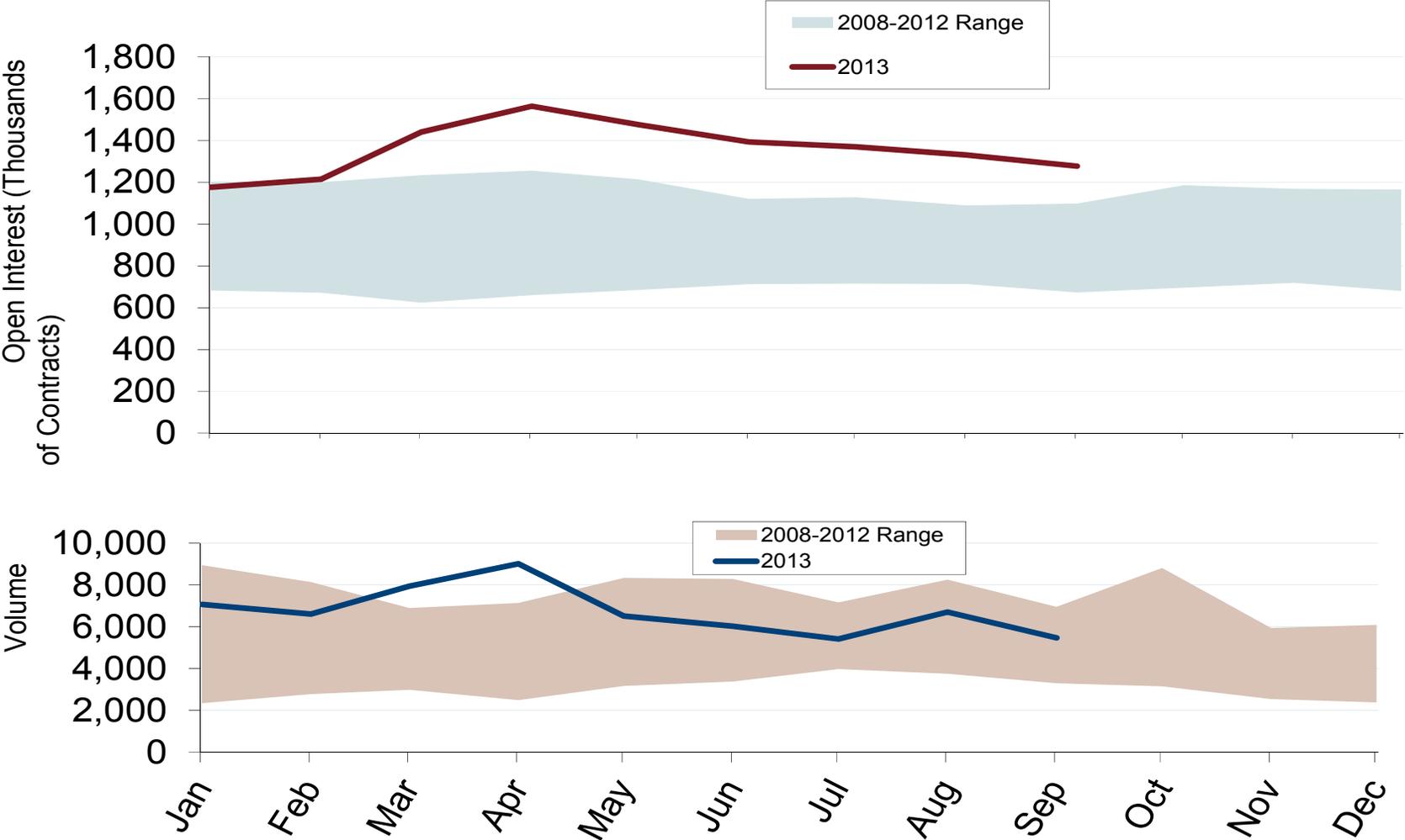
Canadian and LNG Natural Gas Imports Into the U.S.



Source: EIA Natural Gas Monthly
October 2013 Western Snapshot Report

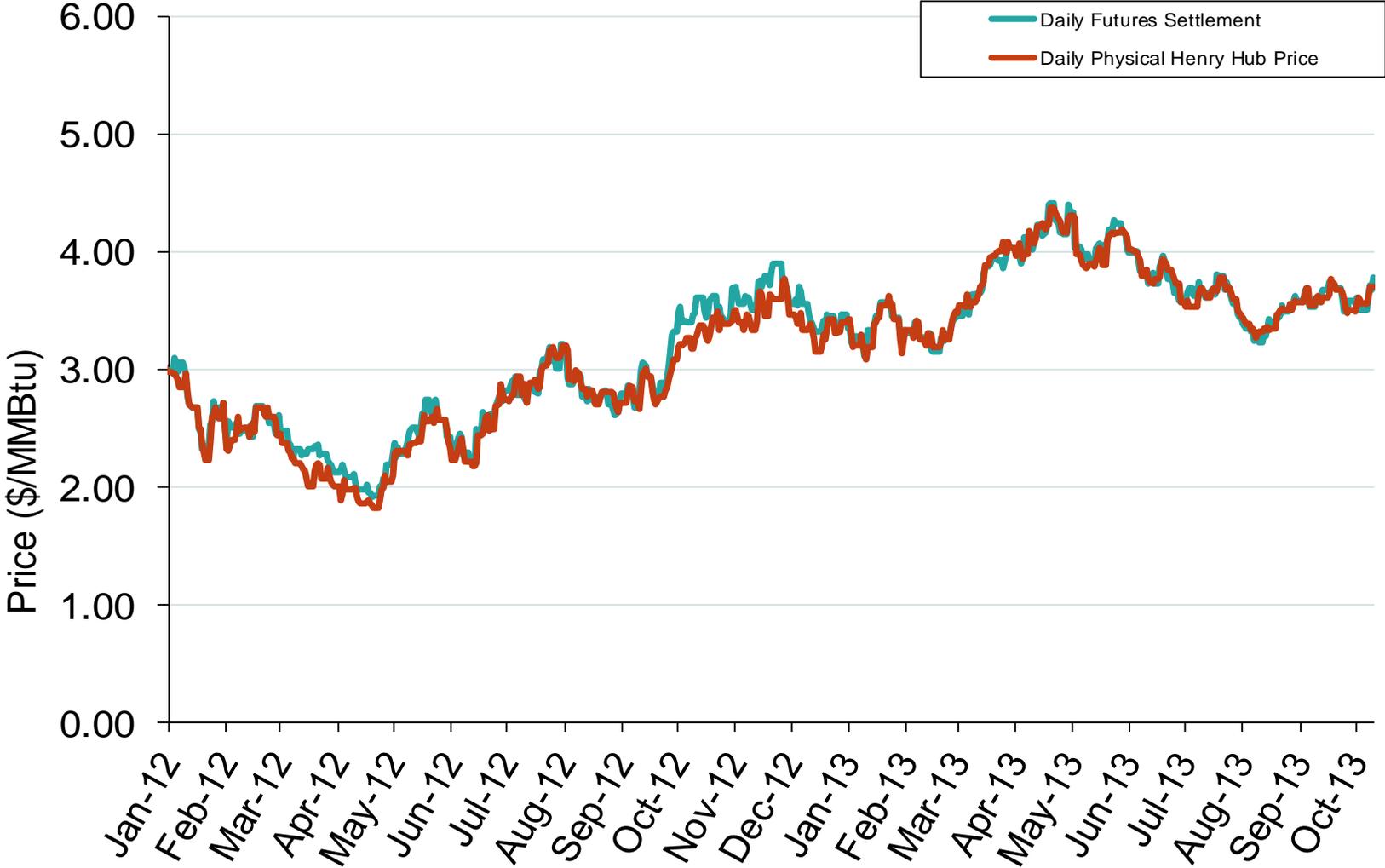
Updated: October 07, 2013

Nymex NG Futures Month-End Open Interest and Monthly Volume



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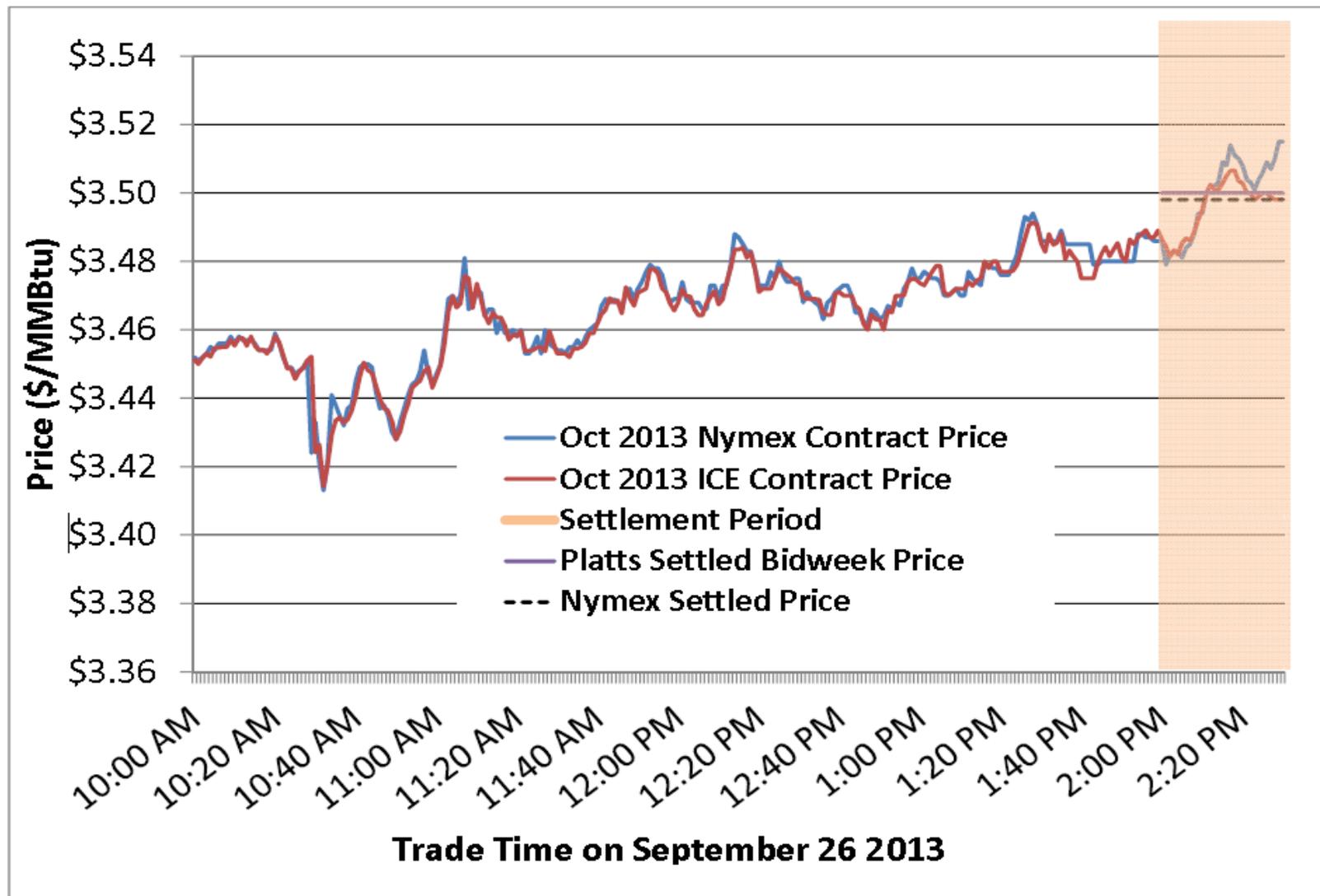
Daily Physical Index Price & Daily Futures Settlement Price



Source: Derived from *Bloomberg* data
October 2013 Western Snapshot Report

Updated October 10, 2013

Nymex and ICE Contract Final Settlement - October 2013



Notes: The final settlement day for this Nymex contract is three business days before the start of the contract term (which is the 1st day of the month)

Source: Derived from *Nymex* and *ICE* data

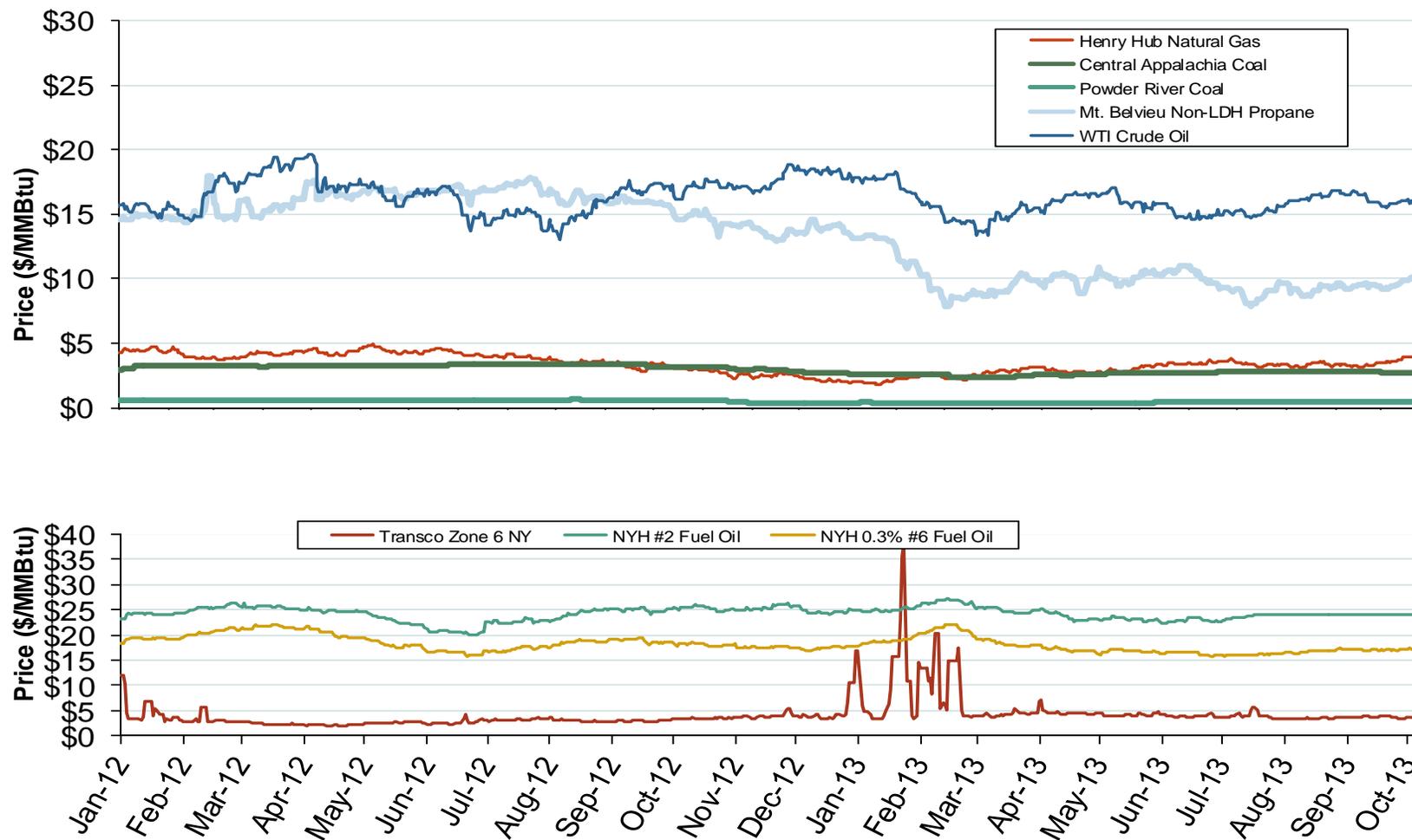
October 2013 Western Snapshot Report

Updated: October 10, 2013

Other Fuels Market: Fossil Fuel Prices

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Oil, Coal, Natural Gas and Propane Daily Spot Prices



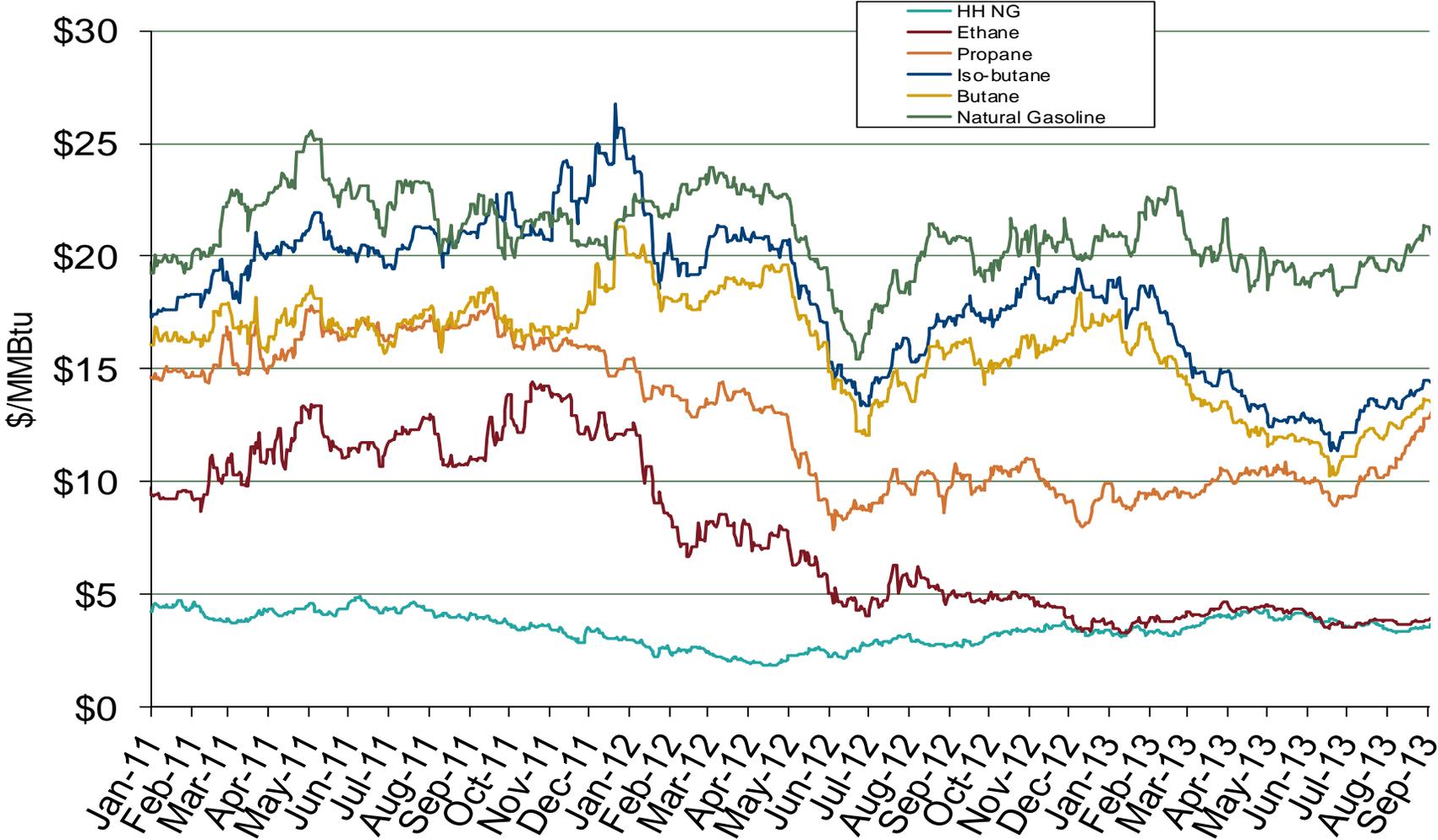
Notes: Coal prices are quoted in \$/ton. Conversion factors to \$/MMBtu are based on contract specifications of 12,000 btus/pound for Central Appalachian coal and 8800 btus/pound for Powder River Basin coal

Source: Derived from ICE and Bloomberg data
 October 2013 Western Snapshot Report

Updated October 10, 2013

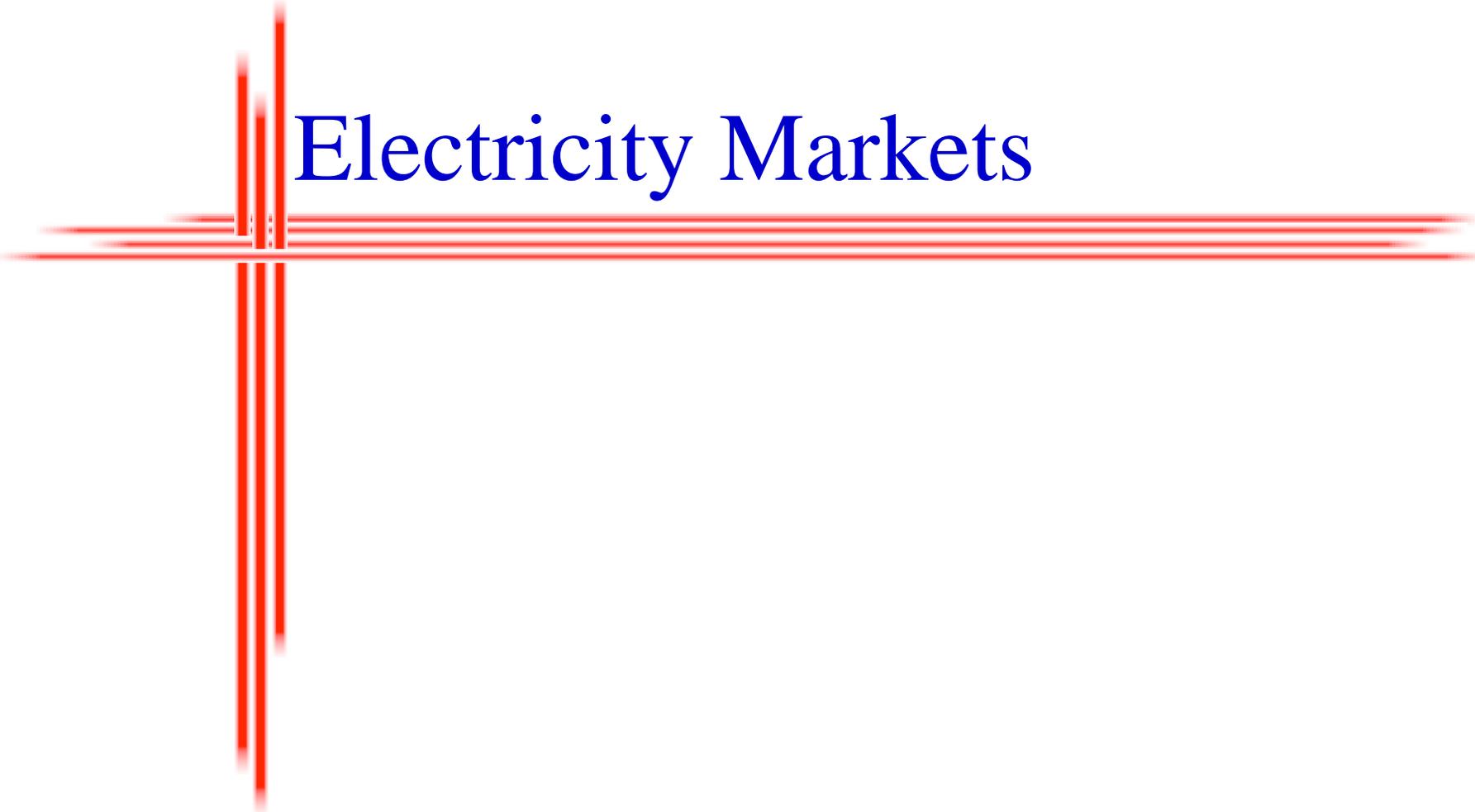
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U.S. Natural Gas vs. Natural Gas Liquids (NGL) Prices



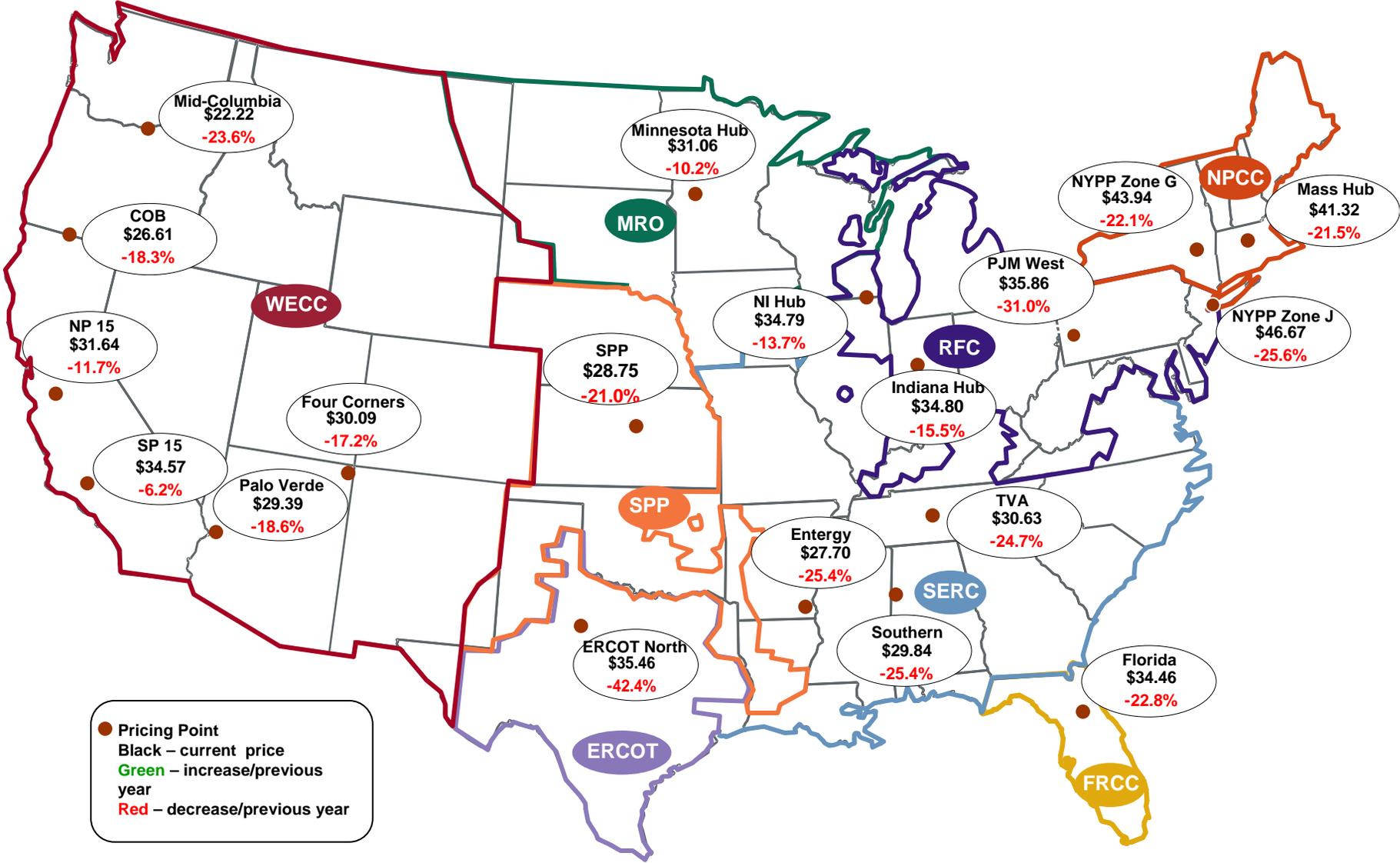
Source: Derived from Bloomberg Data
October 2013 Western Snapshot Report

Updated October 10, 2013



Electricity Markets

Average On-Peak Spot Electric Prices 2012 (\$/MWh)



Source: Derived from *Platts* data.
October 2013 Western Snapshot Report

Updated: January 6, 2013

Regional Spot Prices: 2010-2012

	On-peak Spot Prices (\$/MWh)					Off-peak Spot Prices (\$/MWh)				
	2010	2011	2012	% Change 10-11	% Change 11-12	2010	2011	2012	% Change 10-11	% Change 11-12
Northeast										
Mass Hub	56.18	52.64	41.32	-6.3%	-21.5%	38.84	37.95	28.36	-2.3%	-25.3%
Ny Zone G	59.48	56.41	43.94	-5.2%	-22.1%	39.47	38.26	28.23	-3.1%	-26.2%
NY Zone J	65.76	62.71	46.67	-4.6%	-25.6%	40.37	39.19	28.63	-2.9%	-27.0%
NY Zone A	43.89	41.52	35.86	-5.4%	-13.6%	34.05	32.65	24.93	-4.1%	-23.6%
PJM West	53.68	51.99	35.86	-3.2%	-31.0%	35.81	33.94	26.29	-5.2%	-22.5%
Southeast										
VACAR	43.24	44.44	32.65	2.8%	-26.5%	29.18	30.23	22.86	3.6%	-24.4%
Southern	42.61	39.97	29.83	-6.2%	-25.4%	29.51	27.98	21.51	-5.2%	-23.1%
TVA	41.79	40.68	30.63	-2.7%	-24.7%	27.43	27.55	21.25	0.4%	-22.9%
Florida	50.81	44.62	34.46	-12.2%	-22.8%	31.59	31.27	23.49	-1.0%	-24.9%
Entergy	40.07	37.14	27.70	-7.3%	-25.4%	24.87	24.52	19.16	-1.4%	-21.9%
Midwest										
Indiana*	41.51	41.17	34.80	-0.8%	-15.5%	24.34	25.86	22.14	6.2%	-14.4%
Michigan Hub	43.68	42.73	36.27	-2.2%	-15.1%	26.84	27.52	24.10	2.5%	-12.4%
Minnesota Hub	36.86	34.57	31.06	-6.2%	-10.2%	17.61	16.39	17.49	-6.9%	6.7%
NI Hub	40.85	40.31	34.79	-1.3%	-13.7%	21.70	22.78	21.04	5.0%	-7.7%
Illinois Hub	38.22	38.12	32.12	-0.2%	-15.8%	20.44	22.20	20.00	8.6%	-9.9%
MA PP South	37.60	35.48	29.42	-5.6%	-17.1%	21.76	19.90	18.93	-8.5%	-4.9%
South Central										
SPP North	38.71	36.41	28.75	-5.9%	-21.0%	21.51	20.42	18.73	-5.1%	-8.3%
ERCOT North	41.15	61.55	35.46	49.6%	-42.4%	26.97	25.74	18.63	-4.6%	-27.6%
Southwest										
Four Corners	39.68	36.34	30.09	-8.4%	-17.2%	27.02	20.45	20.64	-24.3%	0.9%
Palo Verde	38.76	36.10	29.39	-6.9%	-18.6%	27.72	21.57	20.78	-22.2%	-3.7%
Mead	40.11	36.92	30.75	-8.0%	-16.7%	29.37	22.34	21.97	-23.9%	-1.7%
Northwest										
Mid-C	35.90	29.10	22.22	-19.0%	-23.6%	29.19	19.98	18.33	-31.6%	-8.2%
COB	38.84	32.55	26.61	-16.2%	-18.3%	29.86	19.92	17.92	-33.3%	-10.0%
California										
NP15	40.08	35.81	31.64	-10.6%	-11.7%	29.89	21.26	22.53	-28.9%	6.0%
SP15	40.21	36.87	34.57	-8.3%	-6.2%	29.14	21.78	23.28	-25.3%	6.9%

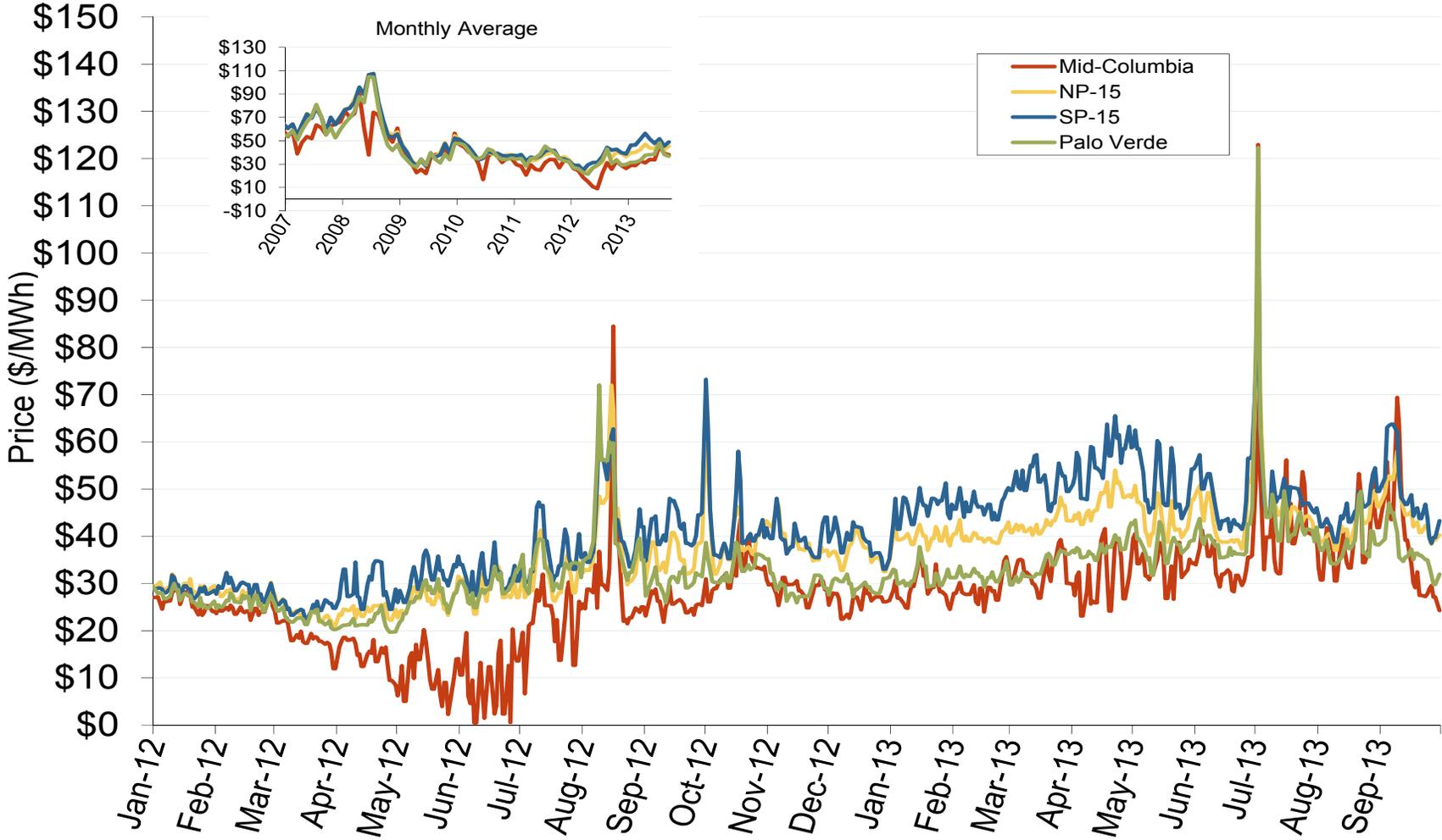
Note: Effective January 1, 2012, Platts replaced the Cinergy Hub with the Indiana Hub.

October 2013 Western Snapshot Report

California Annual Average Bilateral Prices

Annual Average Day Ahead On Peak Prices (\$/MWh)						
	2008	2009	2010	2011	2012	5-Year Avg
NP15	\$80.14	\$39.29	\$40.08	\$35.81	\$32.02	\$45.49
SP15	\$79.36	\$38.31	\$40.21	\$36.87	\$34.91	\$45.96

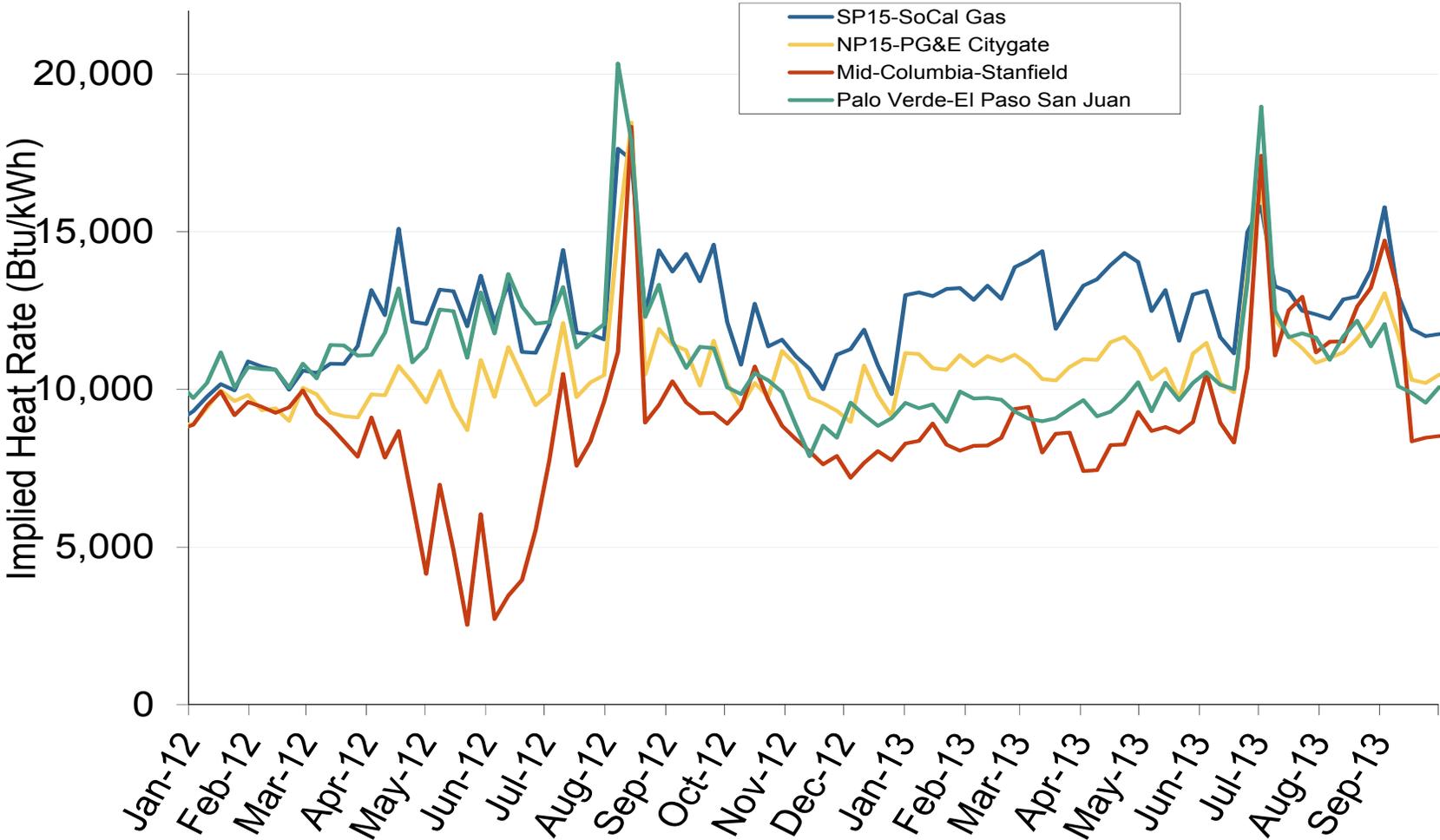
Western Daily Index Day-Ahead On-Peak Prices



Southwest Electric Market: Western Implied Heat Rates

Federal Energy Regulatory Commission • Market Oversight • www.ferc.gov/oversight

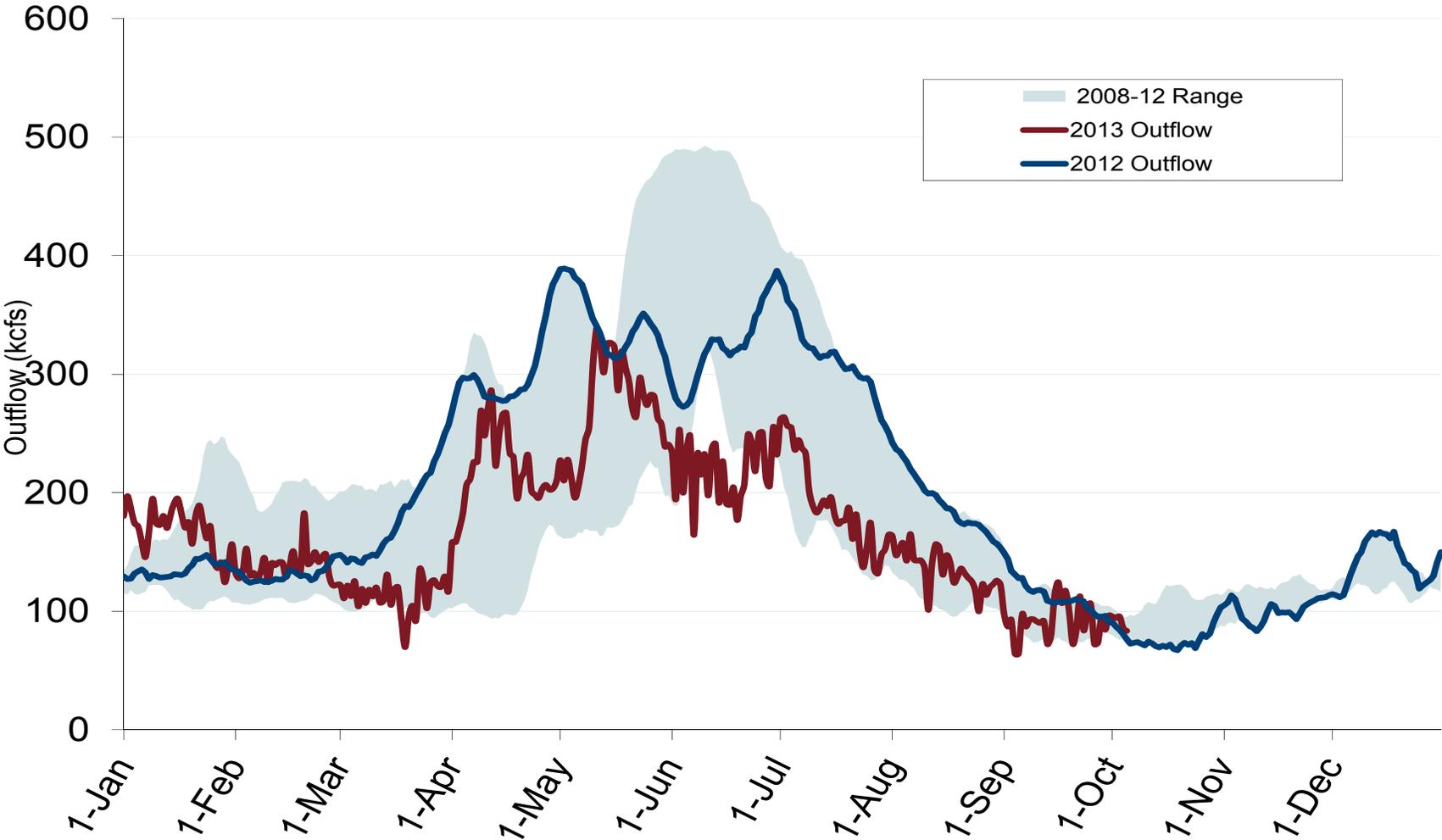
Implied Heat Rates at Western Trading Points - Weekly Avgs.



Source: Derived from *Platts* on-peak electric and natural gas price data
October 2013 Western Snapshot Report

Updated: October 03, 2013

Stream Flows at the Dalles Dam



Notes: Trend lines are 7-day moving averages

Source: Derived from USACE data

October 2013 Western Snapshot Report

Updated: October 07, 2013

Pacific/Northwest Hydro and Snowpack Levels

Snowpack Drops in March			
State/Region	Snow Water Equivalent (% of Historic Median)		
	One Year Ago	One Month Ago	Current
	(4/1/2012)	(3/1/2013)	(4/1/2013)
California	59%	76%	60%
Idaho	117%	87%	84%
Montana	115%	95%	92%
Oregon	120%	98%	84%
Washington	148%	119%	112%
Columbia River Basin	126%	100%	94%

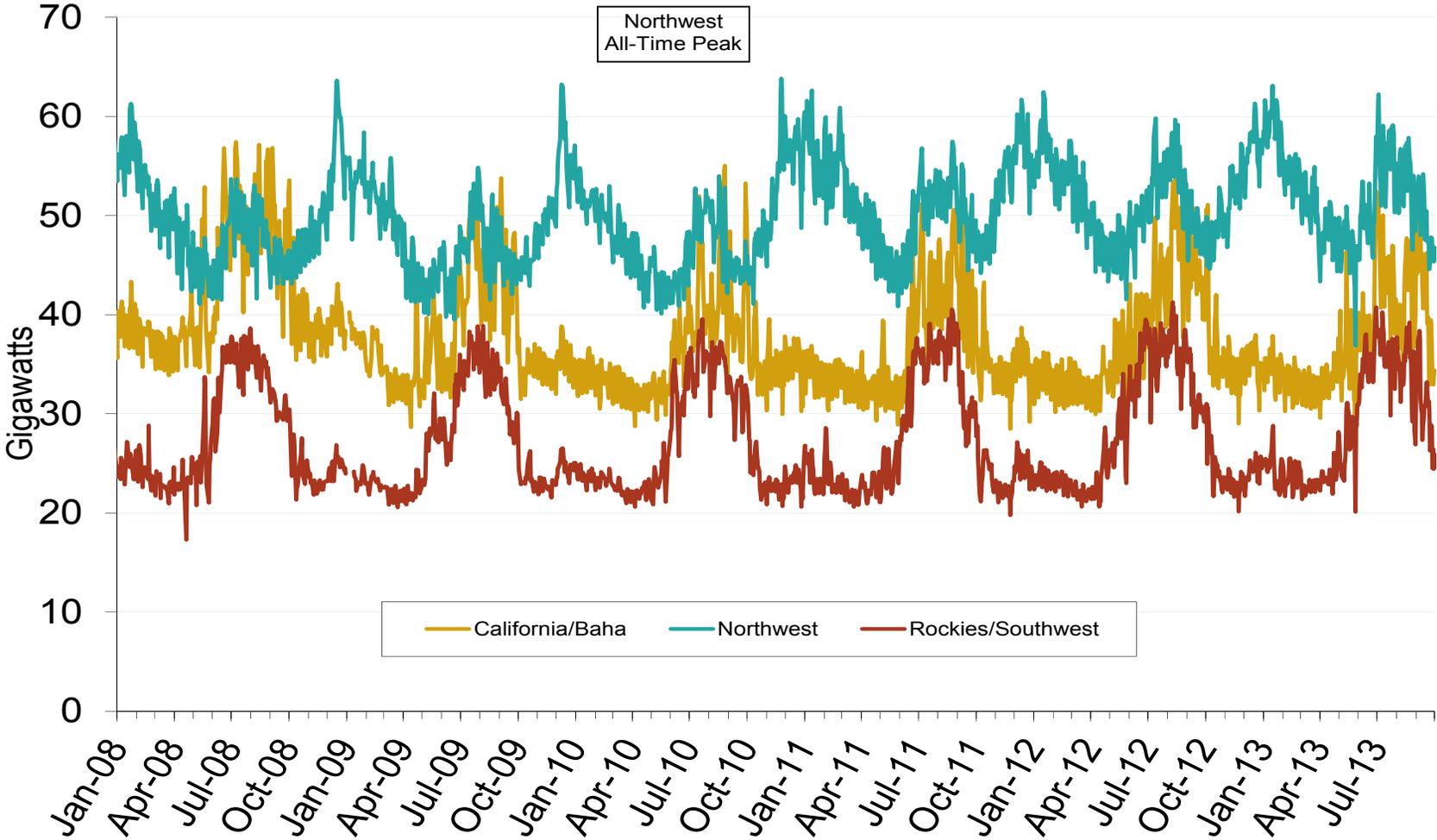
Notes:

Snow Water Equivalent represents the depth of water in the snowpack, if the snowpack were melted, expressed in inches. The percentage of median is the ratio of current snow water equivalents compared to the median for the same day 1981-2010.

Source: U.S. Department of Agriculture Natural Resources Conservation Service

Updated: April 25, 2013

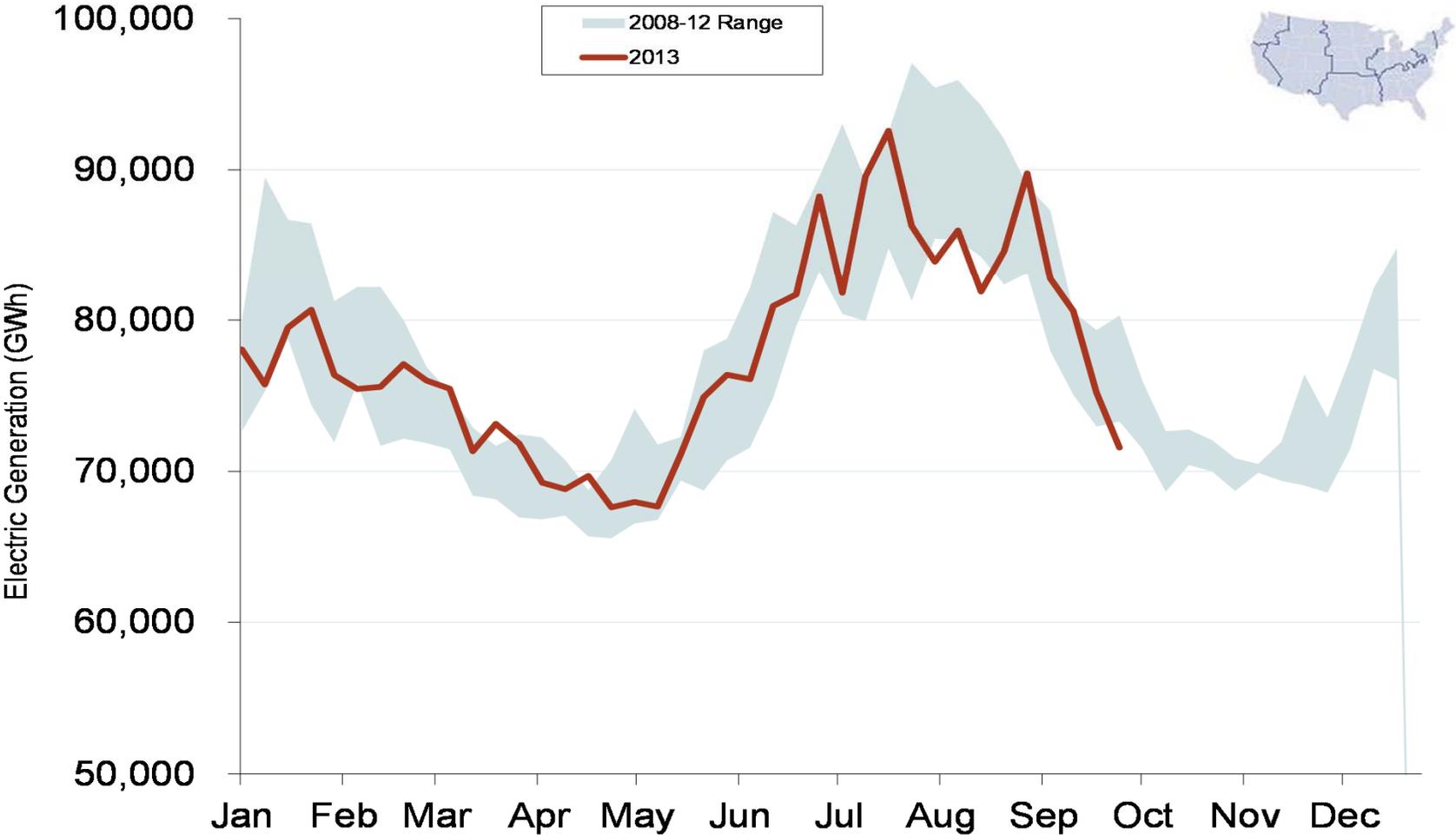
Western Daily Actual Peak Demand



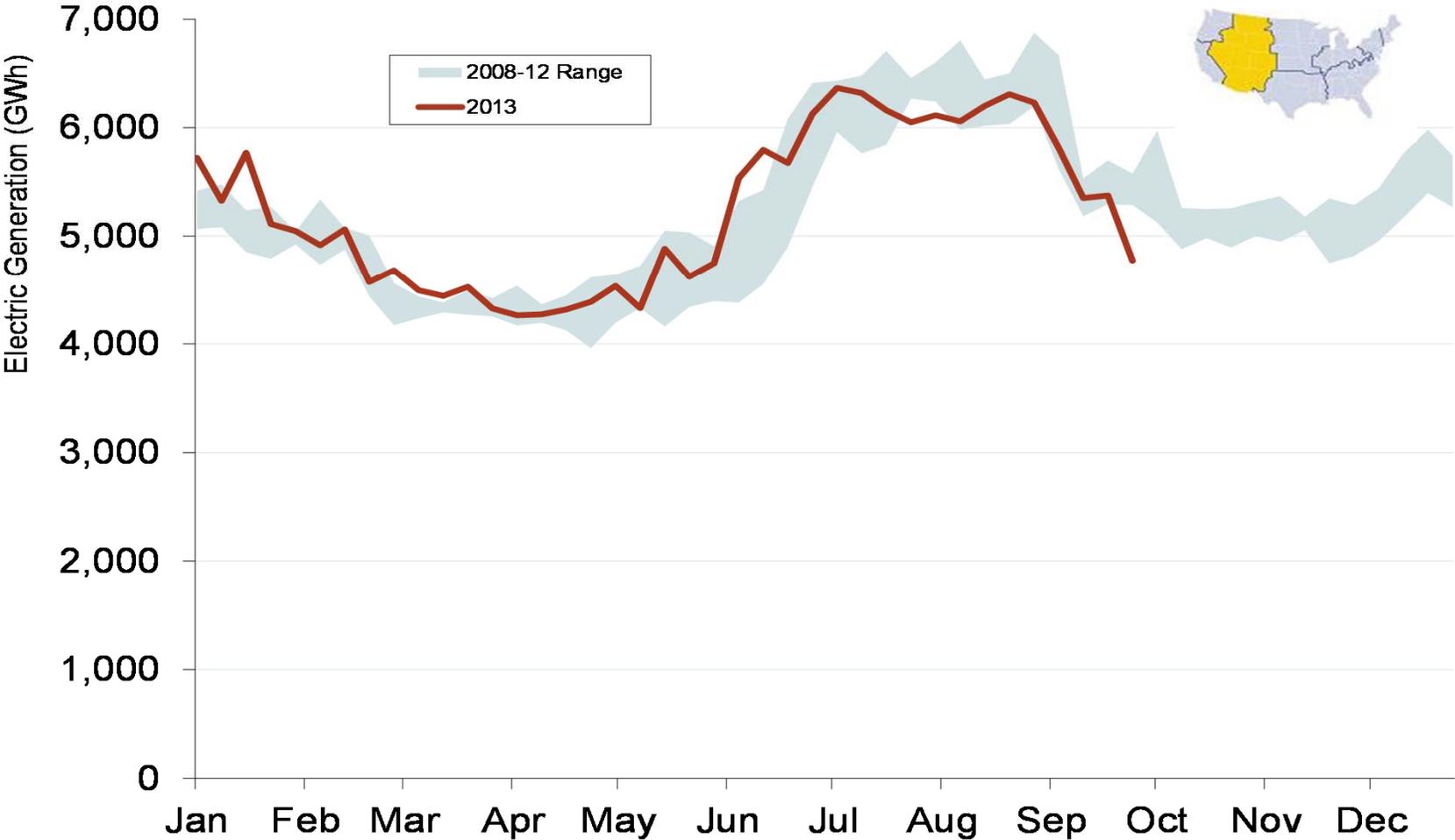
Notes: Data prior to 9/14/2010 does not include weekends and holidays. Some data for 12/31/2008 – 1/9/2009 are not available from WECC

Source: Derived from WECC Daily Report data available at <http://wecc.biz>

Weekly U.S. Electric Generation Output



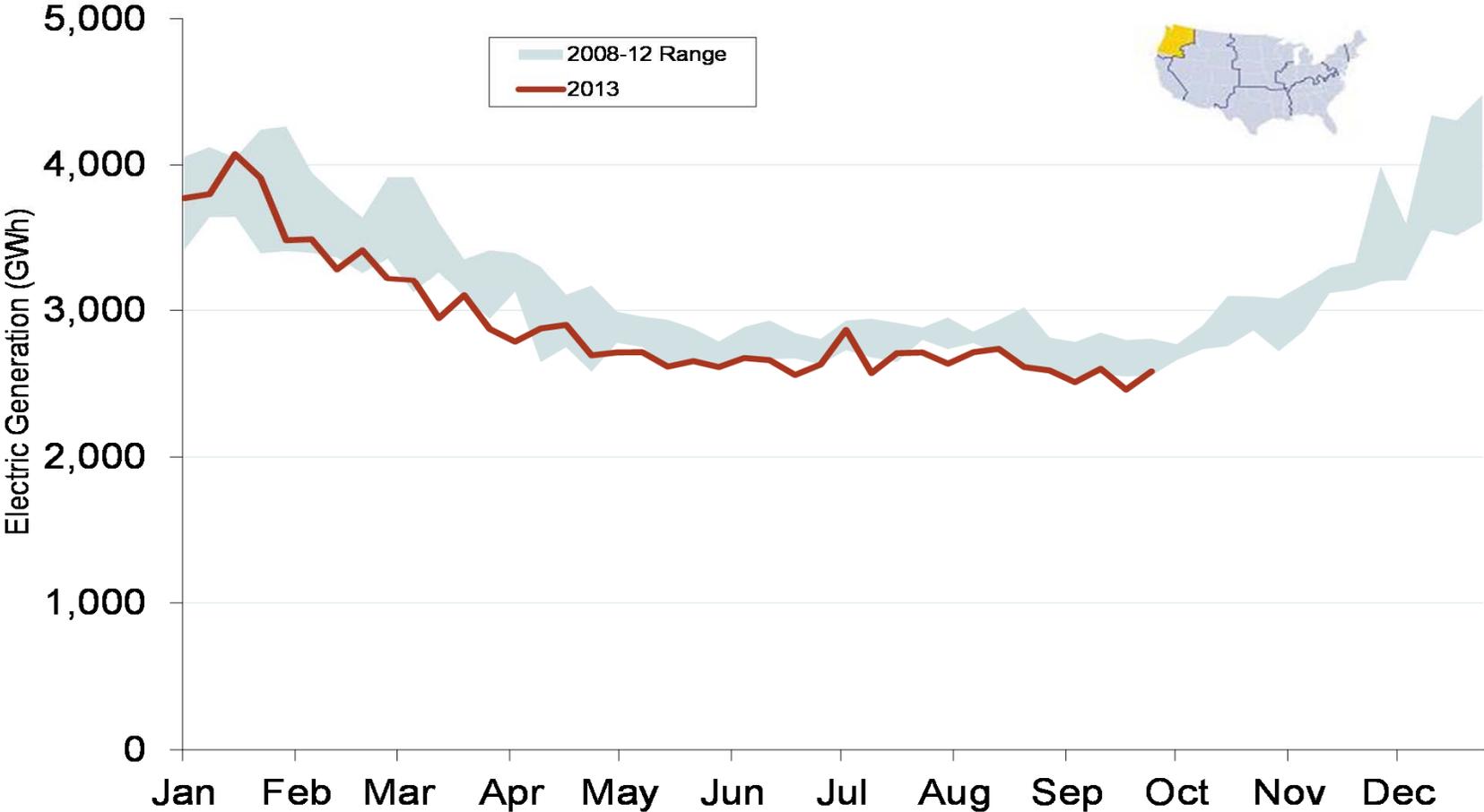
Weekly Generation Output - Rocky Mountains



Source: Derived from *EEI* data
October 2013 Western Snapshot Report

Updated: October 03, 2013

Weekly Generation Output - Pacific Northwest



Source: Derived from *EEI* data
October 2013 Western Snapshot Report

Updated: October 03, 2013

Weekly Generation Output - California

