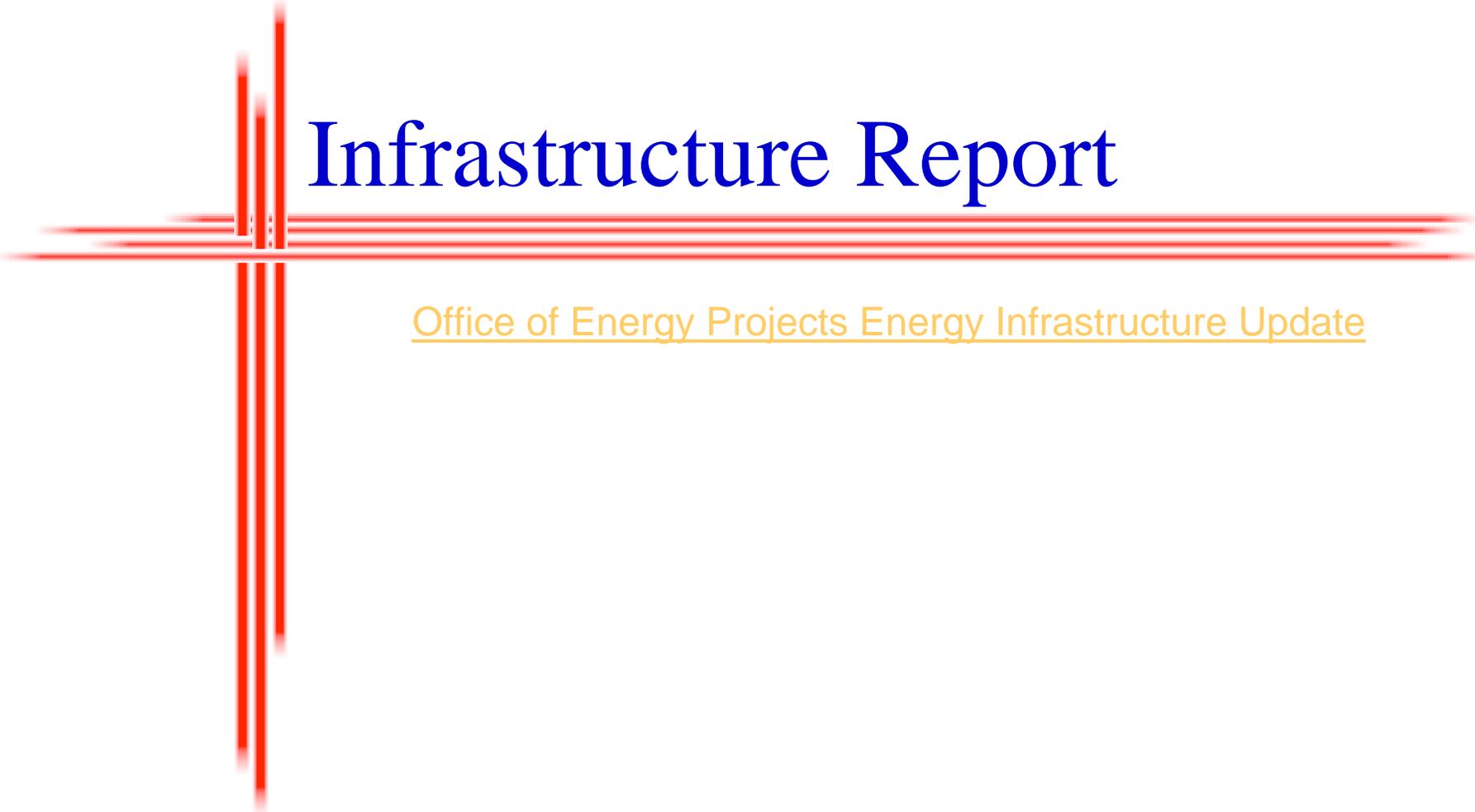


# **OE ENERGY MARKET SNAPSHOT**

## **Western States Version – June 2013 Data**

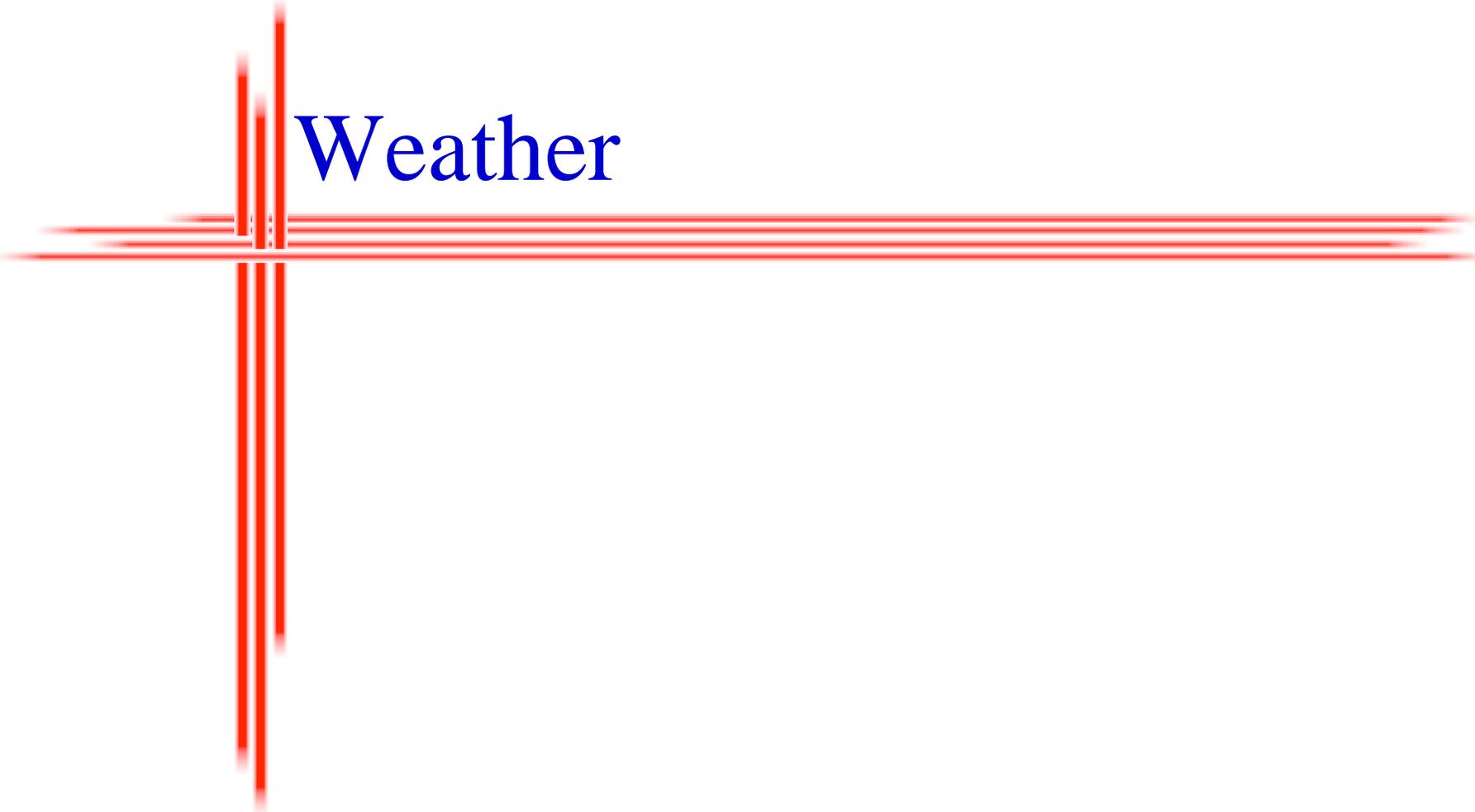
---

Office of Enforcement  
Federal Energy Regulatory Commission  
July 2013



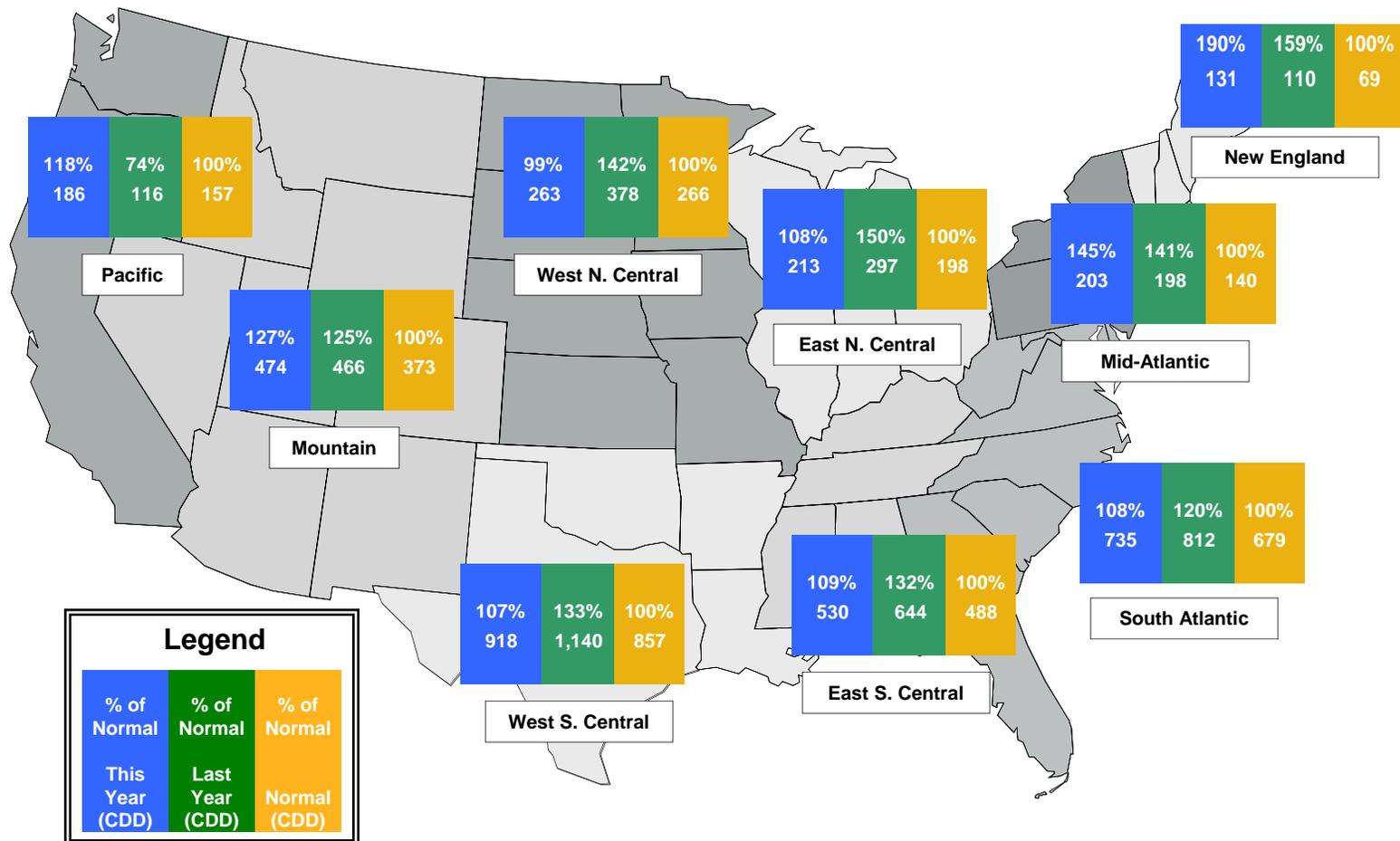
# Infrastructure Report

Office of Energy Projects Energy Infrastructure Update



# Weather

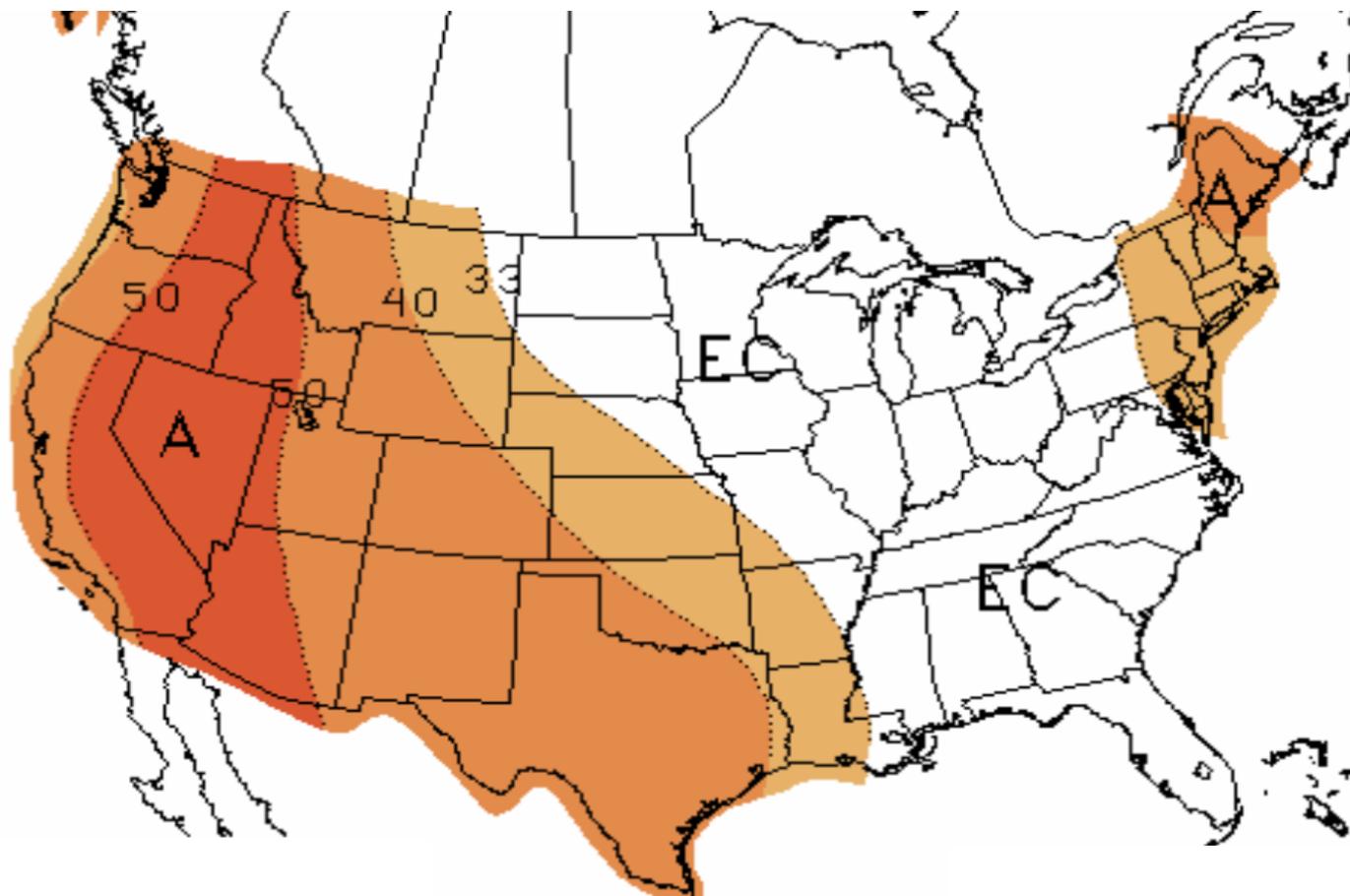
## Regional Cooling Degree Days – January to July 2013



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

Updated: July 17, 2013

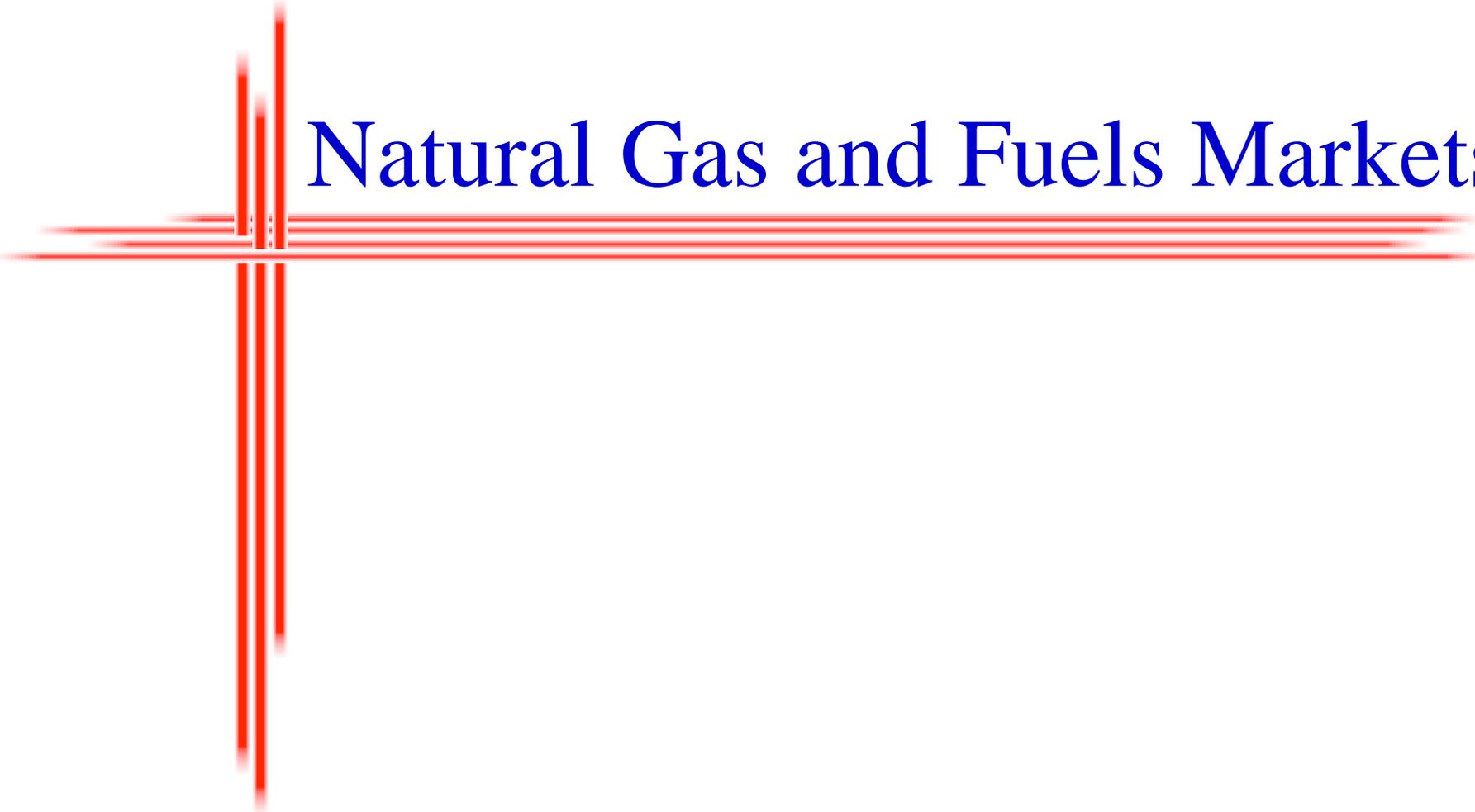
## NOAA's 3 Month Temperature Forecast Made July 18, 2013, Valid for August 2013 – September 2013



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.

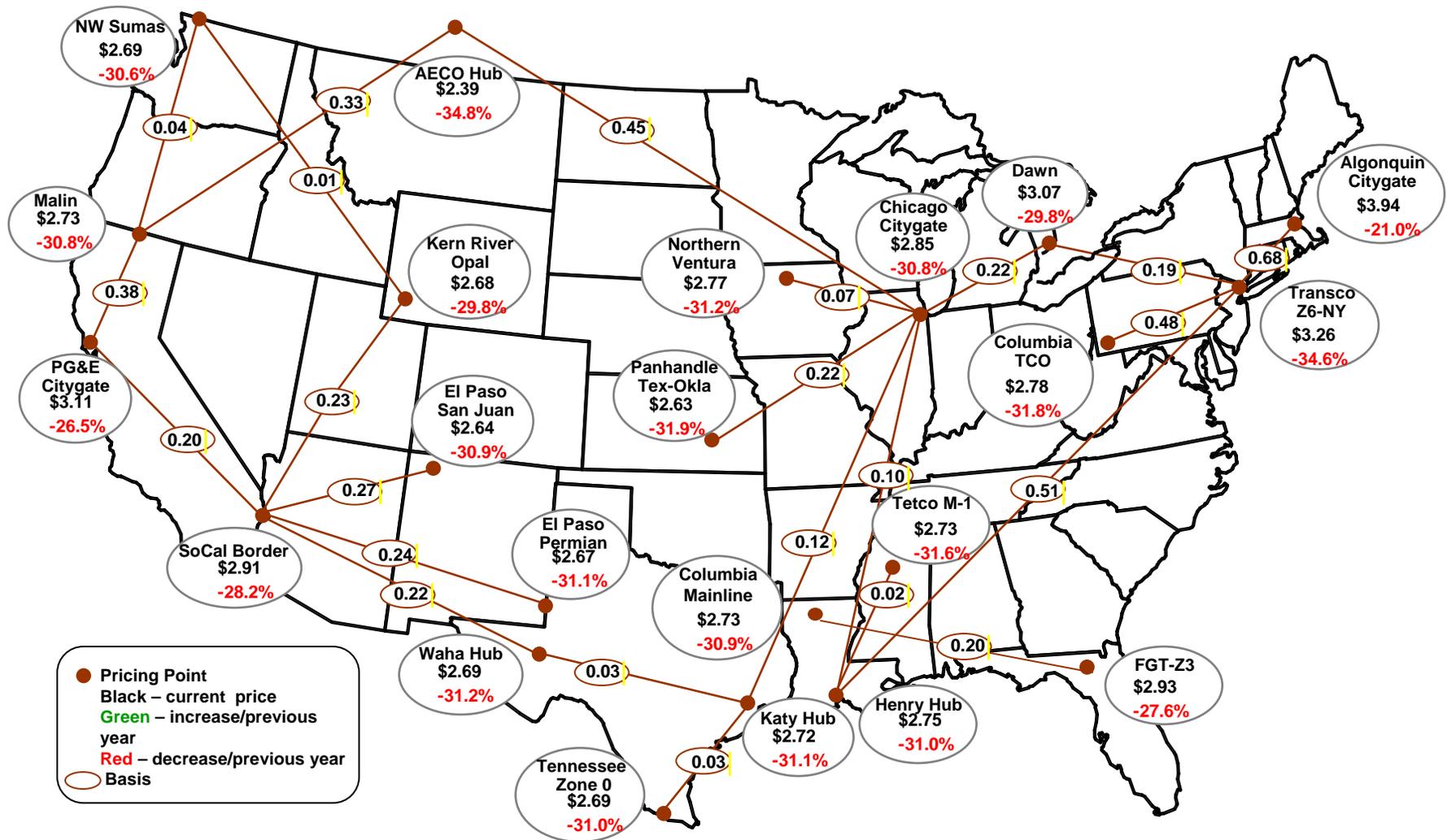
Source: Derived from NOAA data.

Updated: July 19, 2013



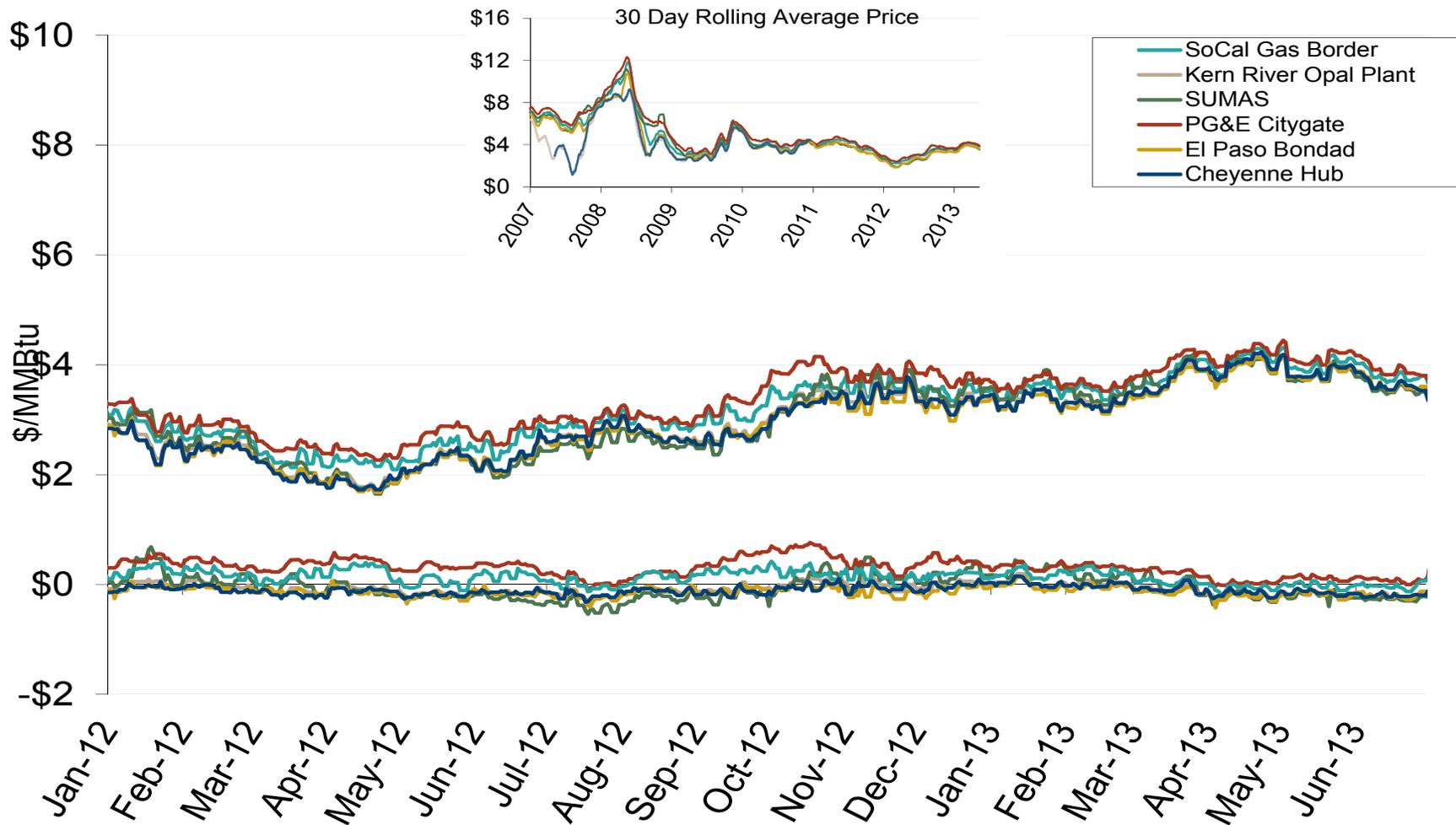
# Natural Gas and Fuels Markets

## Average Spot Gas Prices, 2012 (\$MMBtu)



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

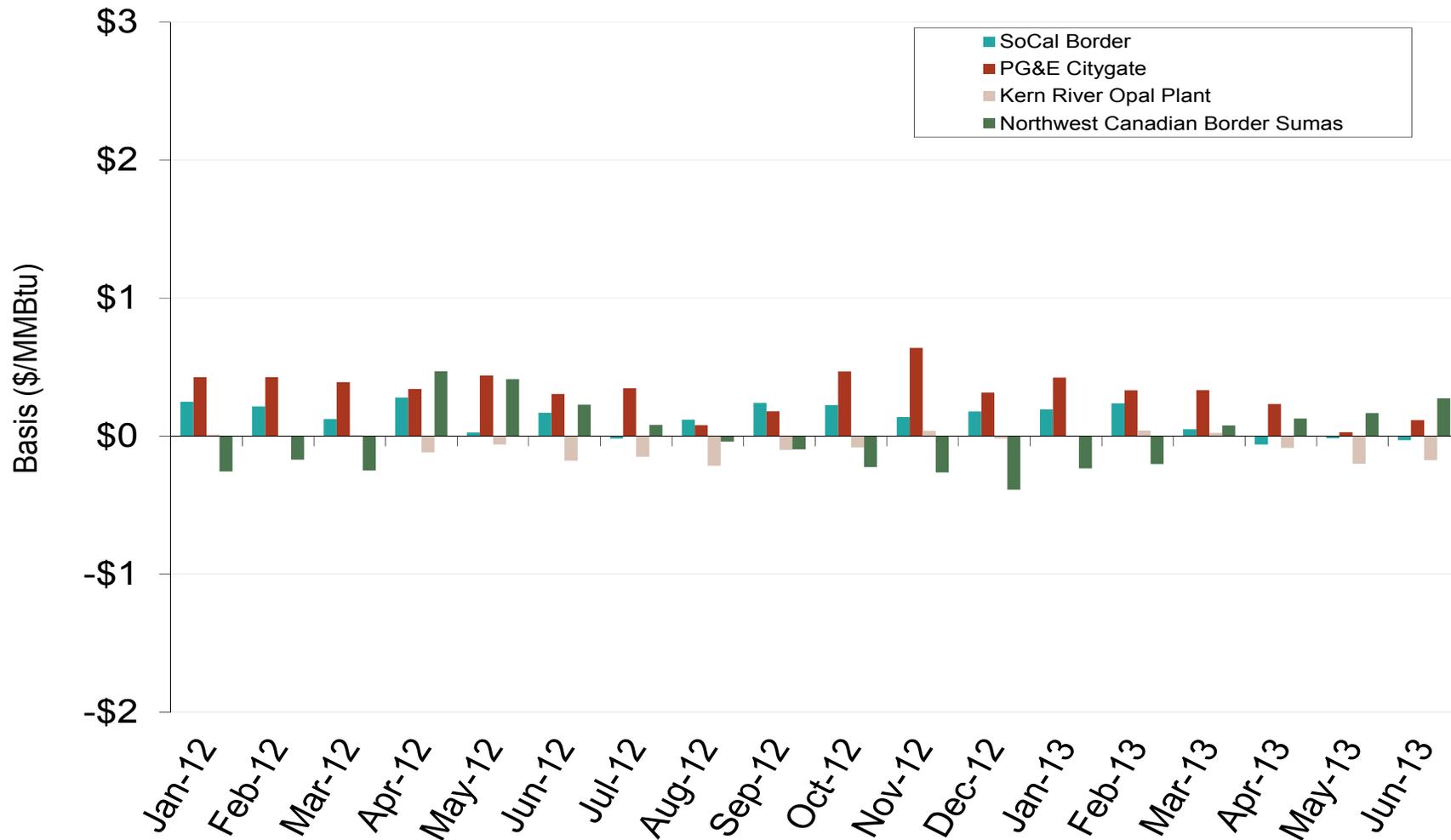
## Western Day-Ahead Hub Spot Prices and Basis



Western Natural Gas Market: Average Basis to Henry Hub

Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

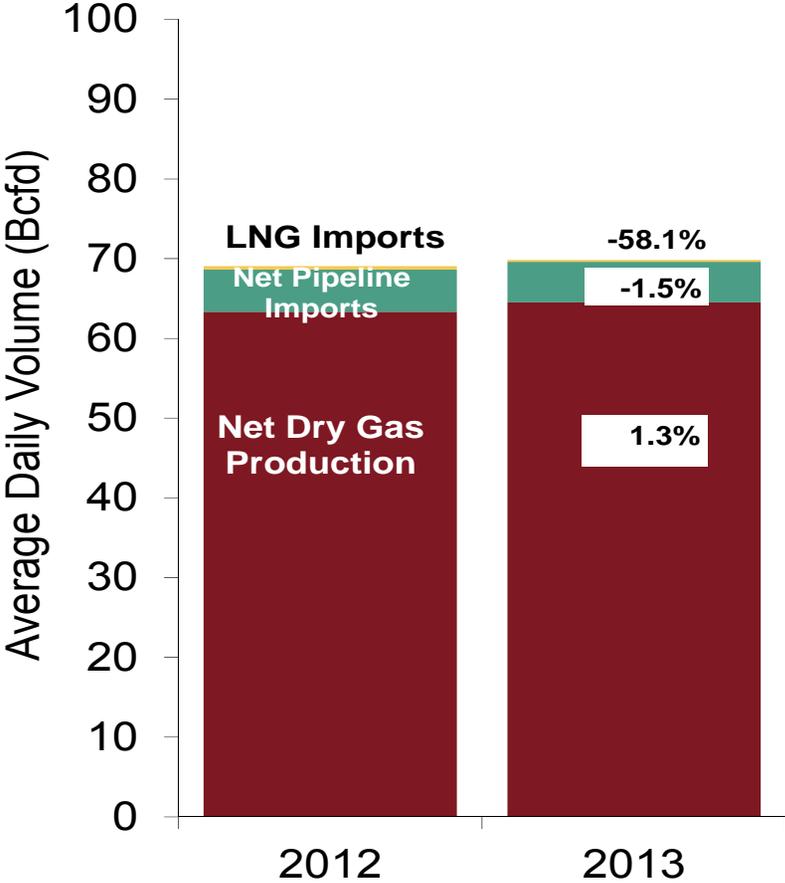
## Western Monthly Average Basis Value to Henry Hub



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

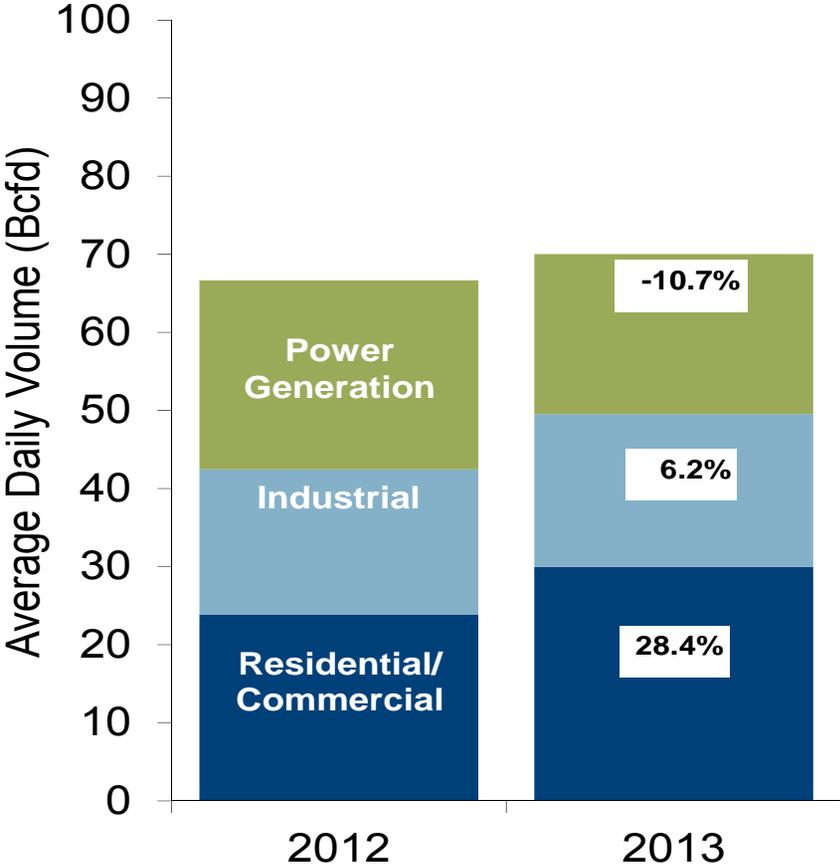
## US Natural Gas Supply

Total Change in Supply 0.0%



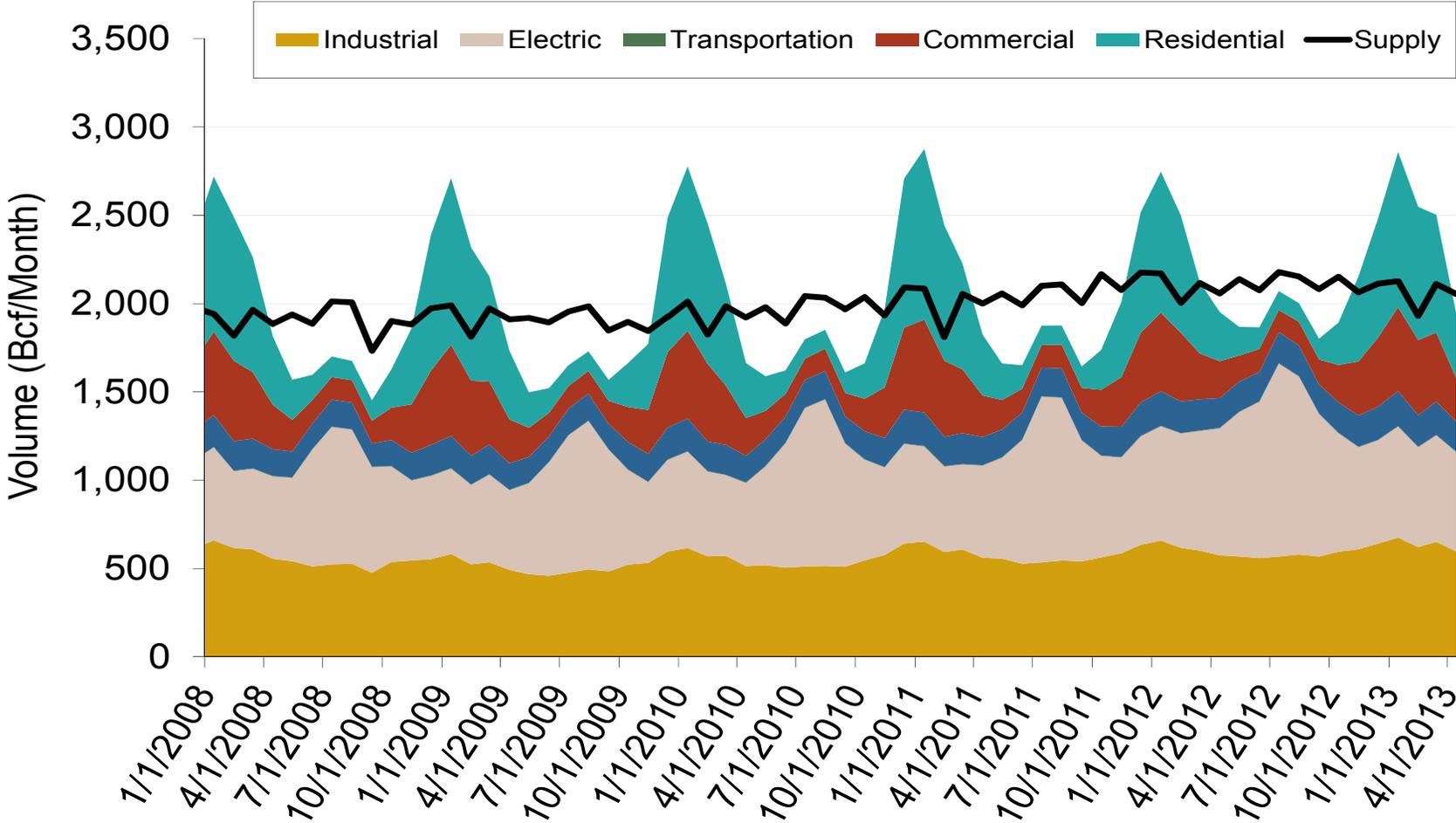
## US Natural Gas Demand

Total Change in Demand 10.4%



Note: Balance includes all amounts not attributable to other categories.  
Source: Derived from *Bentek Energy* data  
July 2013 Western Snapshot Report

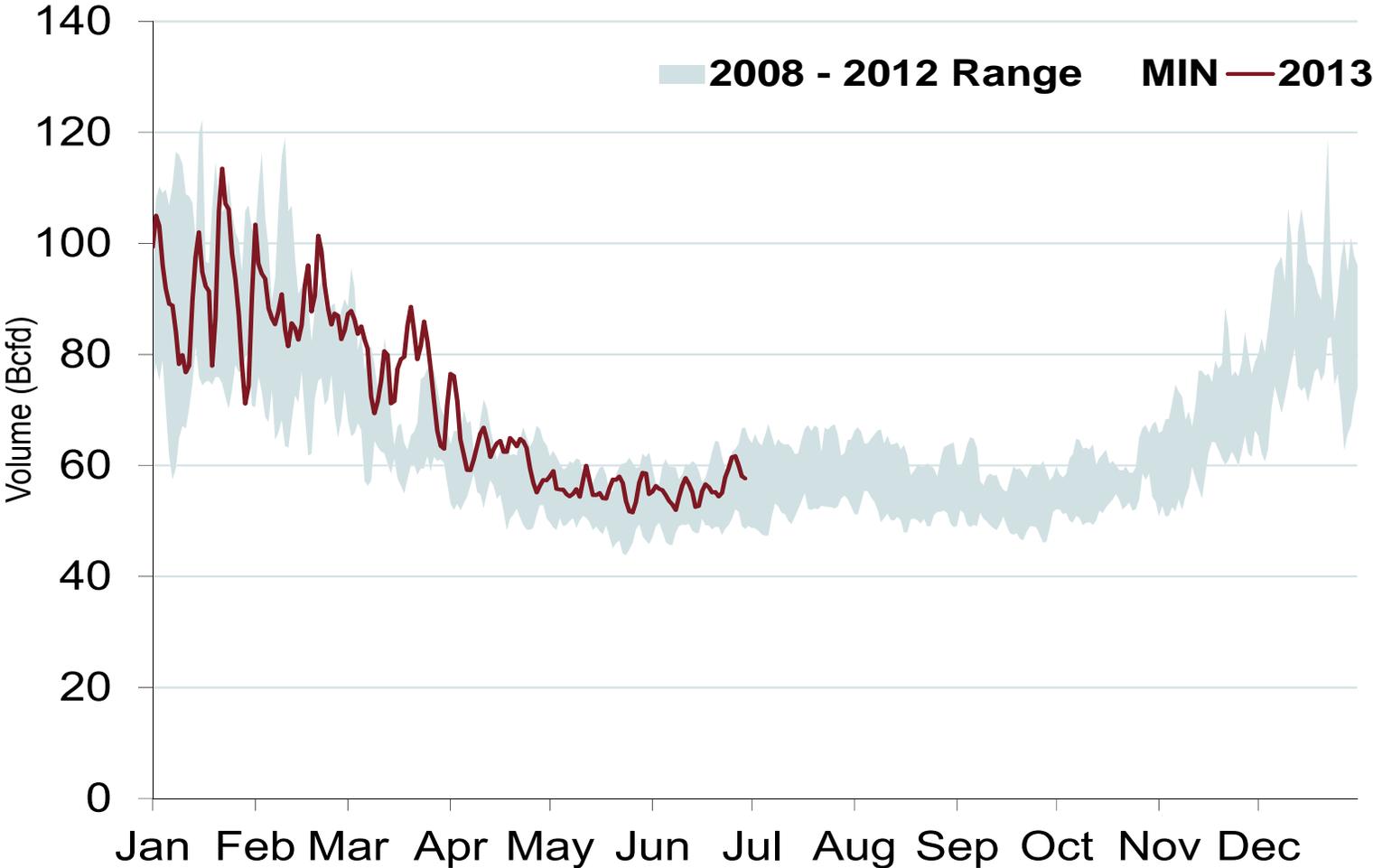
### Annual U.S. Natural Gas Consumption by Sector



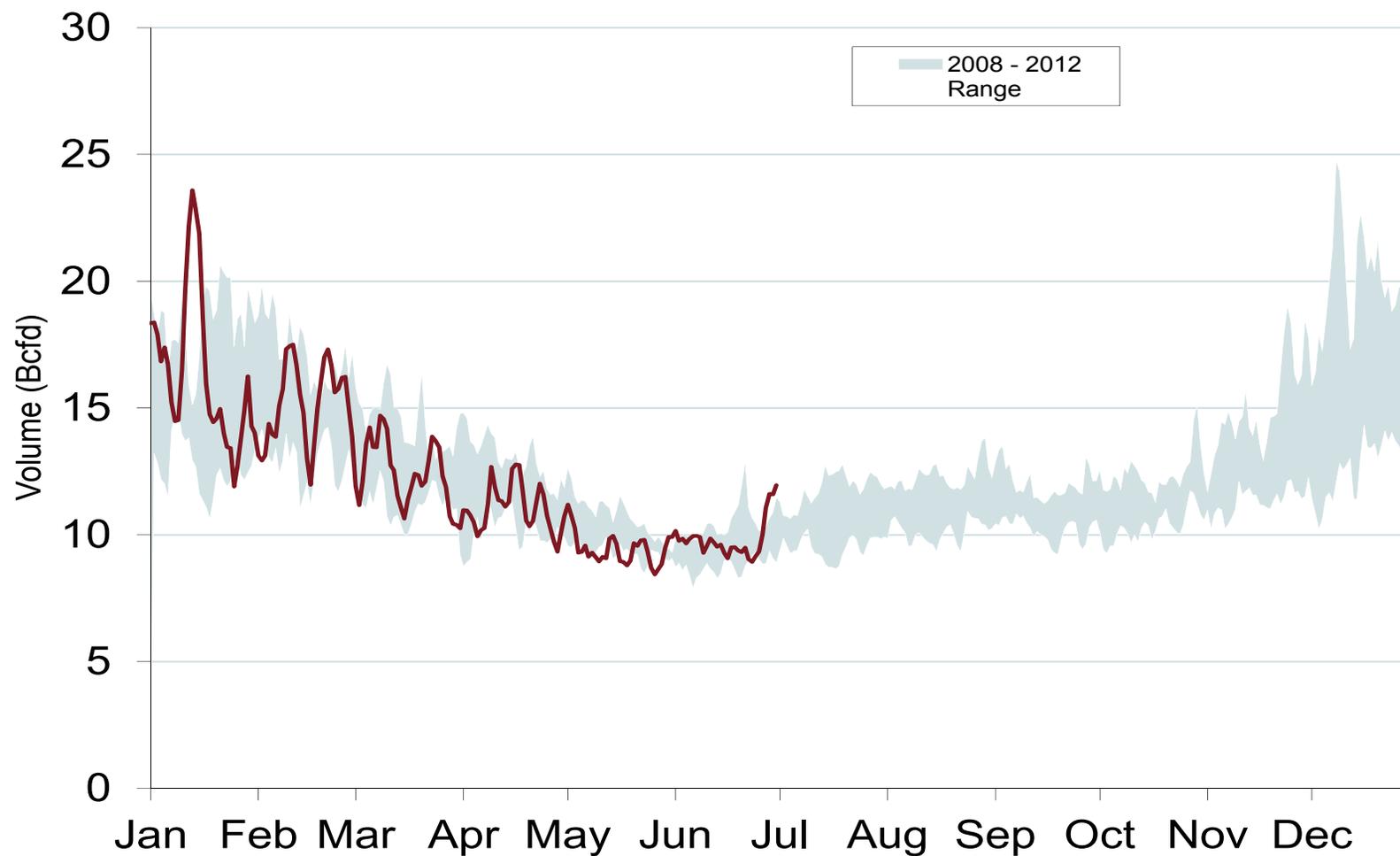
Notes: Supply includes lower 48 state production, net pipeline imports, and LNG imports  
Source: Derived from EIA data  
July 2013 Western Snapshot Report

Updated: July 11, 2013

### Total U.S. Natural Gas Demand All Sectors

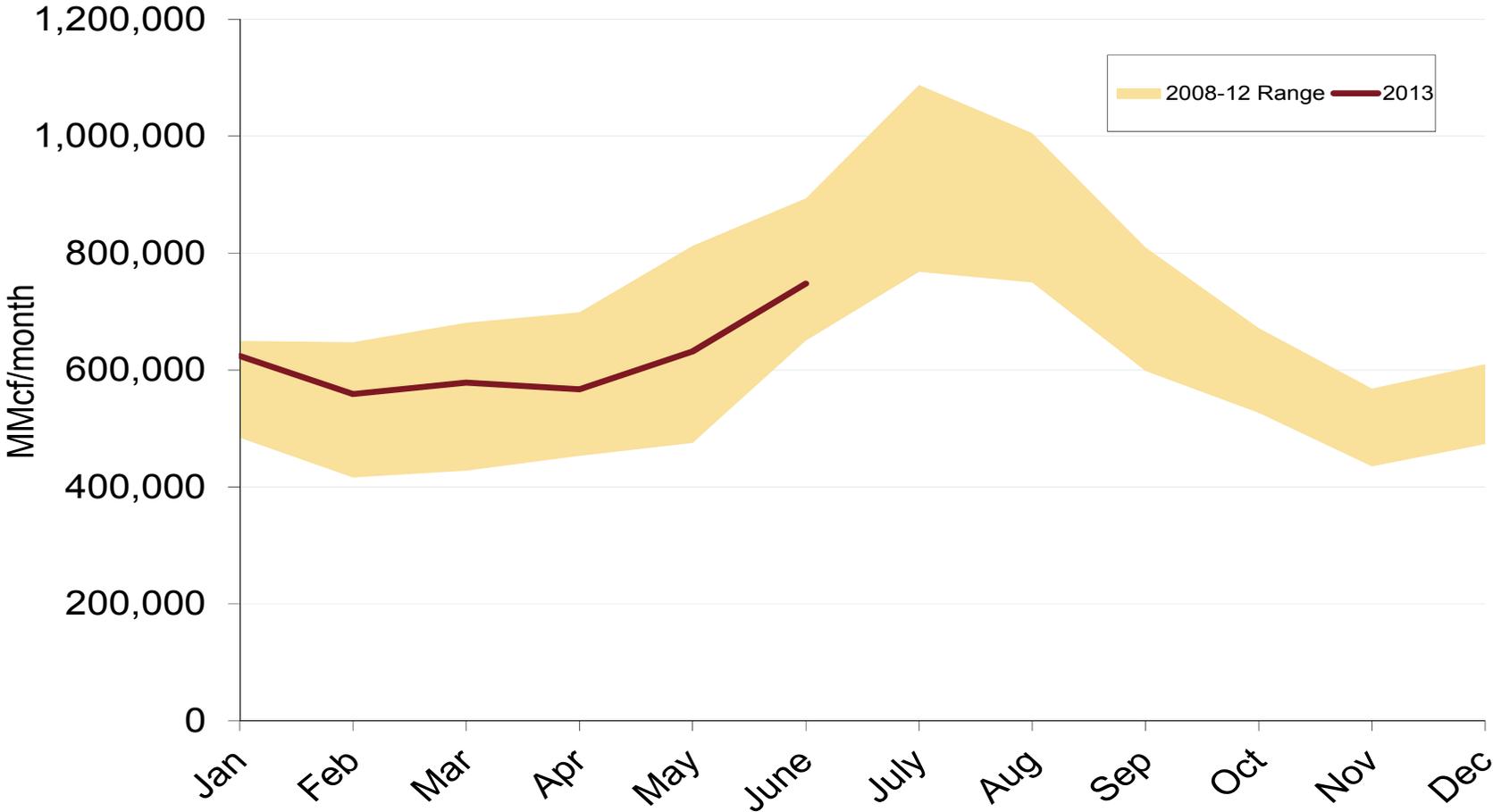


## Daily Western Natural Gas Demand All Sectors



Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

# U.S. Natural Gas Consumption for Power Generation

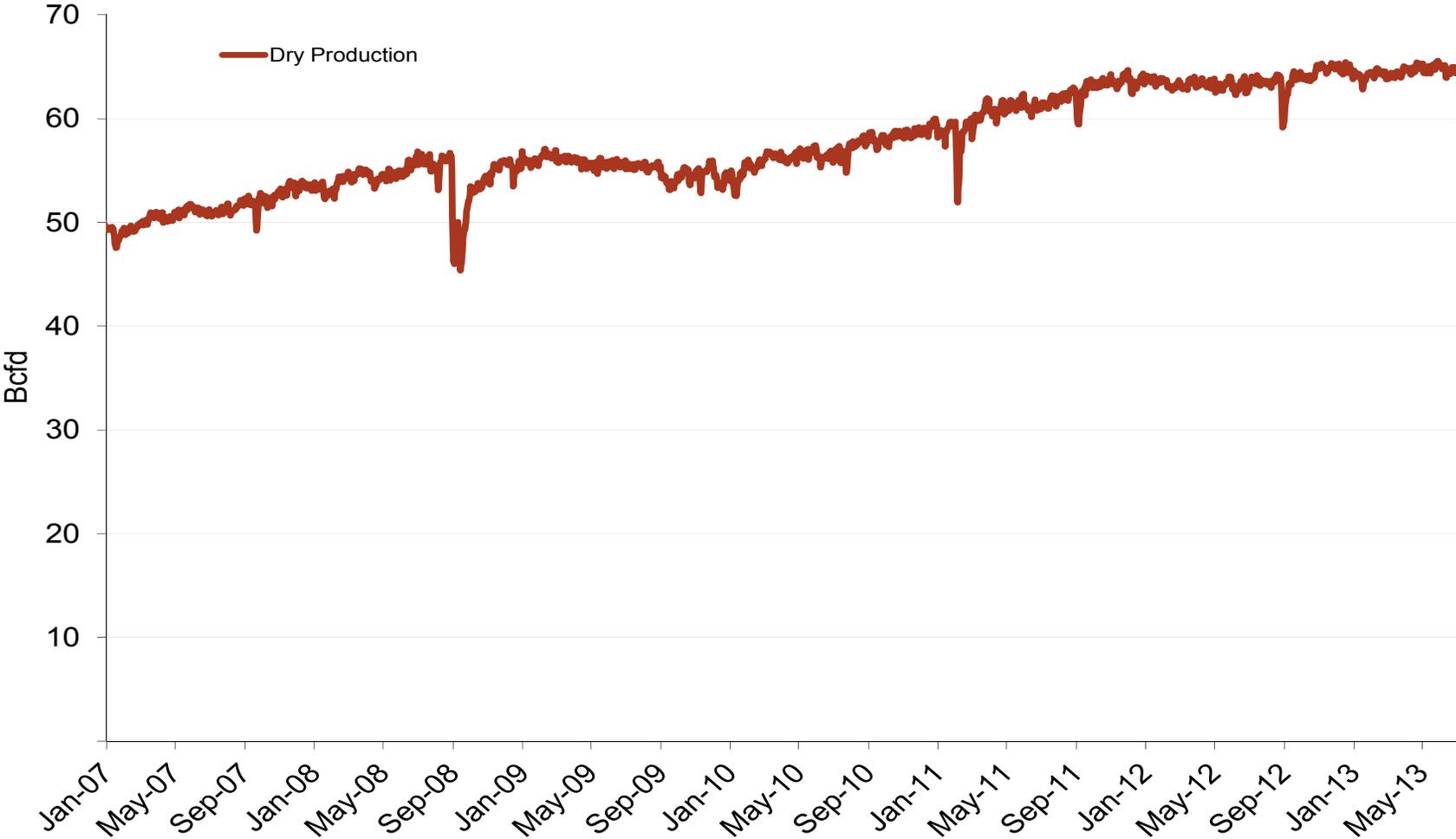


Source: Derived from *Bentek Energy* data  
July 2013 Western Snapshot Report

Updated: July 09, 2013

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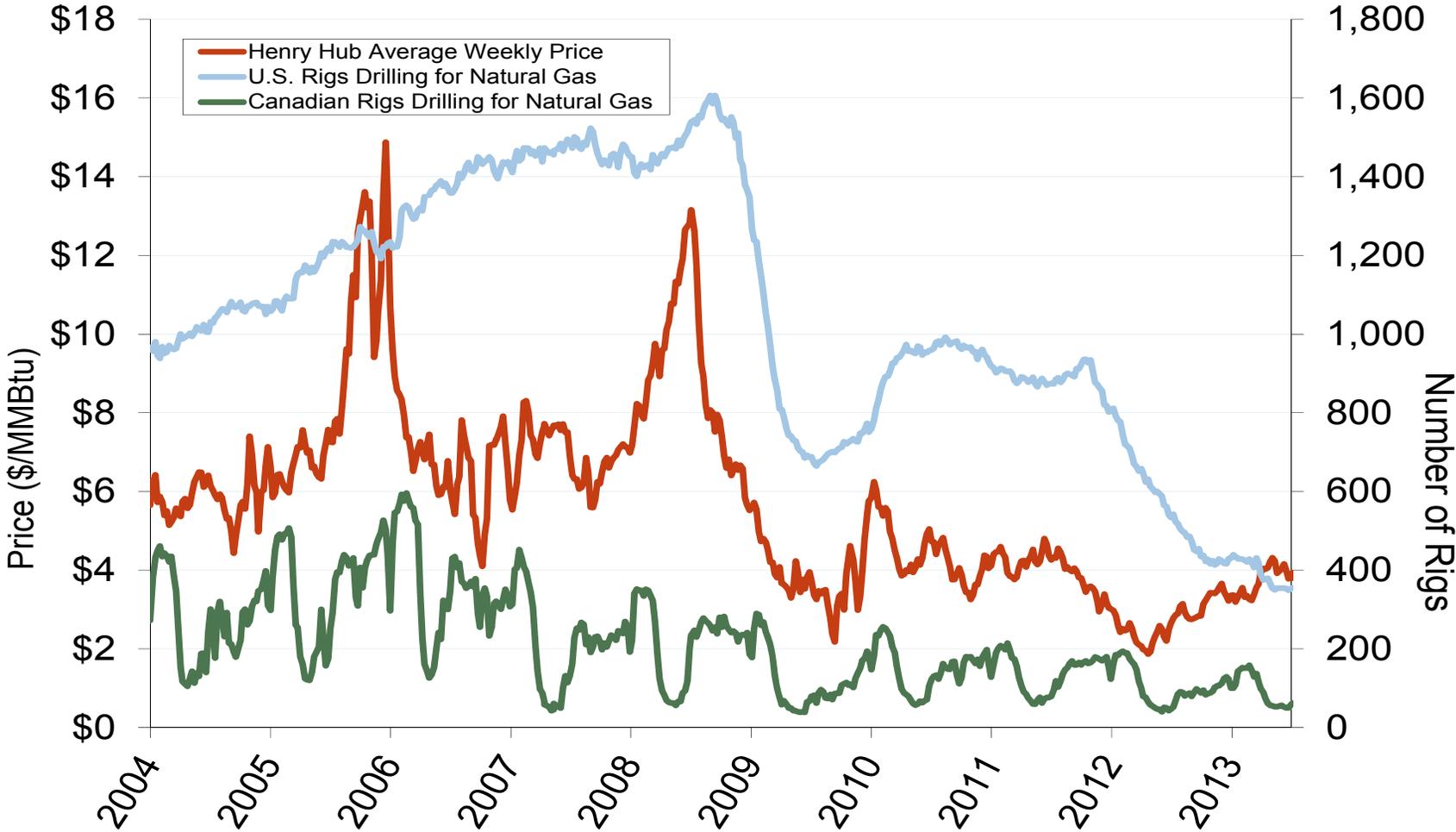
# Monthly U.S. Dry Gas Production – Lower 48 States



Note: Prior to July 2010, chart was derived from a combination of EIA and Bentek Energy data

Source: Derived from Bentek Energy data

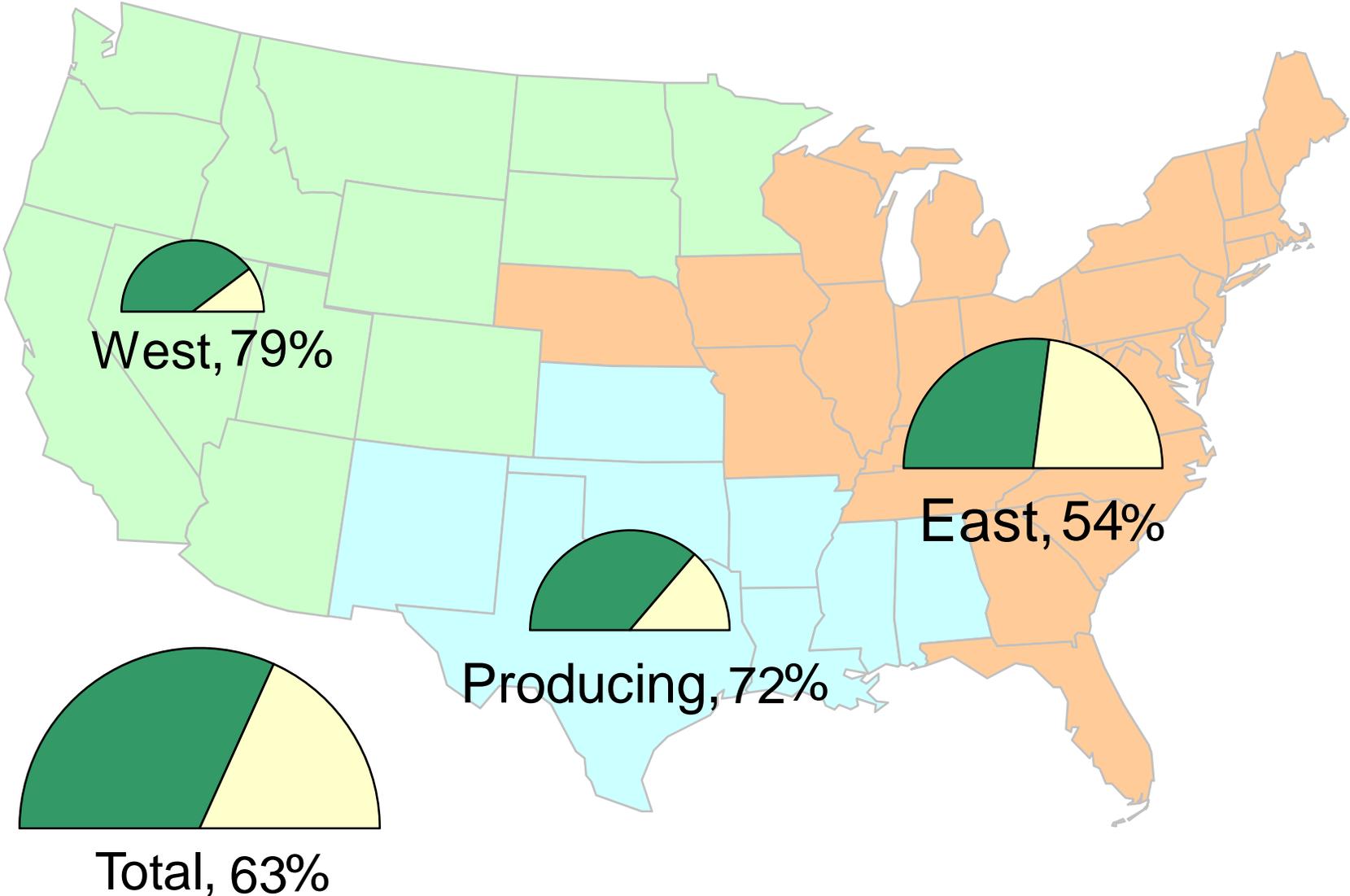
# U.S. and Canadian NG Drilling Rig Count and Daily Spot Prices



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

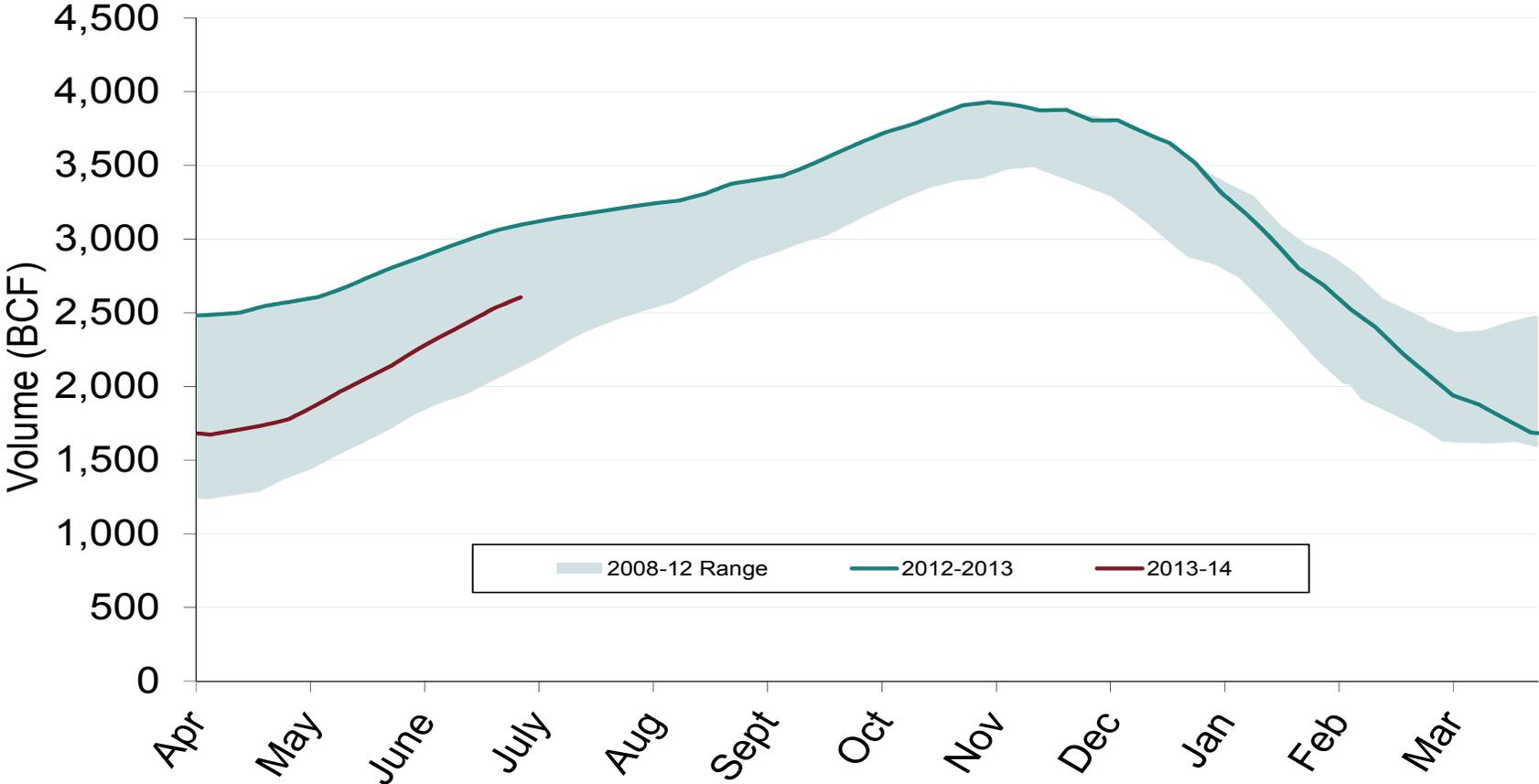
Updated: July 11, 2013

# Natural Gas Storage Inventories – July 5, 2013



Source: Derived from EIA Storage and Estimated Working Gas Capacity data

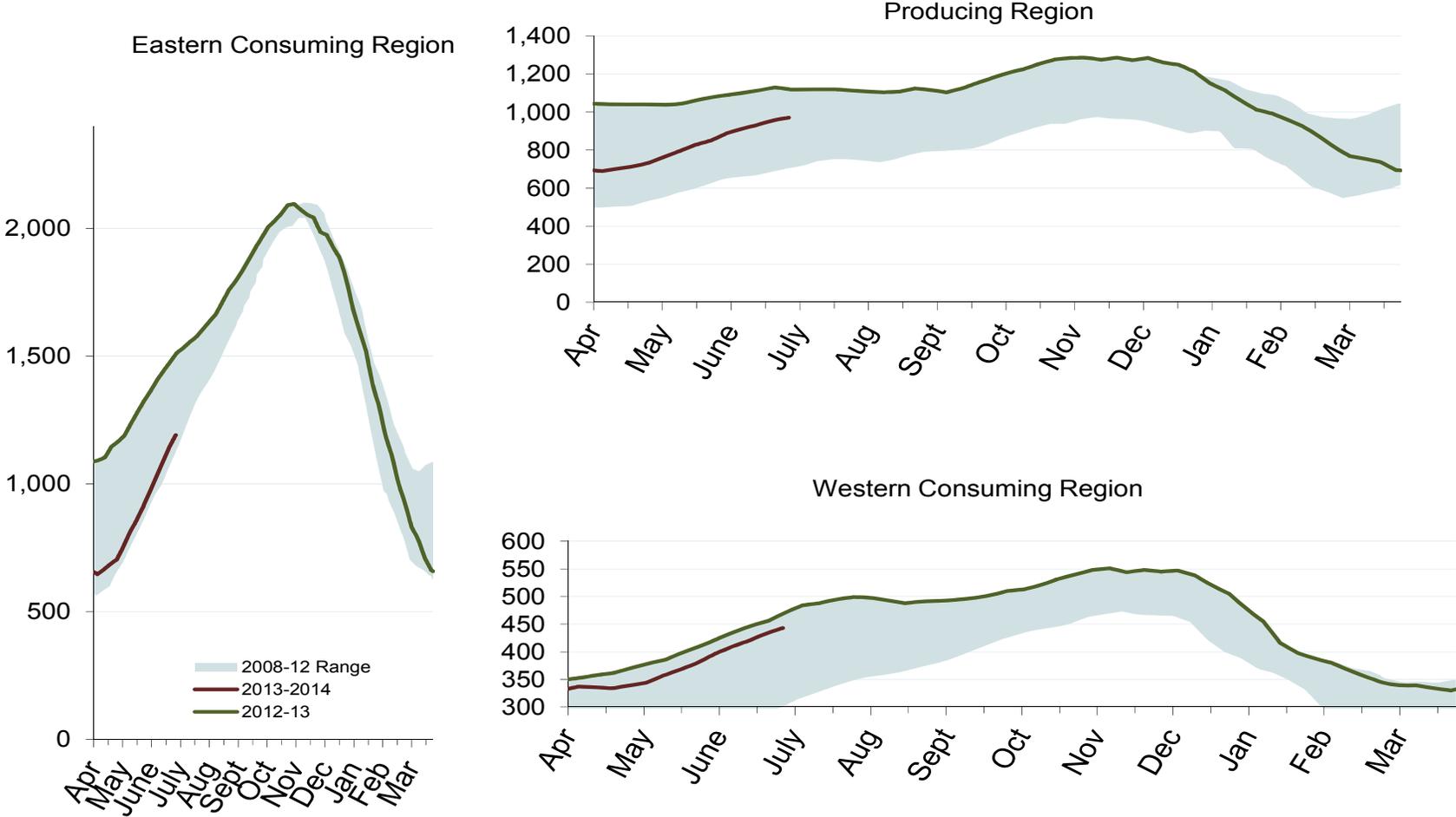
### Total U.S. Working Gas in Storage



Source: Derived from EIA data  
July 2013 Western Snapshot Report

Updated: July 11, 2013

# Regional Totals of Working Gas in Storage



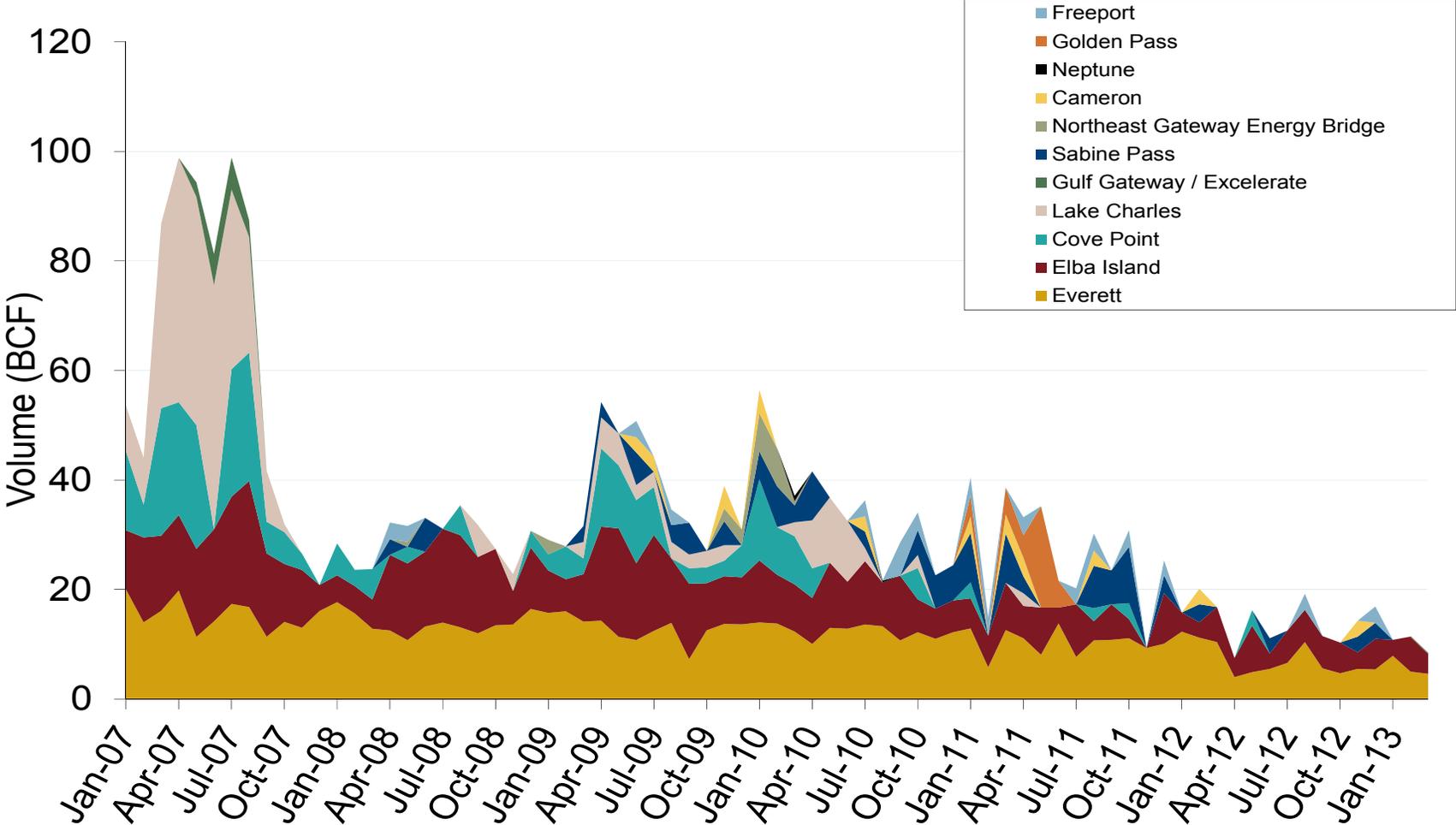
Source: Derived from EIA data  
July 2013 Western Snapshot Report

Updated: July 11, 2013

## World LNG Estimated August 2013 Landed Prices



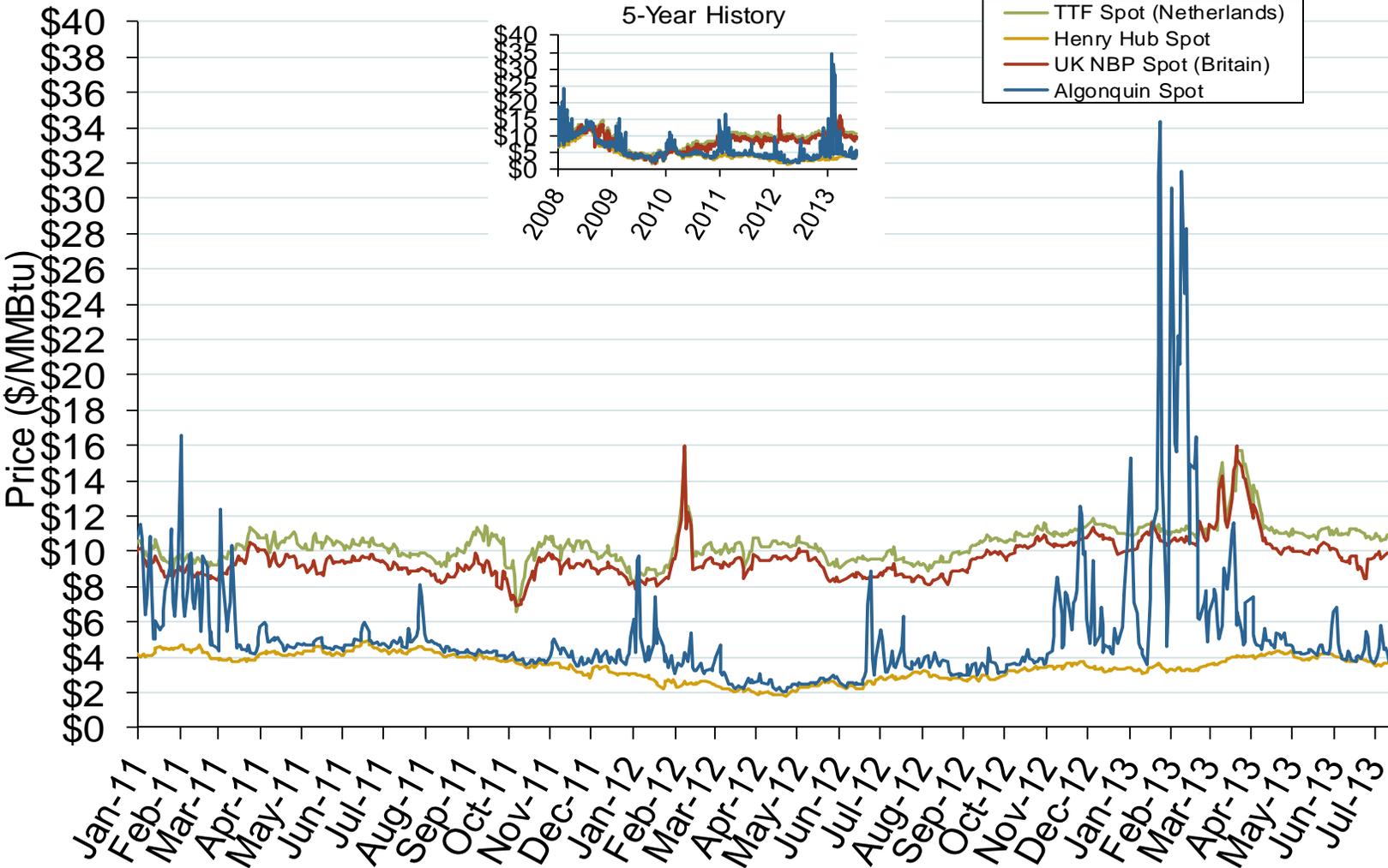
### Monthly Gas Imports at Existing U.S. LNG Facilities



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

Updated: July 11, 2013

# Atlantic Basin European and US Spot Natural Gas Prices



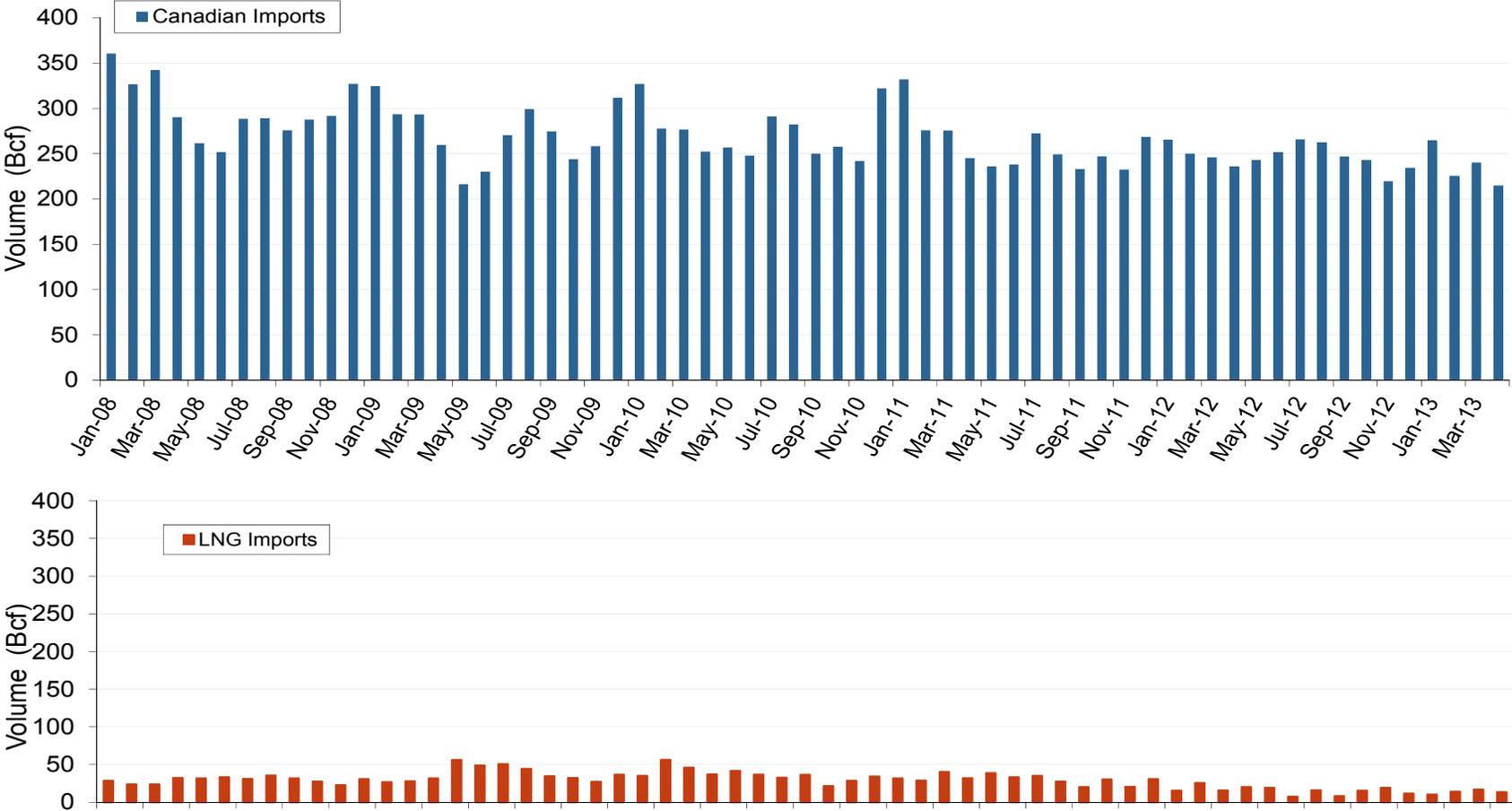
Source: Derived from Bloomberg and ICE data  
July 2013 Western Snapshot Report

Updated: July 7, 2013

Natural Gas Overview: Natural Gas Imports

Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

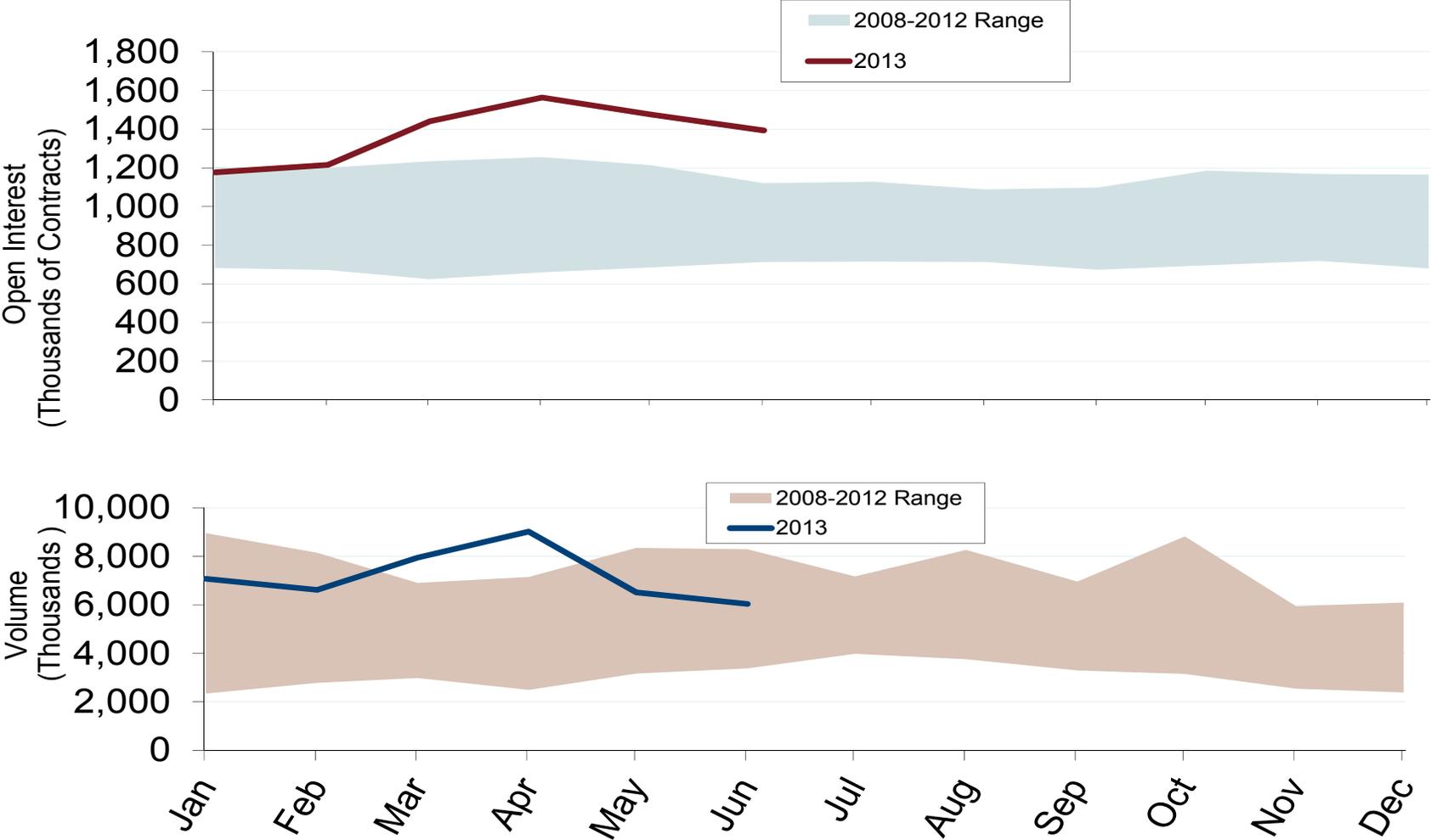
### Canadian and LNG Natural Gas Imports Into the U.S.



Source: EIA Natural Gas Monthly  
July 2013 Western Snapshot Report

Updated: July 11, 2013

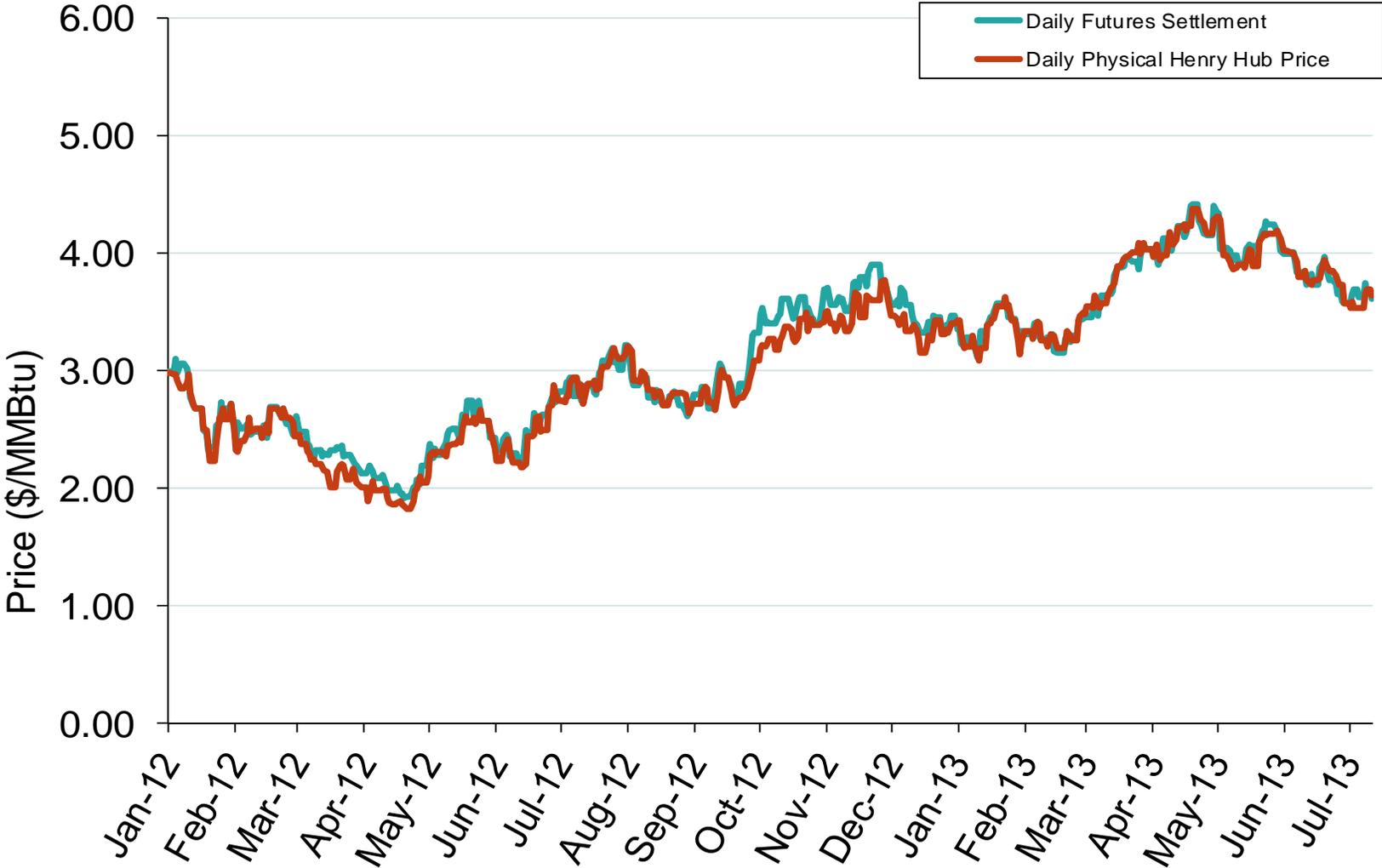
# Nymex NG Futures Month-End Open Interest and Monthly Volume



Source: Derived from Nymex data  
July 2013 Western Snapshot Report

Updated: July 11, 2013

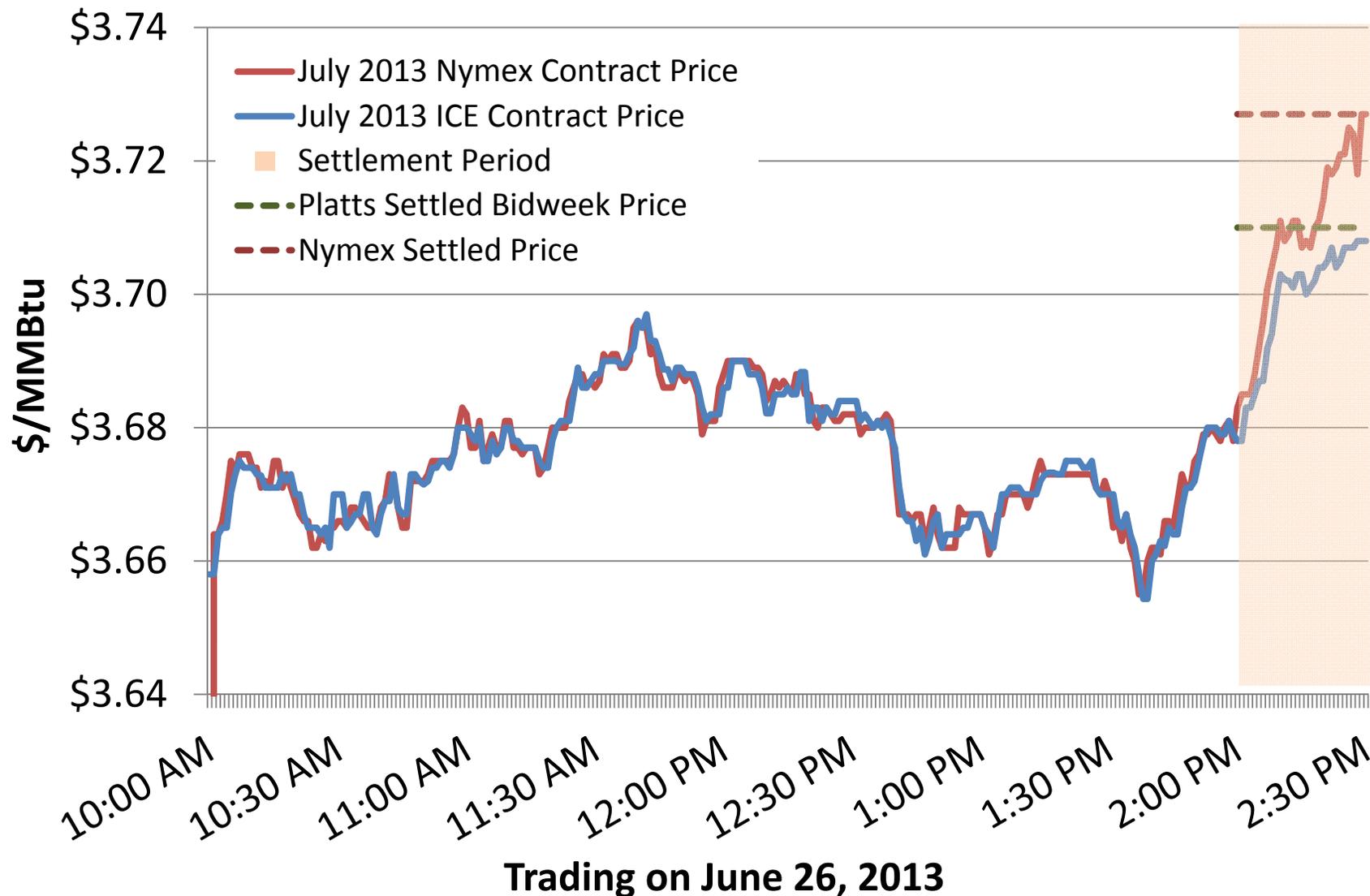
## Daily Physical Index Price & Daily Futures Settlement Price



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

Updated: July 7, 2013

## Nymex and ICE Contract Final Settlement - July 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

July 2013 Western Snapshot Report

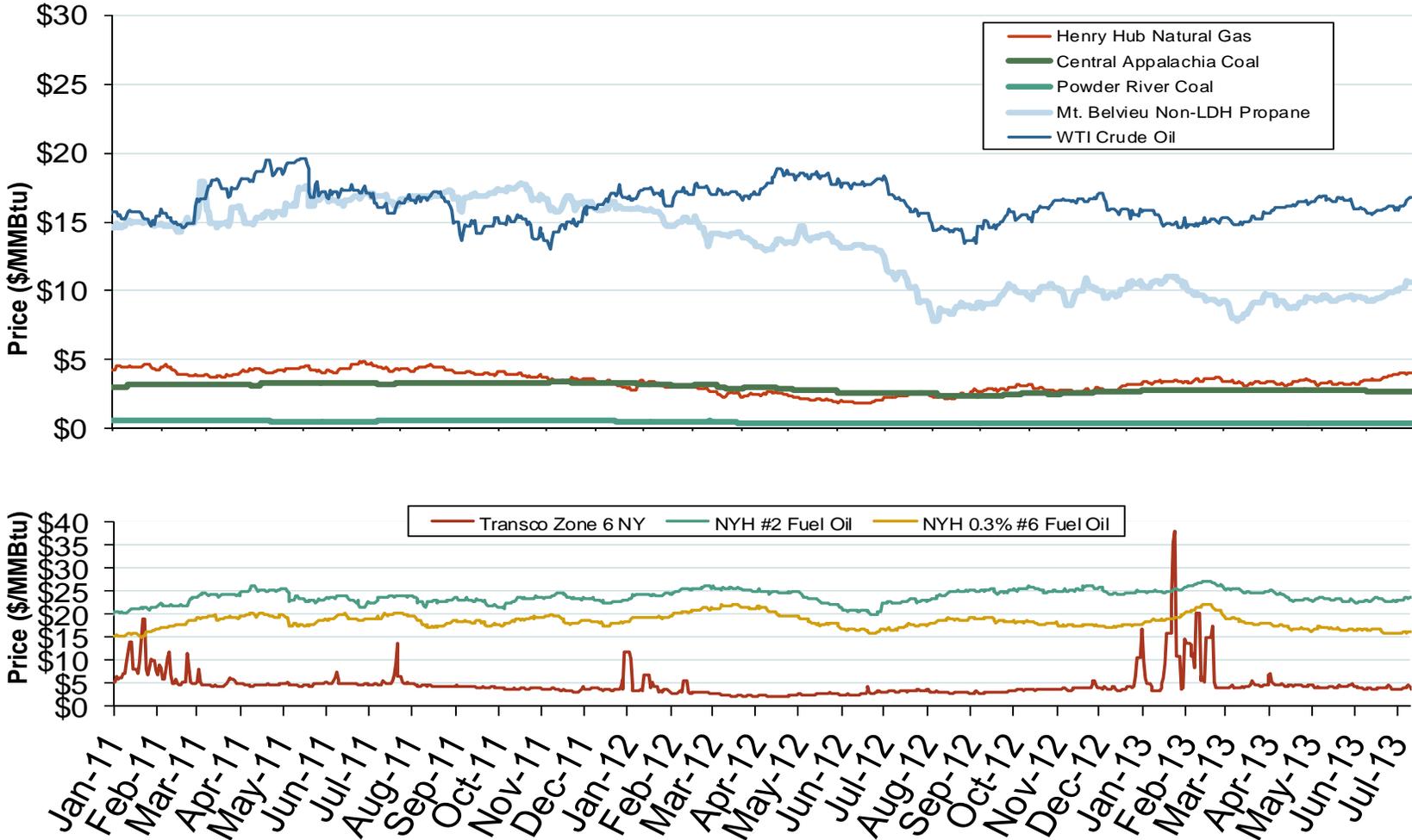
Updated: July 10, 2013

2166

Other Fuels Market: Fossil Fuel Prices

Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

# Oil, Coal, Natural Gas and Propane Daily Spot Prices



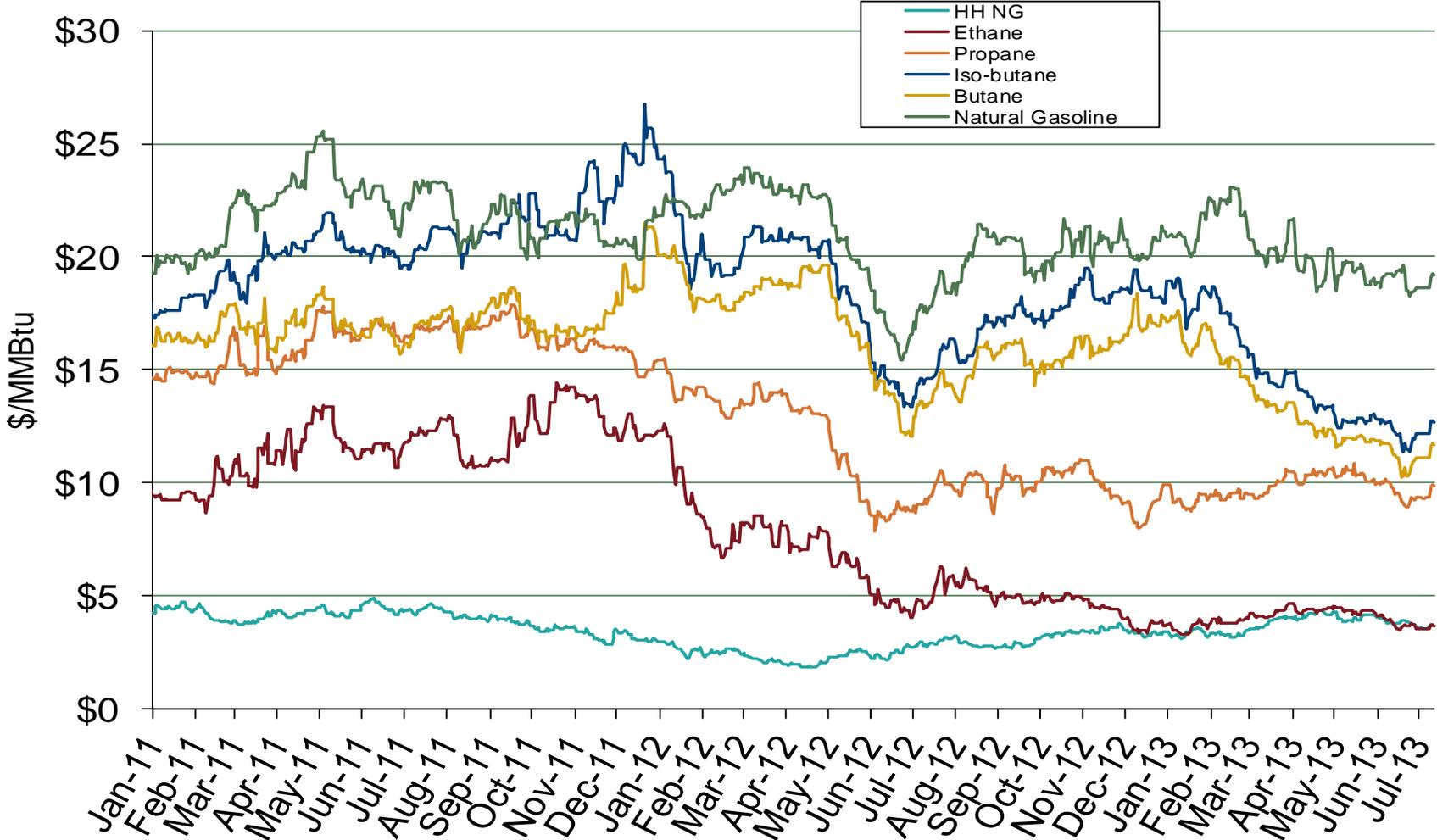
Notes: Coal prices are quoted in \$/ton. Conversion factors to \$/MMBtu are based on contract specifications of 12,000 btus/pound for Central Appalachian coal and 8800 btus/pound for Powder River Basin coal

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

Updated: July 7, 2013

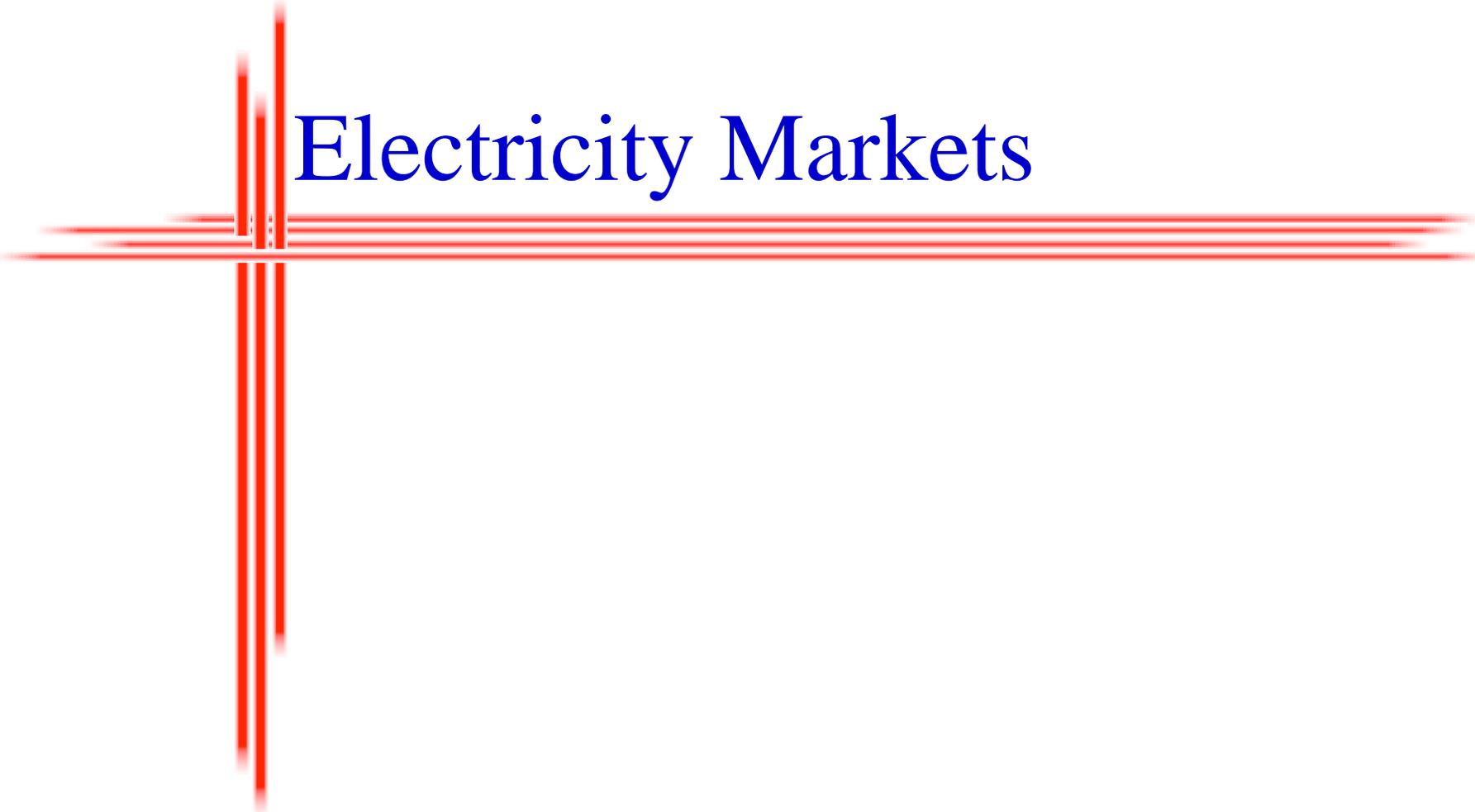
Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

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



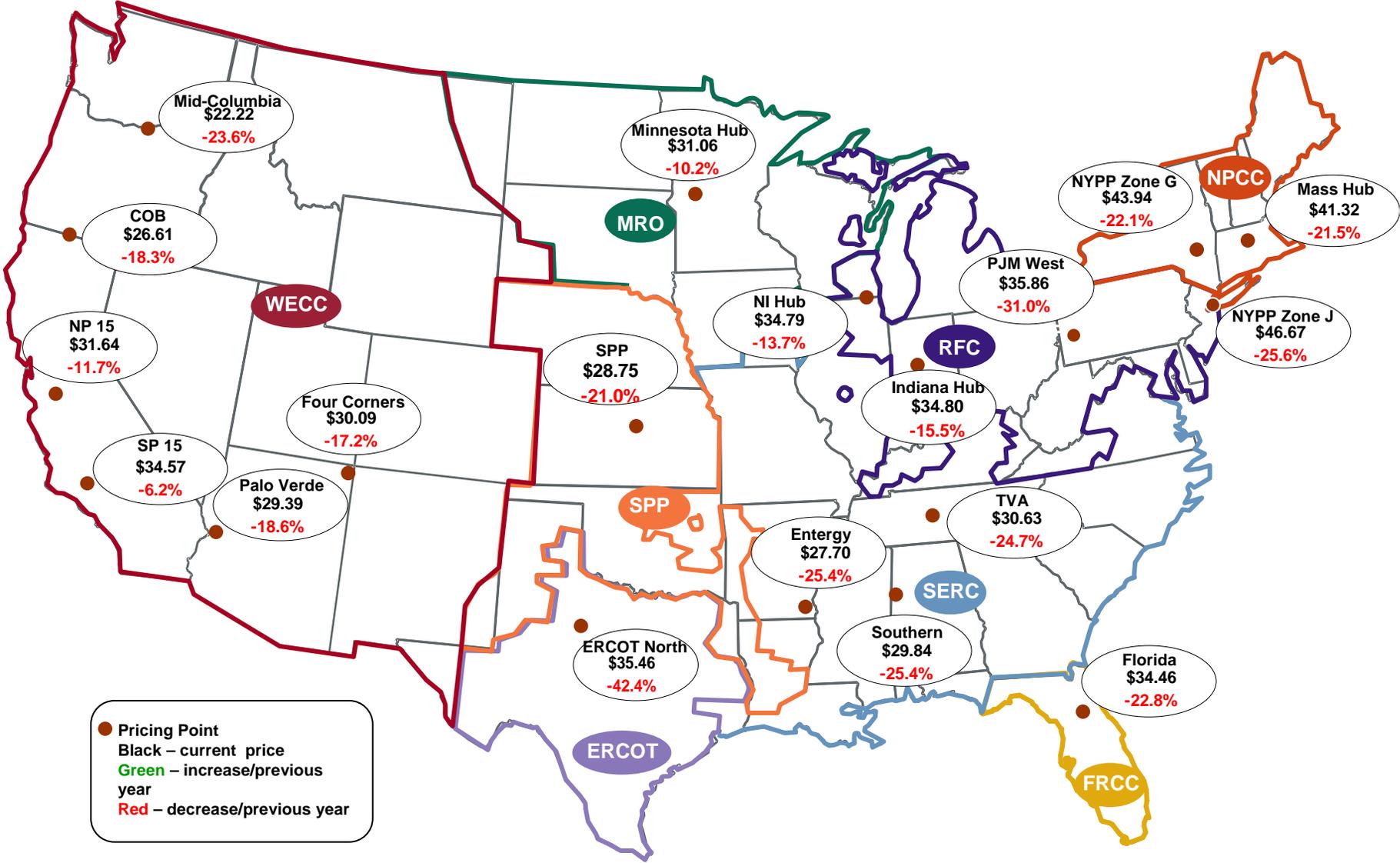
Source: Derived from Bloomberg Data  
July 2013 Western Snapshot Report

Updated: July 7, 2013



# Electricity Markets

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



Source: Derived from *Platts* data.  
July 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
<b>Northeast</b>										
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%
<b>Southeast</b>										
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%
<b>Midwest</b>										
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%
<b>South Central</b>										
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%
<b>Southwest</b>										
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%
<b>Northwest</b>										
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%
<b>California</b>										
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%

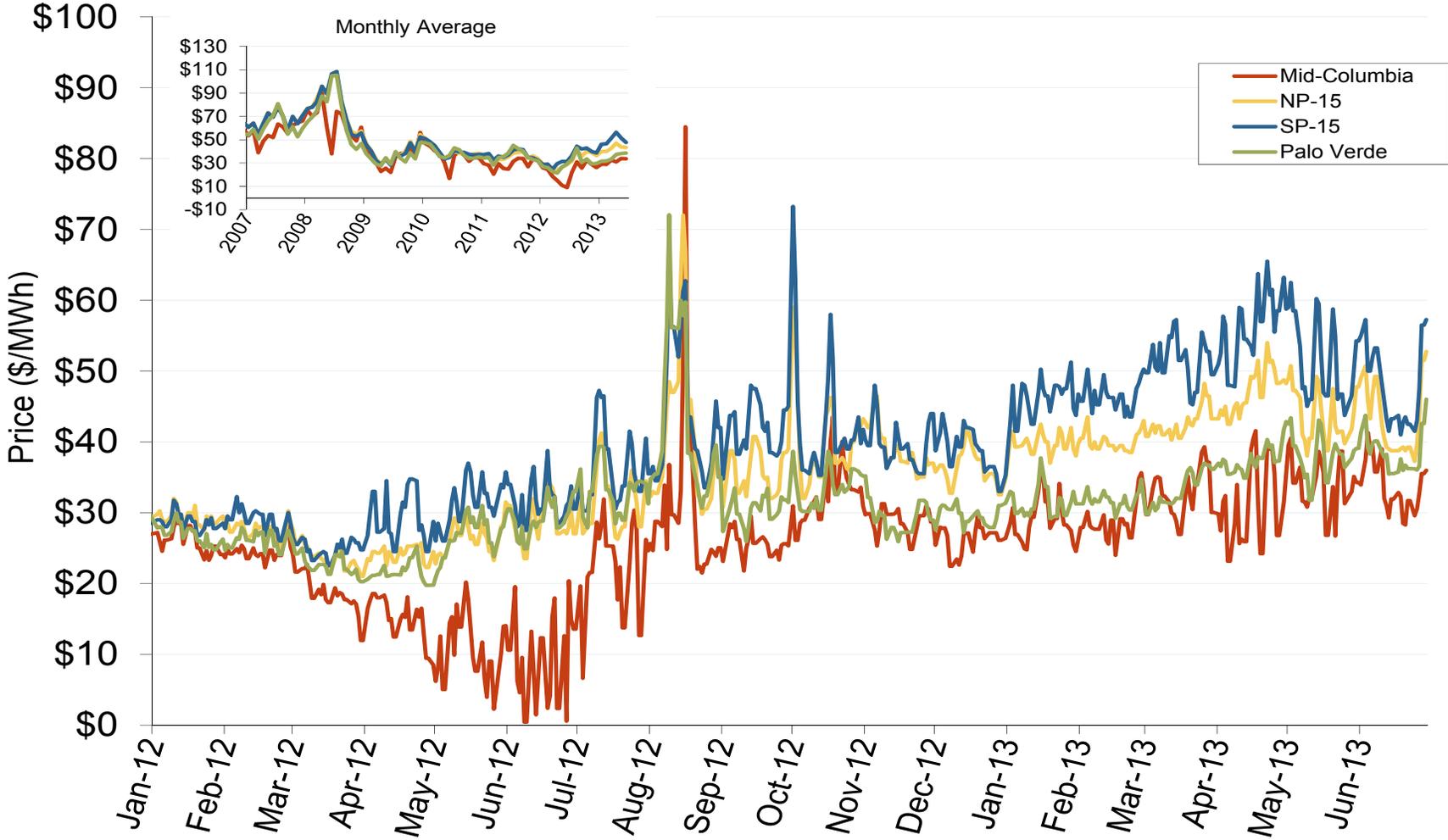
Note: Effective January 1, 2012, Platts replaced the Cinergy Hub with the Indiana Hub.

July 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



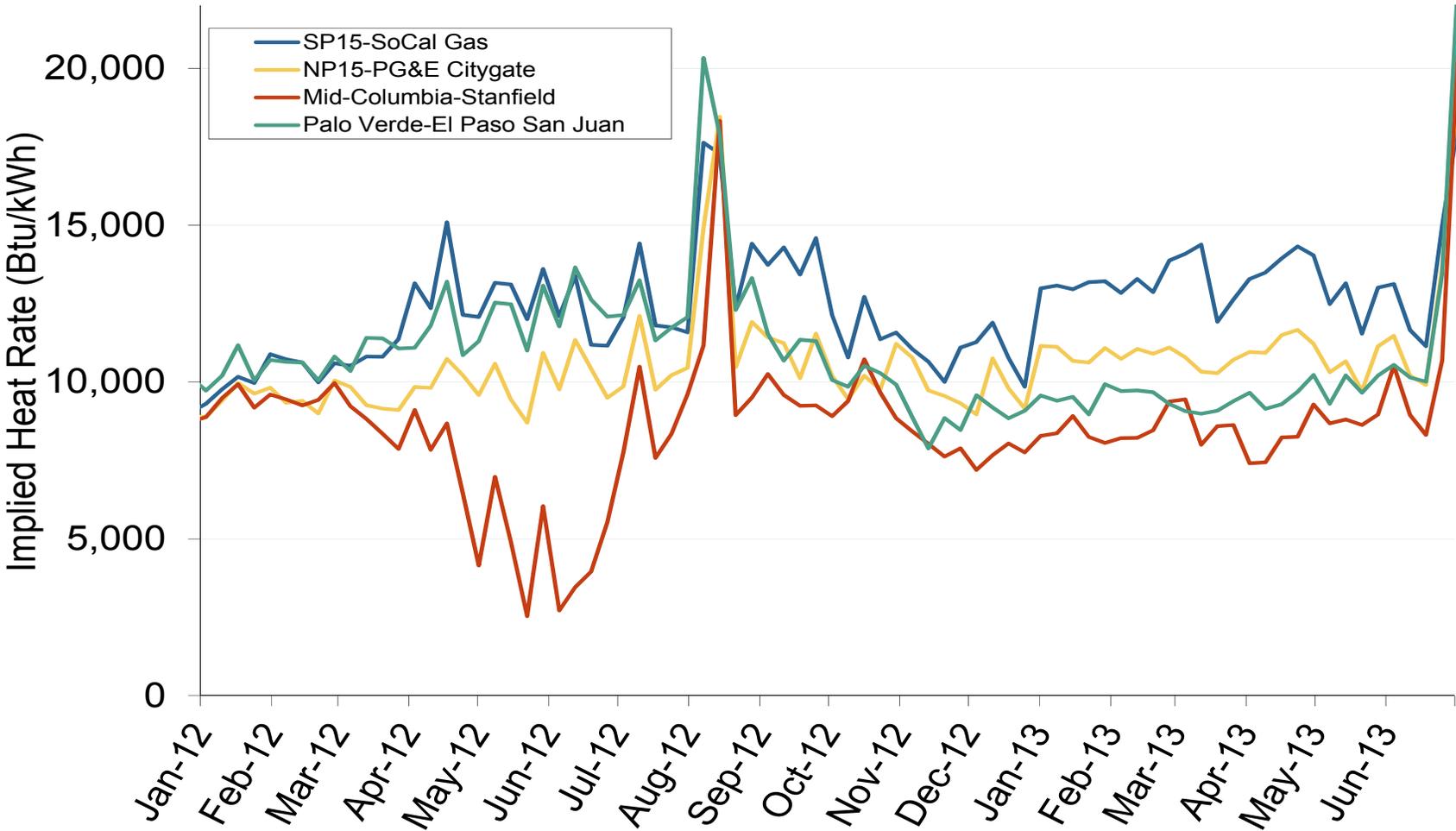
Source: Derived from *Platts* data  
July 2013 Western Snapshot Report

Updated: July 05, 2013

Southwest Electric Market: Western Implied Heat Rates

Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

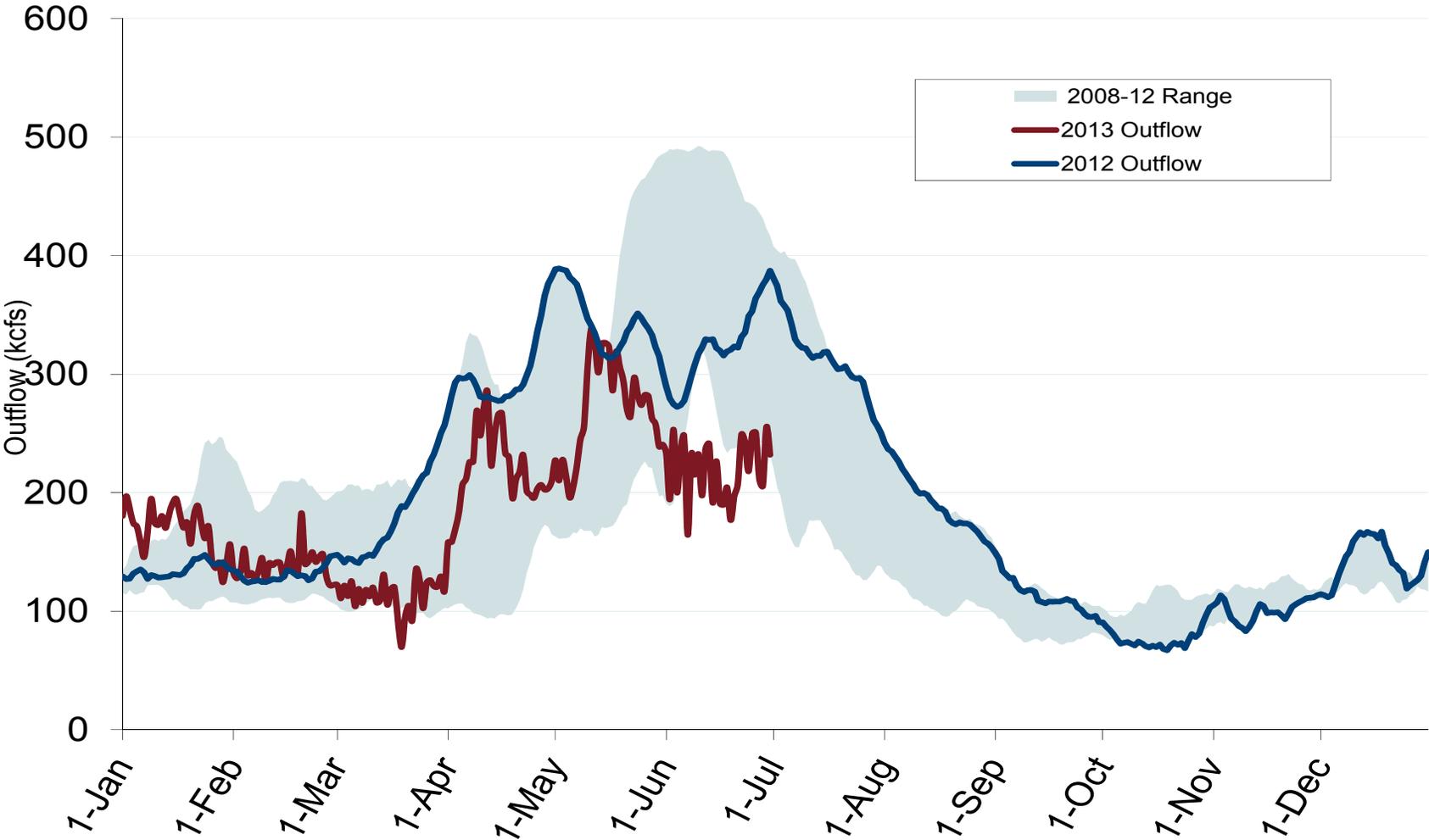
**Implied Heat Rates at Western Trading Points - Weekly Avgs.**



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

Updated: July 05, 2013

### Stream Flows at the Dalles Dam



Notes: Trend lines are 7-day moving averages  
Source: Derived from USACE data  
July 2013 Western Snapshot Report

Updated: July 11, 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%

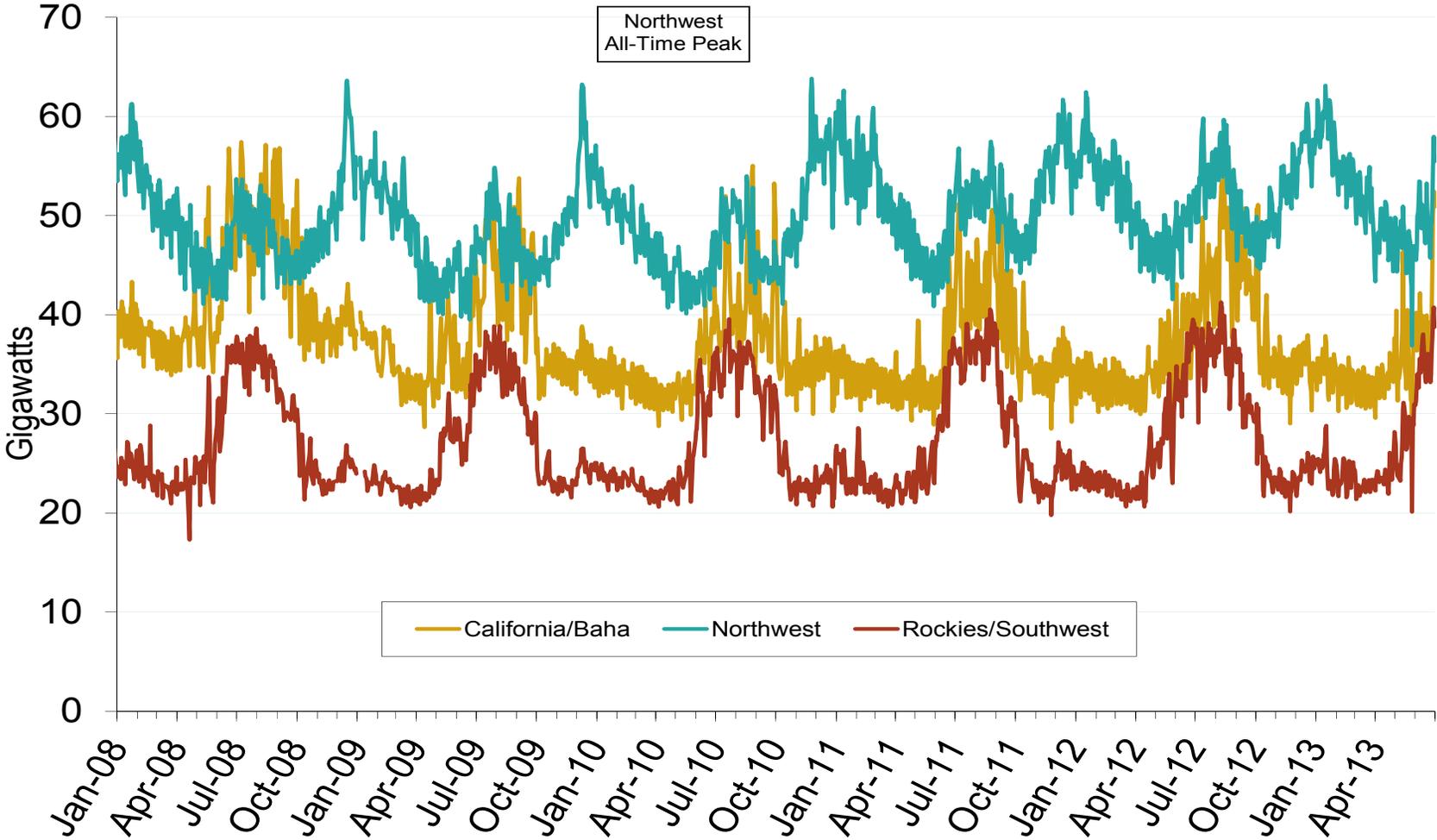
### Notes:

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

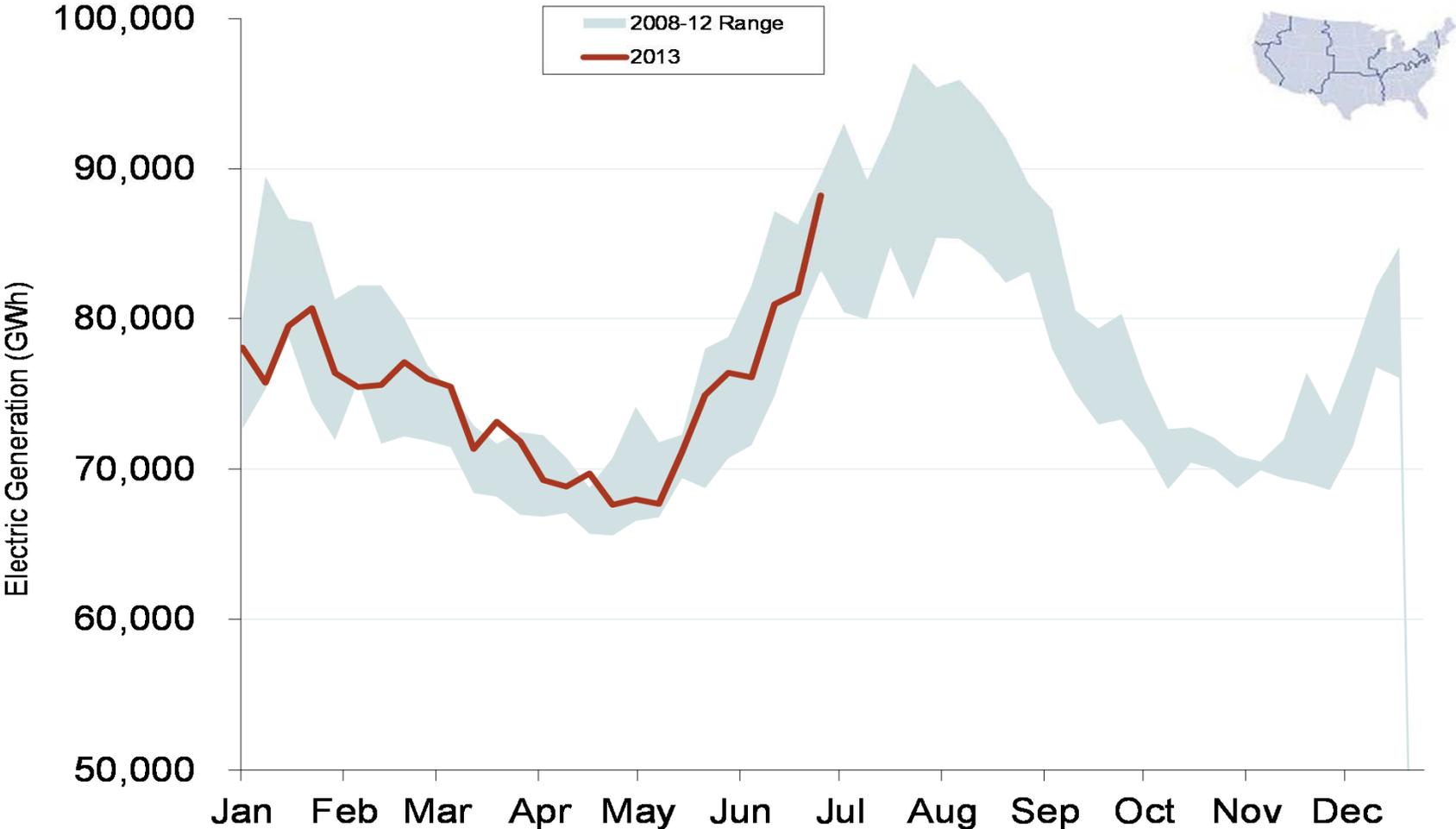
Updated: April 25, 2013

### 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>

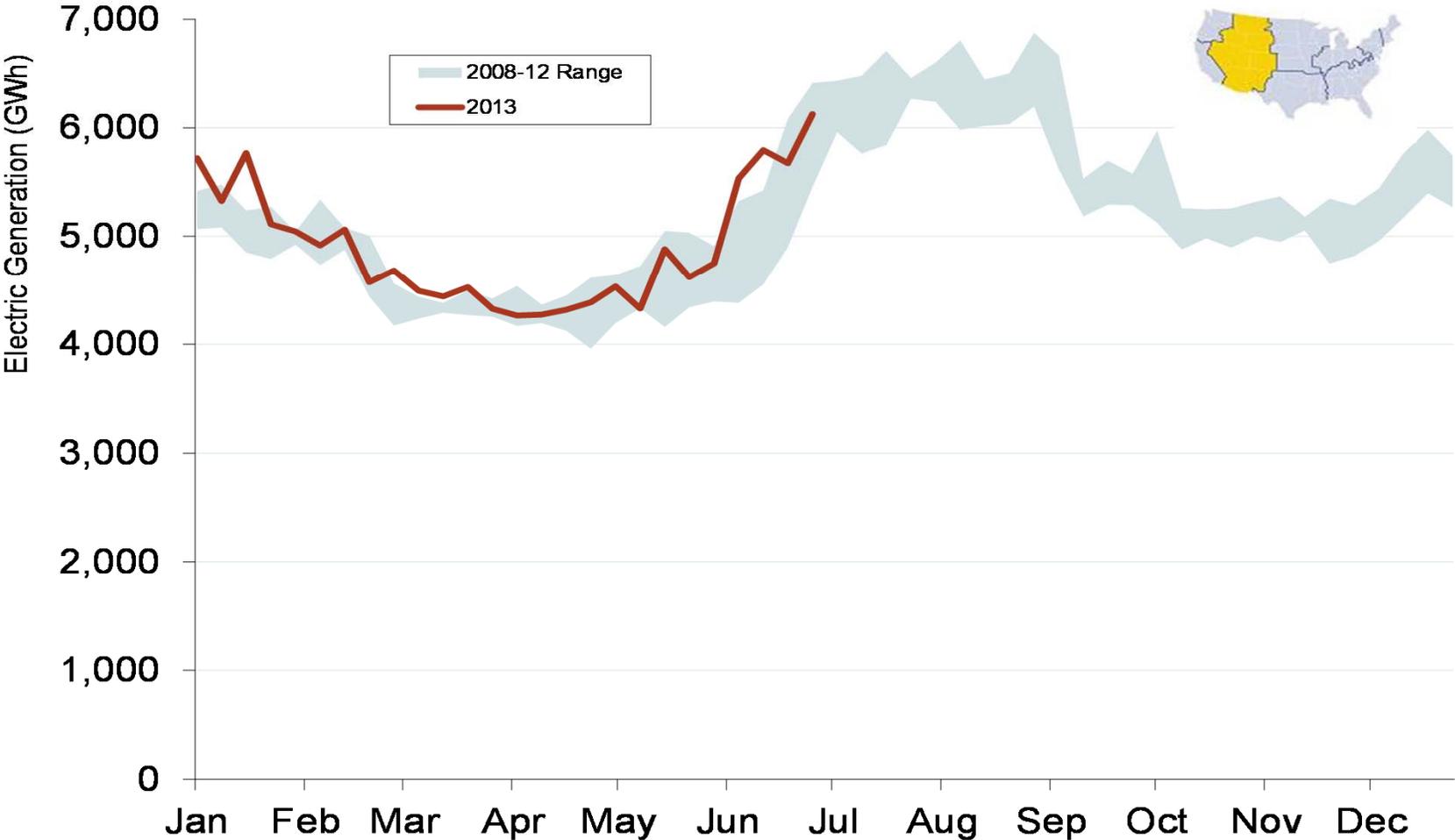
# Weekly U.S. Electric Generation Output



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

Updated: July 09, 2013

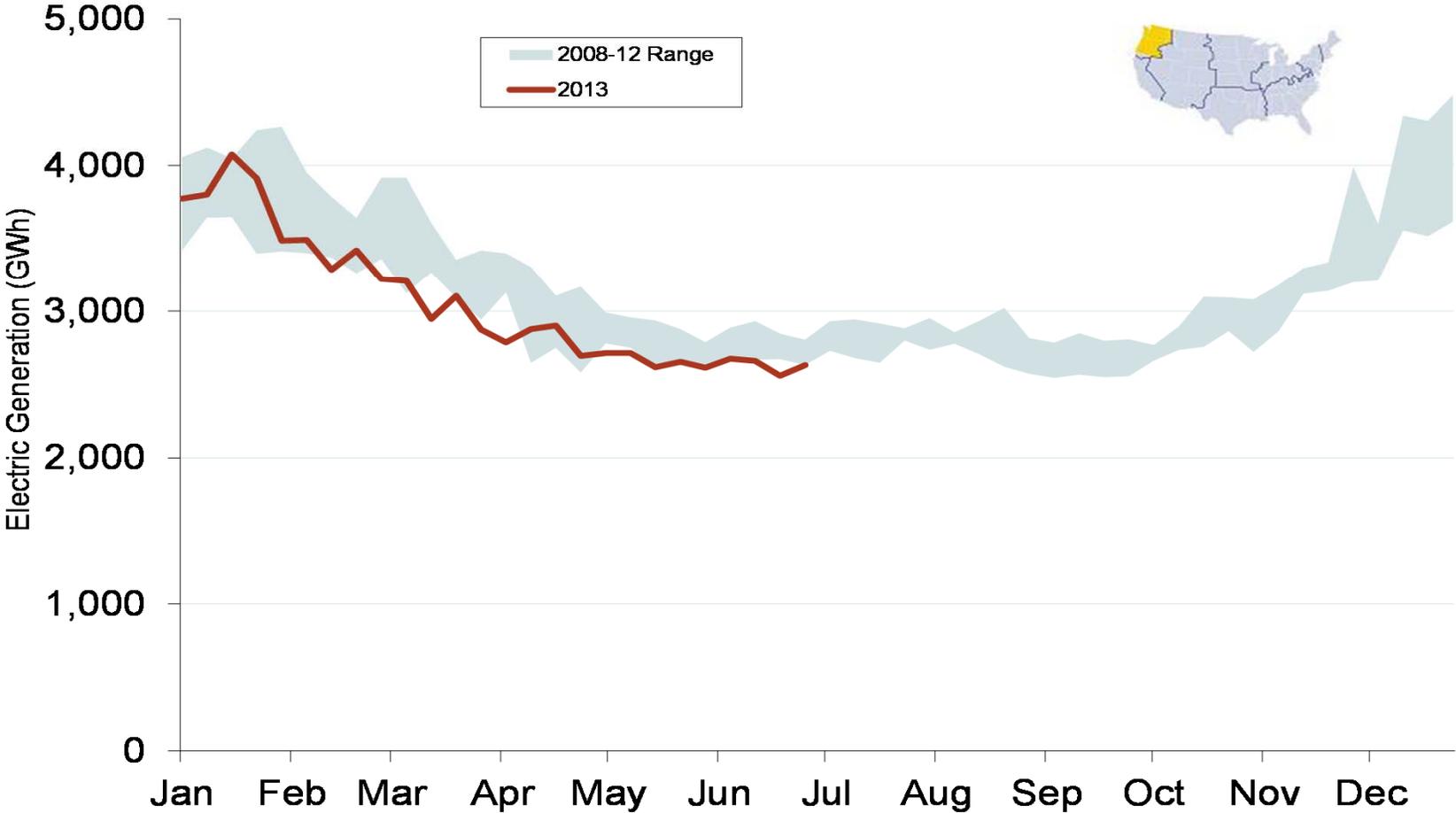
### Weekly Generation Output - Rocky Mountains



Source: Derived from EEI data  
July 2013 Western Snapshot Report

Updated: July 09, 2013

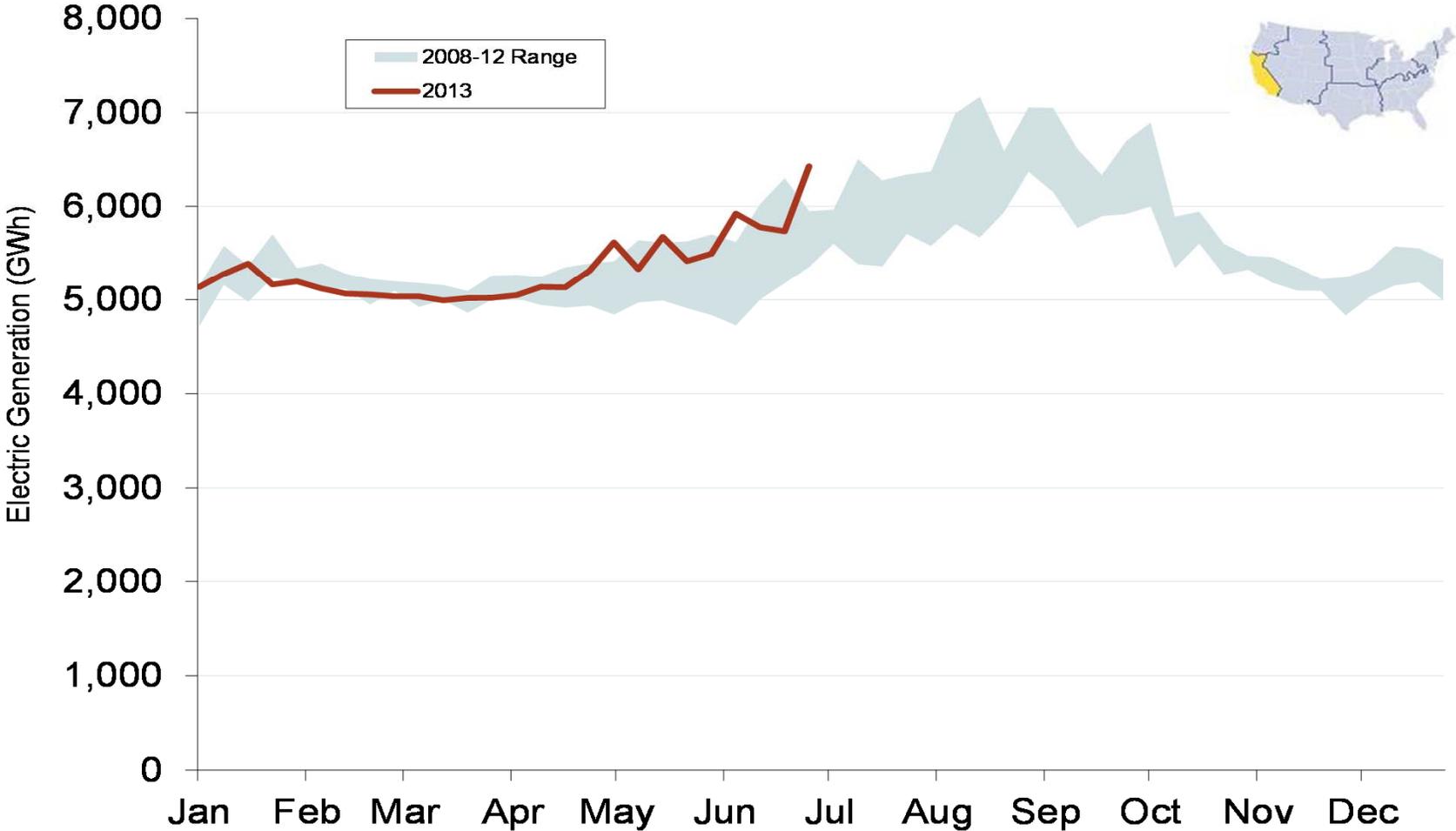
### Weekly Generation Output - Pacific Northwest



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

Updated: July 09, 2013

# Weekly Generation Output - California



Source: Derived from EEI data  
July 2013 Western Snapshot Report

Updated: July 09, 2013