

# **OE ENERGY MARKET SNAPSHOT**

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

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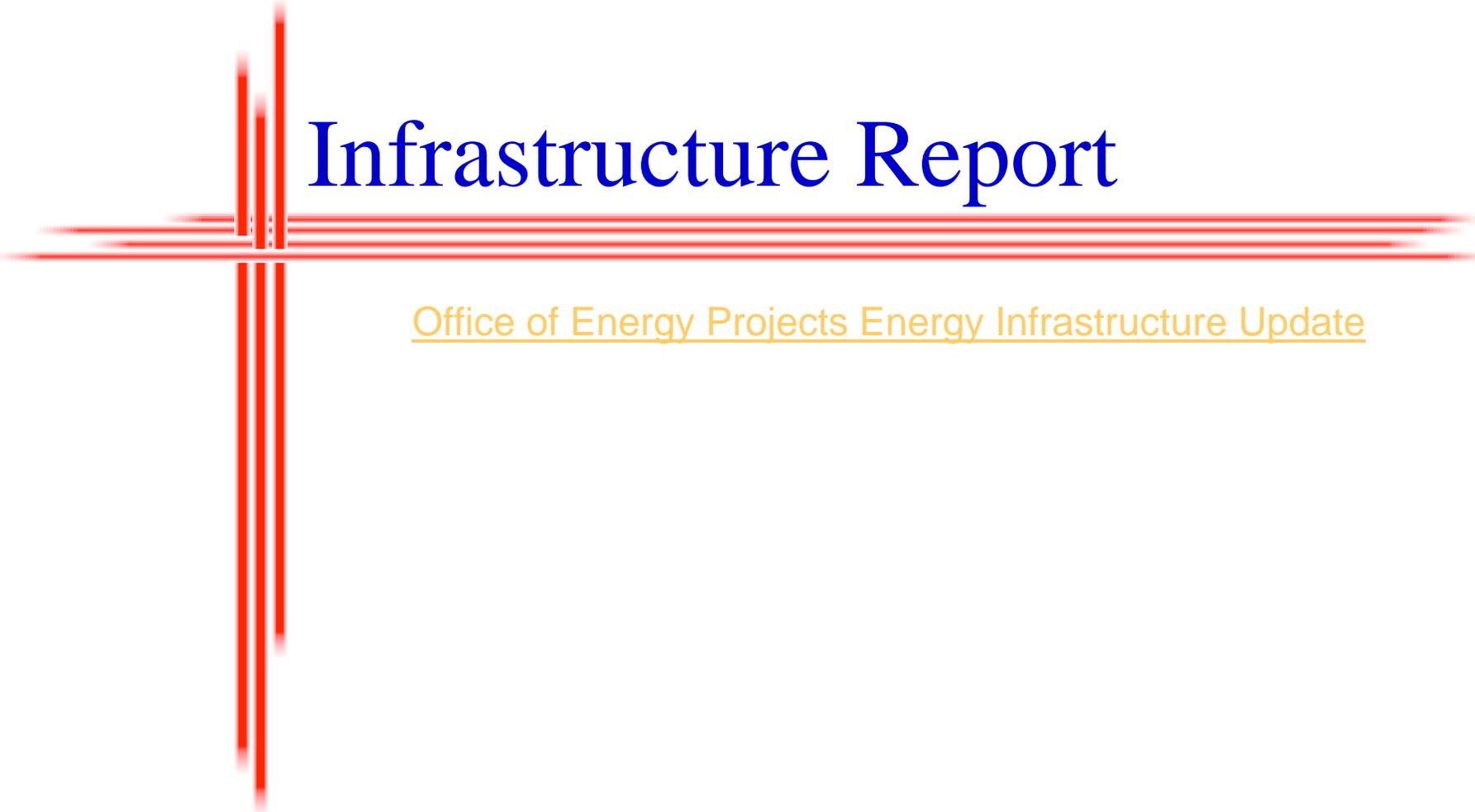
Office of Enforcement  
Federal Energy Regulatory Commission  
June 2013

## **2012 State of the Markets Report**

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

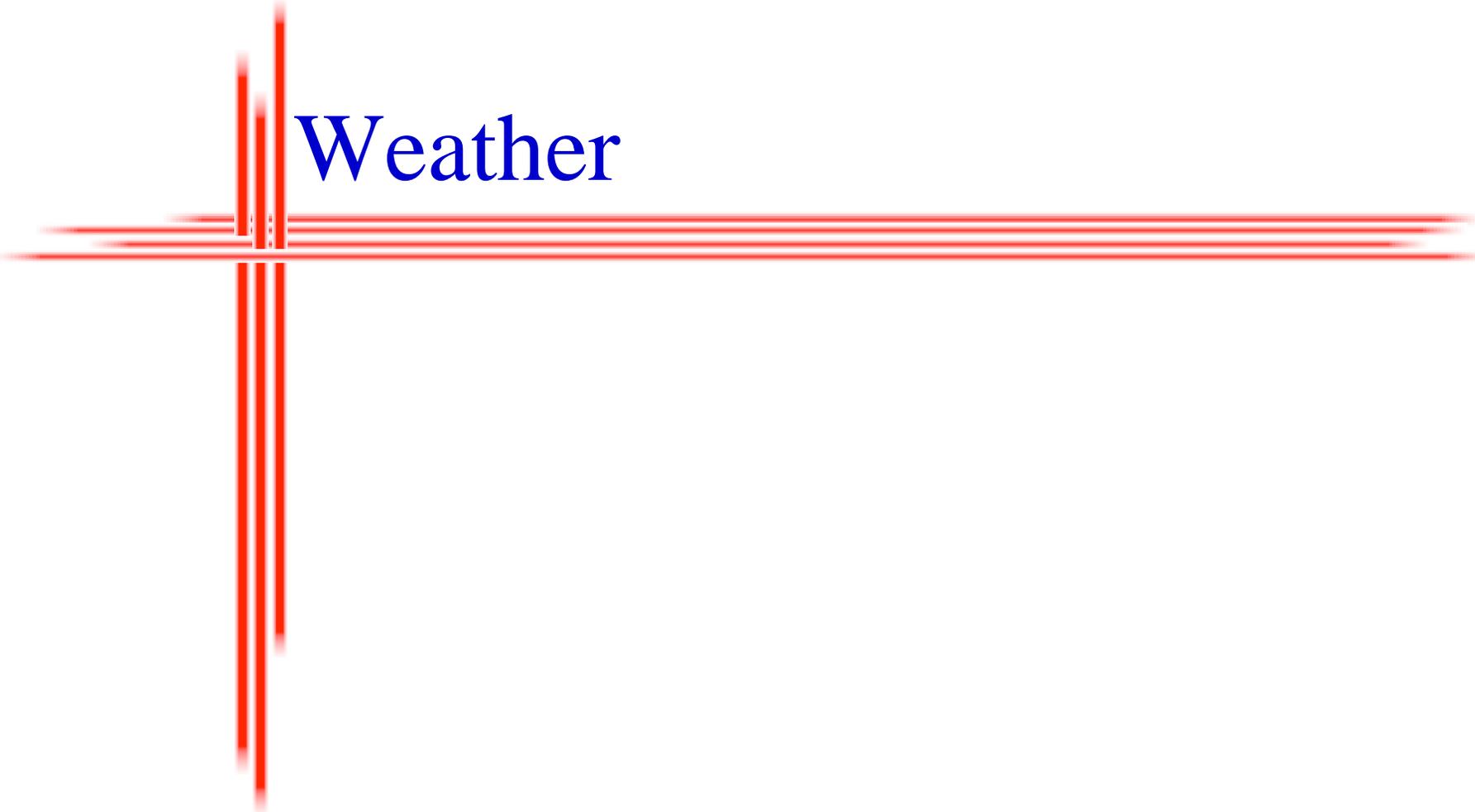
## **Summer 2013 Energy Market and Reliability Assessment**

<http://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2013/05-16-13.pdf>



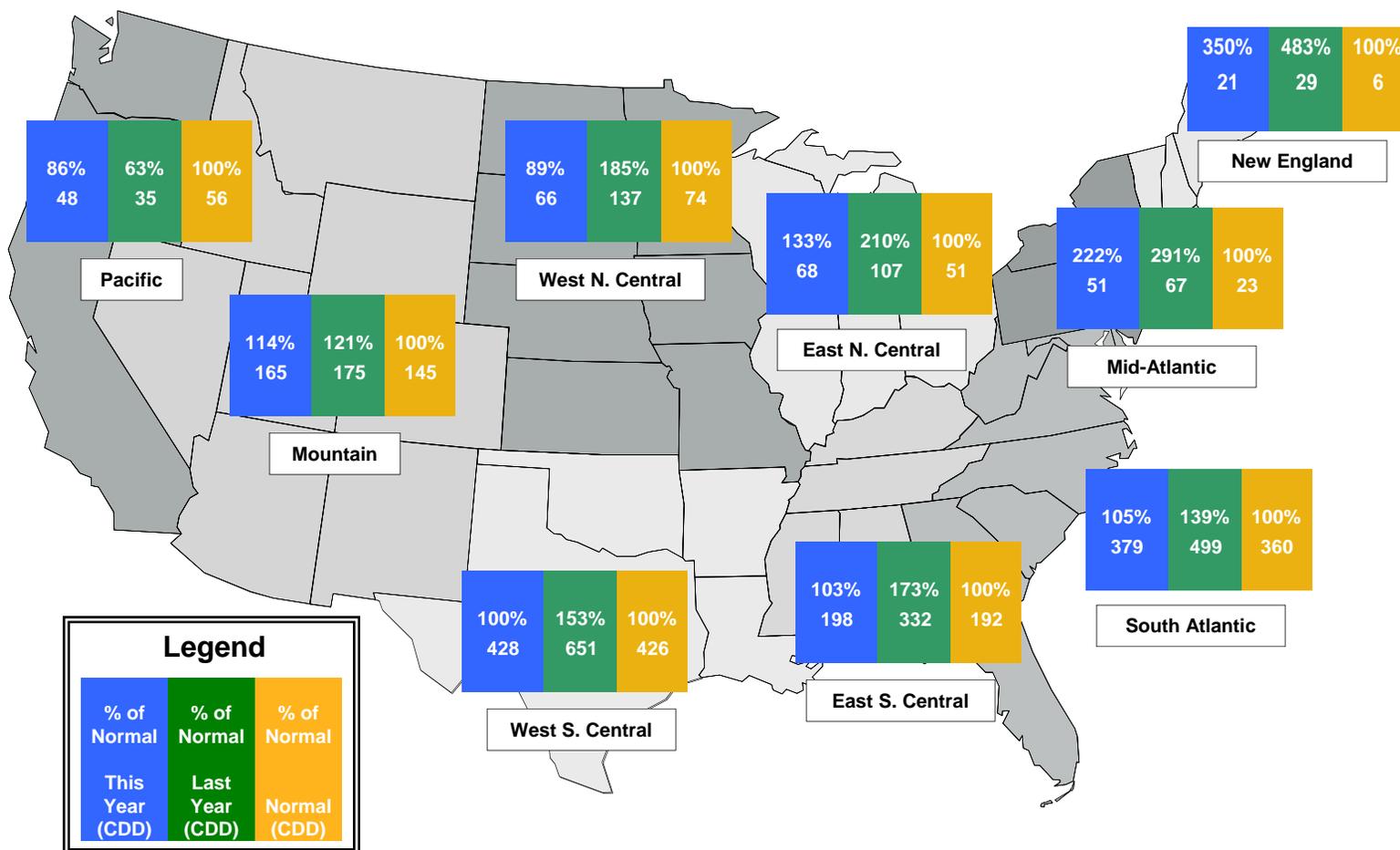
# Infrastructure Report

Office of Energy Projects Energy Infrastructure Update



# Weather

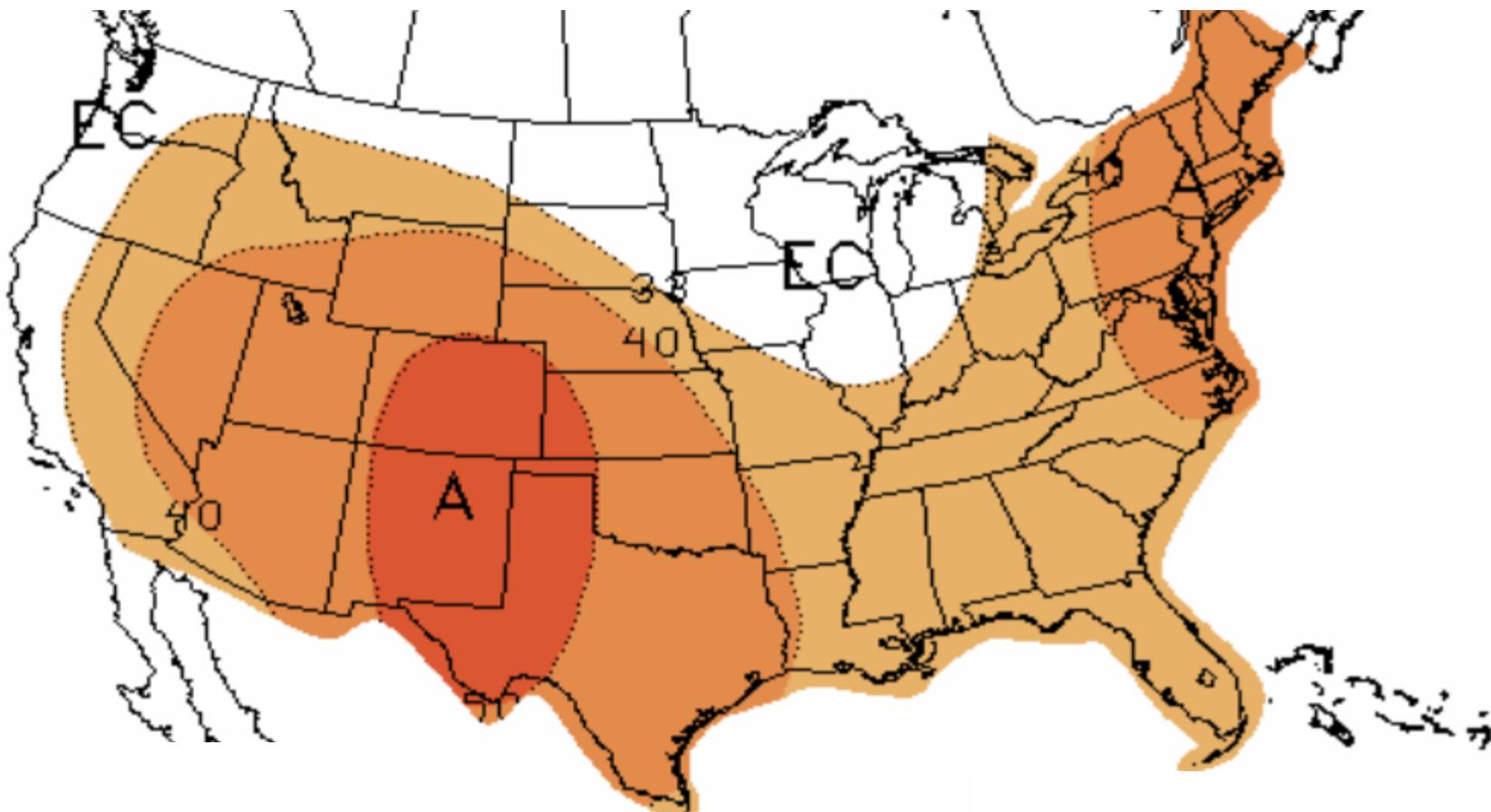
## Regional Cooling Degree Days – January to June 2013



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

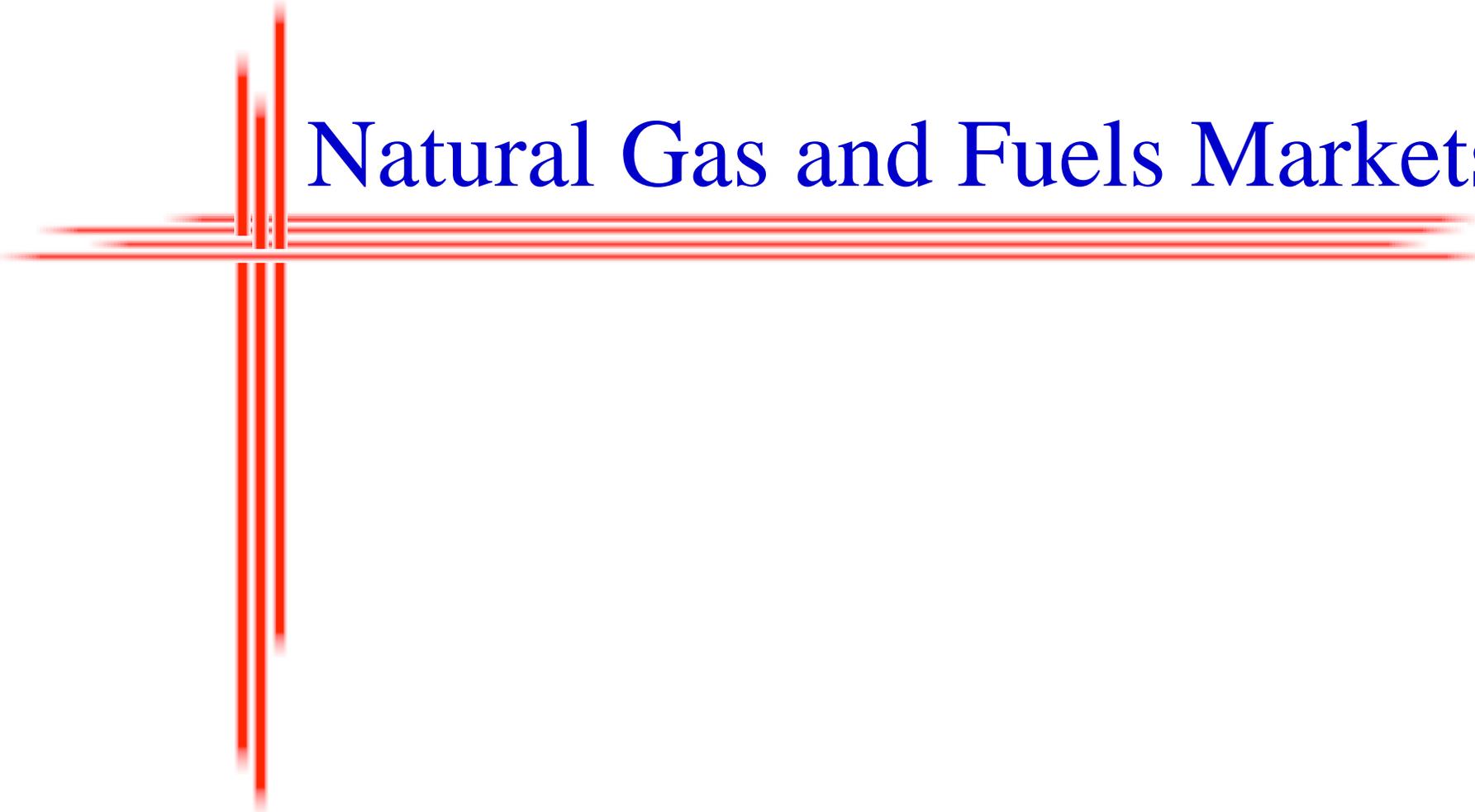
Updated: June 7, 2013

## NOAA's 3 Month Temperature Forecast Made February 21, 2013, Valid for July 2013 – August 2013



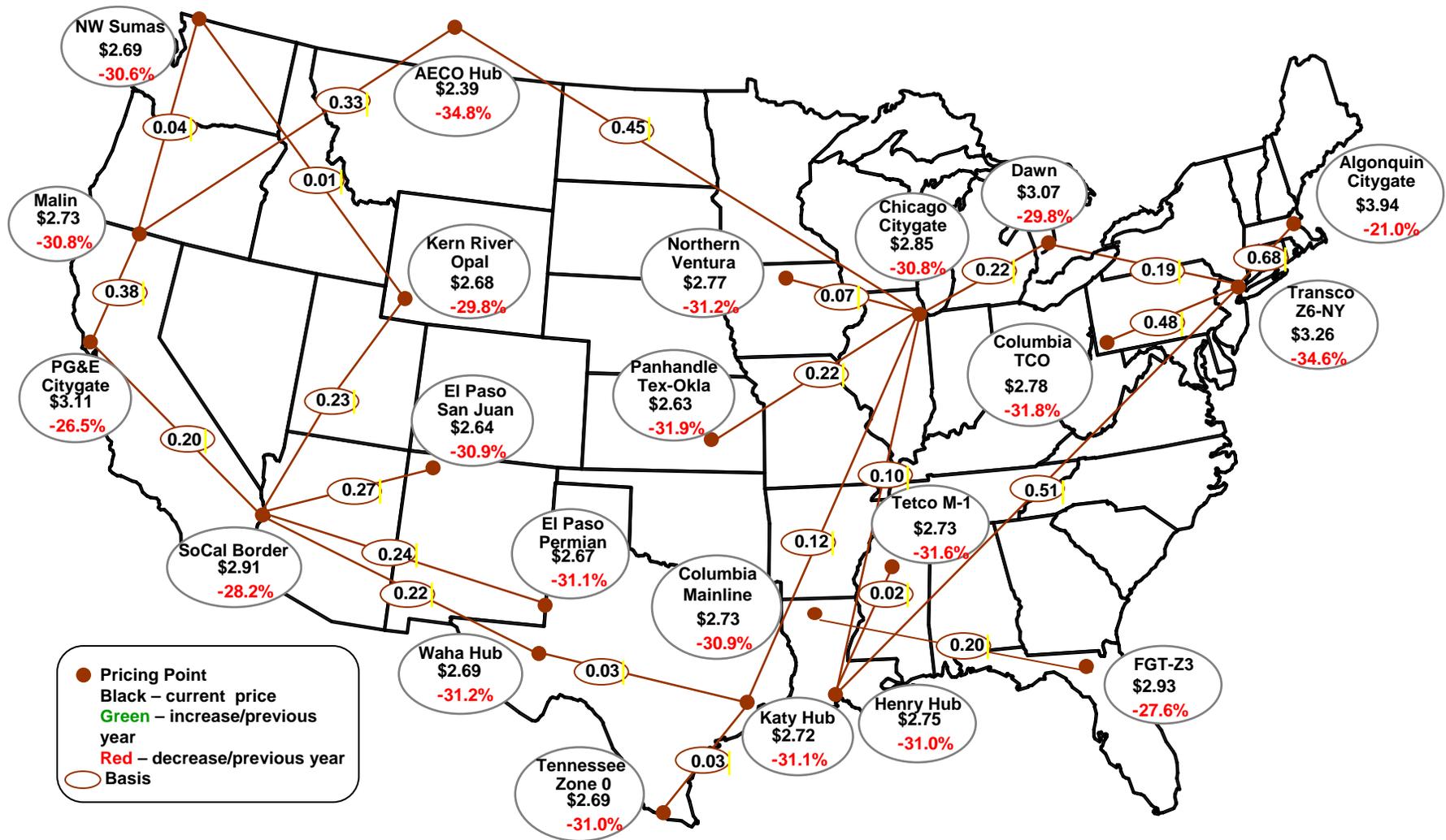
Note: "A" areas are above normal, "B" areas are below normal and "EC" means equal chance. Normal is based on the last 30 years of data.  
Source: Derived from NOAA data.

Updated: June 7, 2013



# Natural Gas and Fuels Markets

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

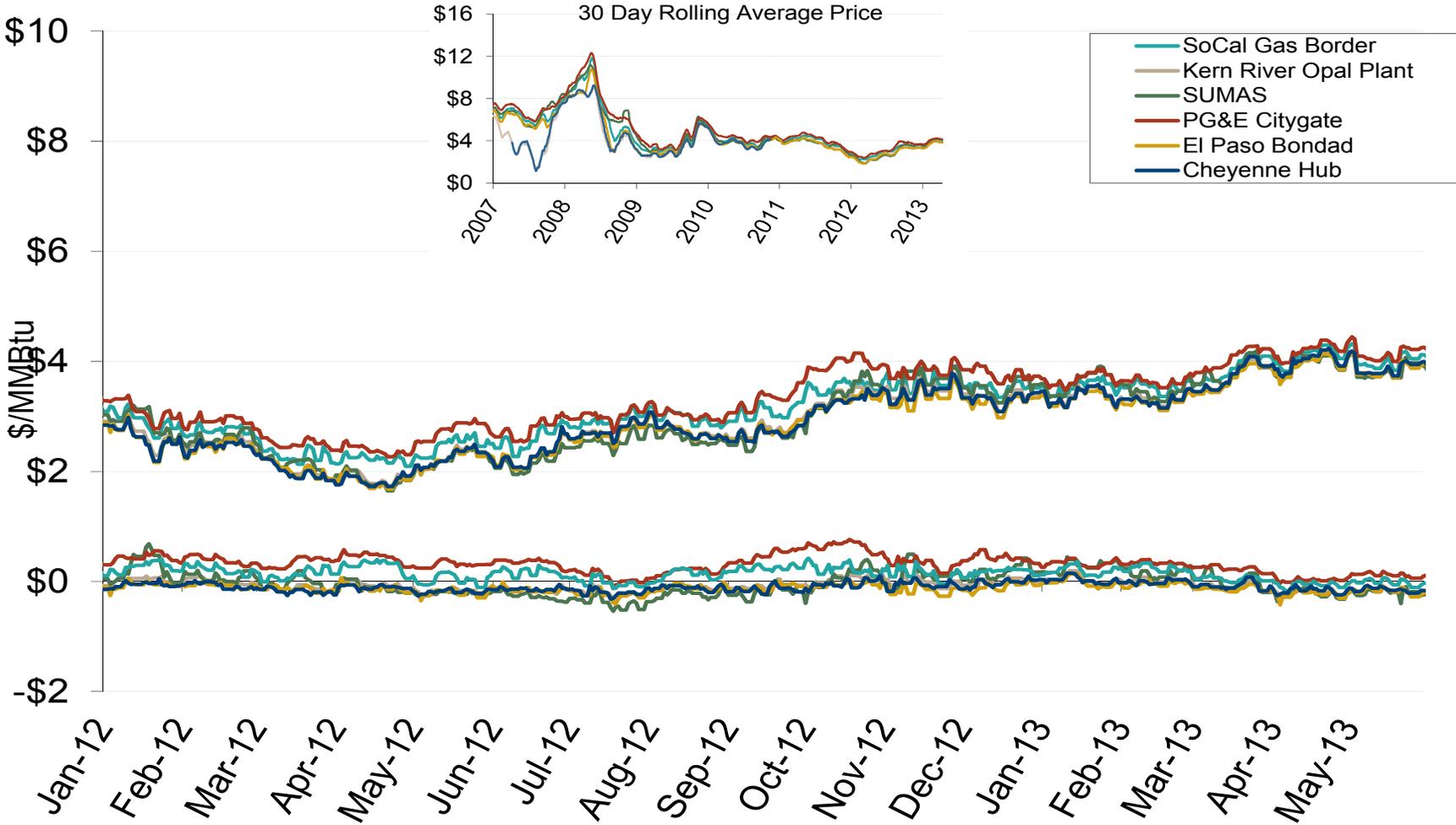


Source: Derived from *Platts* data.  
June 2013 Western Snapshot Report

## Western Annual Average Spot Hub Prices

Annual Average Day Ahead Prices (\$/MMBtu)						
	2008	2009	2010	2011	2012	5-Year Avg
Socal Border	\$7.80	\$3.61	\$4.25	\$4.05	\$2.91	\$4.53
PG&E Citygate	\$8.59	\$4.13	\$4.53	\$4.24	\$3.11	\$4.92
Opal	\$6.48	\$3.13	\$3.94	\$3.81	\$2.68	\$4.01
Sumas (Huntington)	\$8.14	\$3.76	\$4.10	\$3.87	\$2.69	\$4.51
El Paso Bondad	\$6.99	\$3.28	\$4.02	\$3.80	\$2.62	\$4.14
El Paso San Juan	\$7.16	\$3.33	\$4.07	\$3.82	\$2.64	\$4.20
Malin	\$8.17	\$3.76	\$4.21	\$3.94	\$2.73	\$4.56

# Western Day-Ahead Hub Spot Prices and Basis

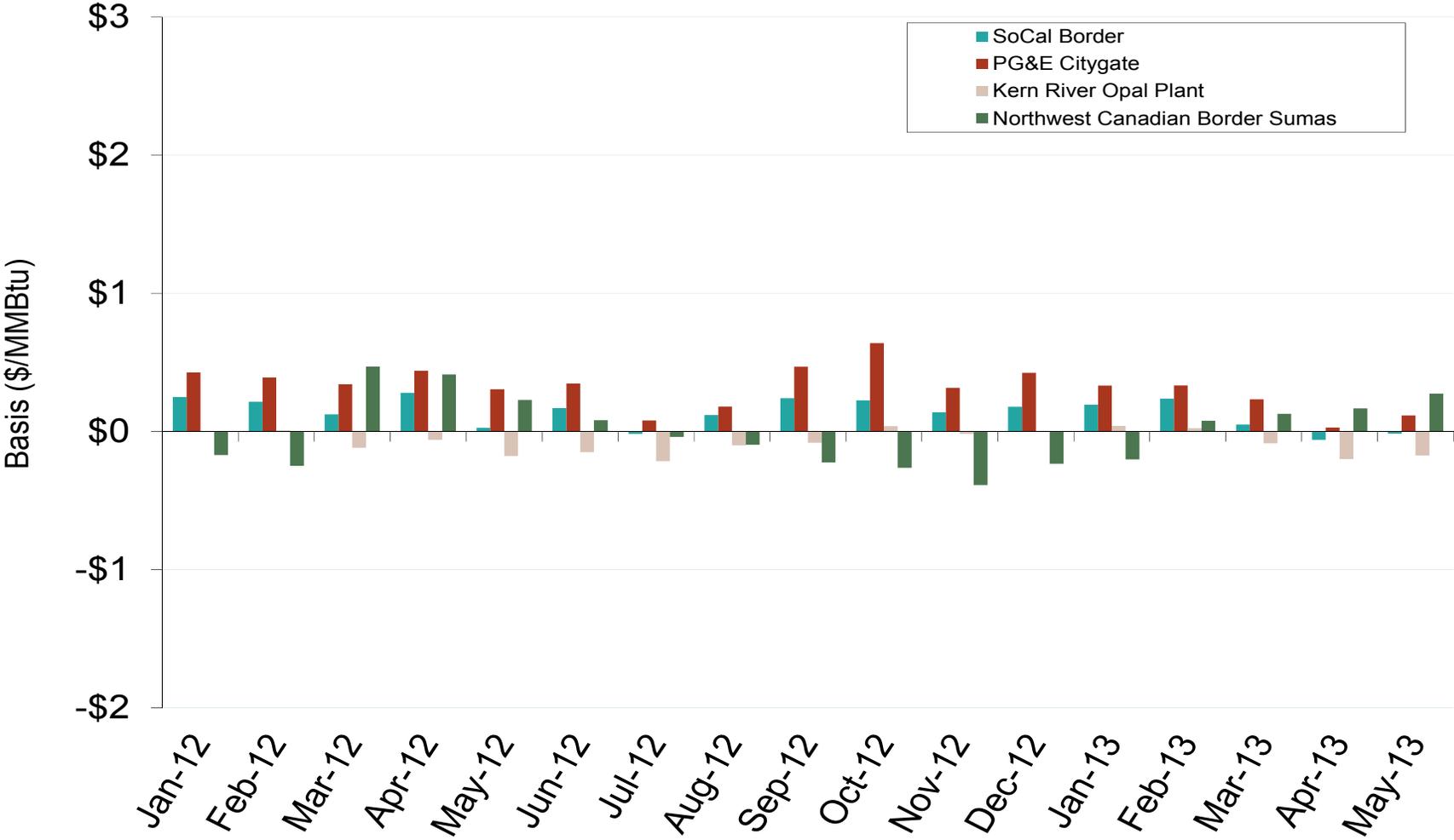


Source: Derived from Platts data  
June 2013 Western Snapshot Report

Updated: June 06, 2013

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

### Western Monthly Average Basis Value to Henry Hub

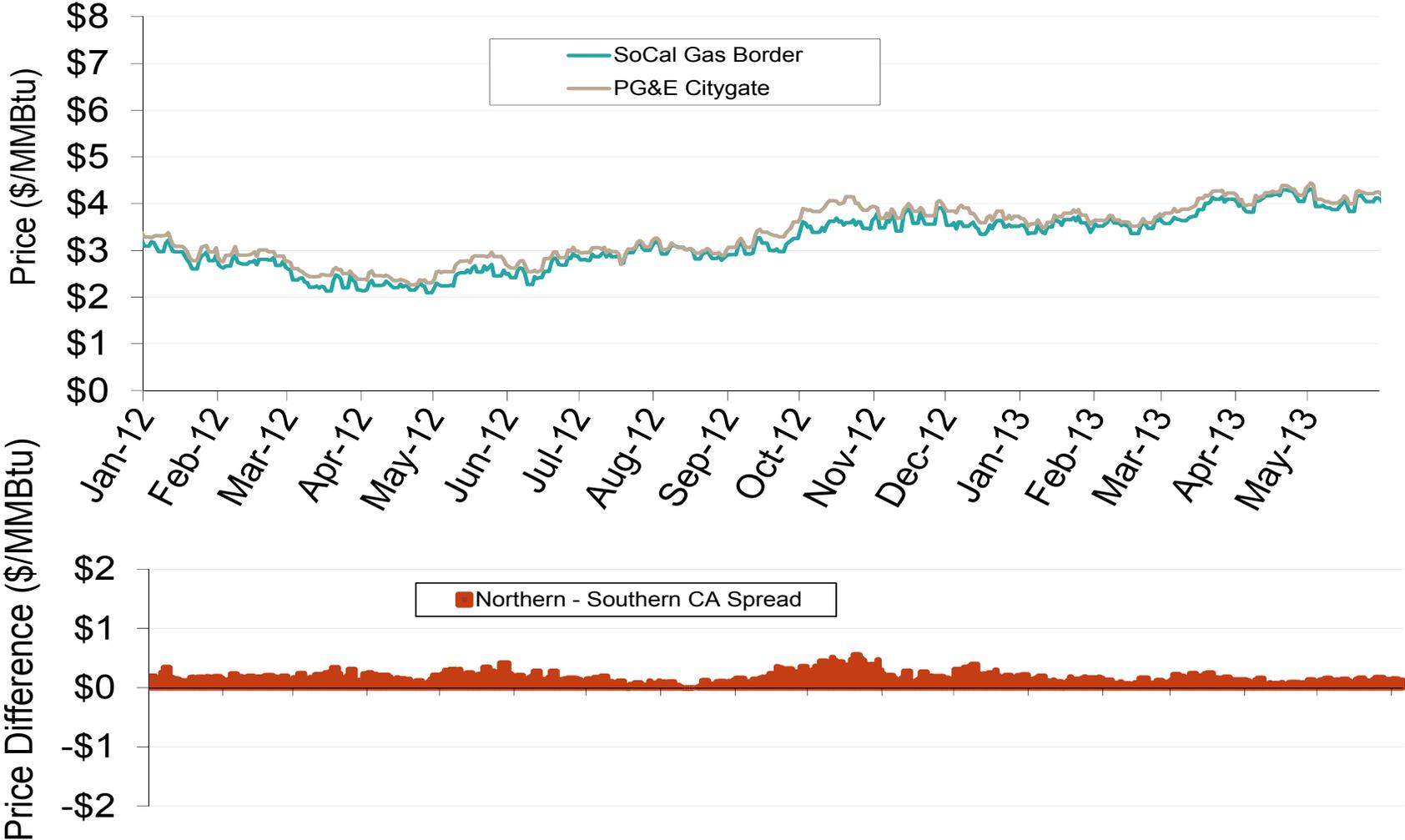


Source: Derived from Platts data  
June 2013 Western Snapshot Report

Updated: June 06, 2013

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### Difference in Northern and Southern California Daily Spot Prices



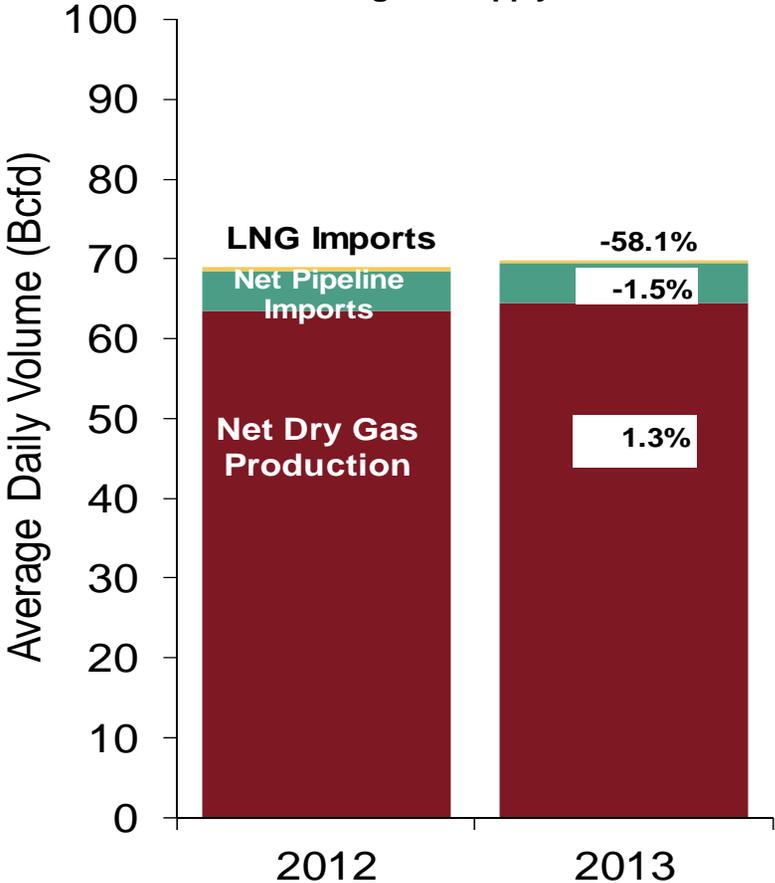
Source: Derived from Platts data  
June 2013 Western Snapshot Report

Updated: June 06, 2013

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

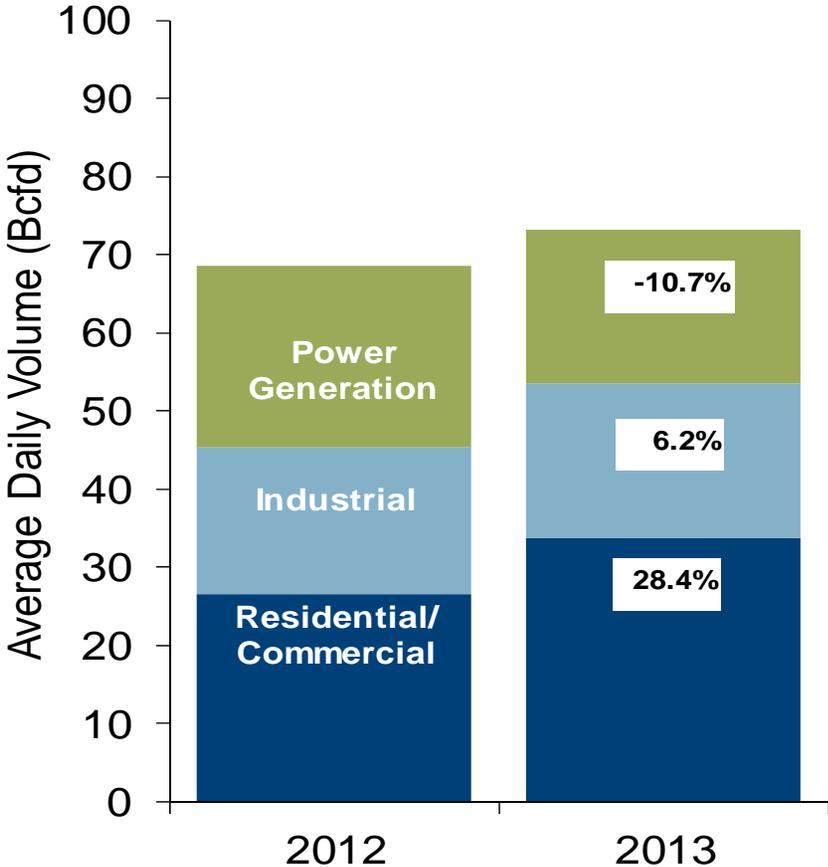
## US Natural Gas Supply

Total Change in Supply 0.0%



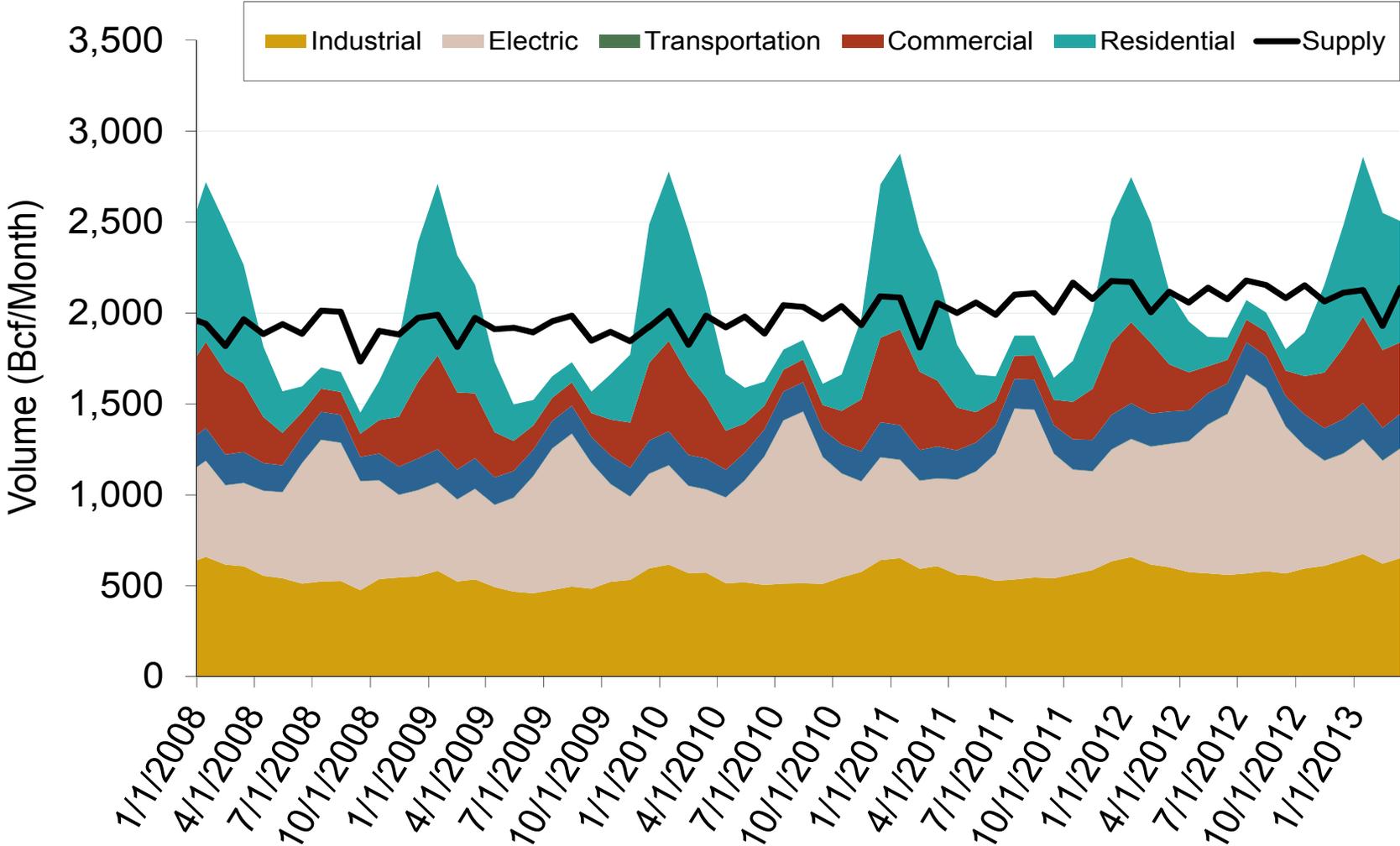
## US Natural Gas Demand

Total Change in Demand 10.4%



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

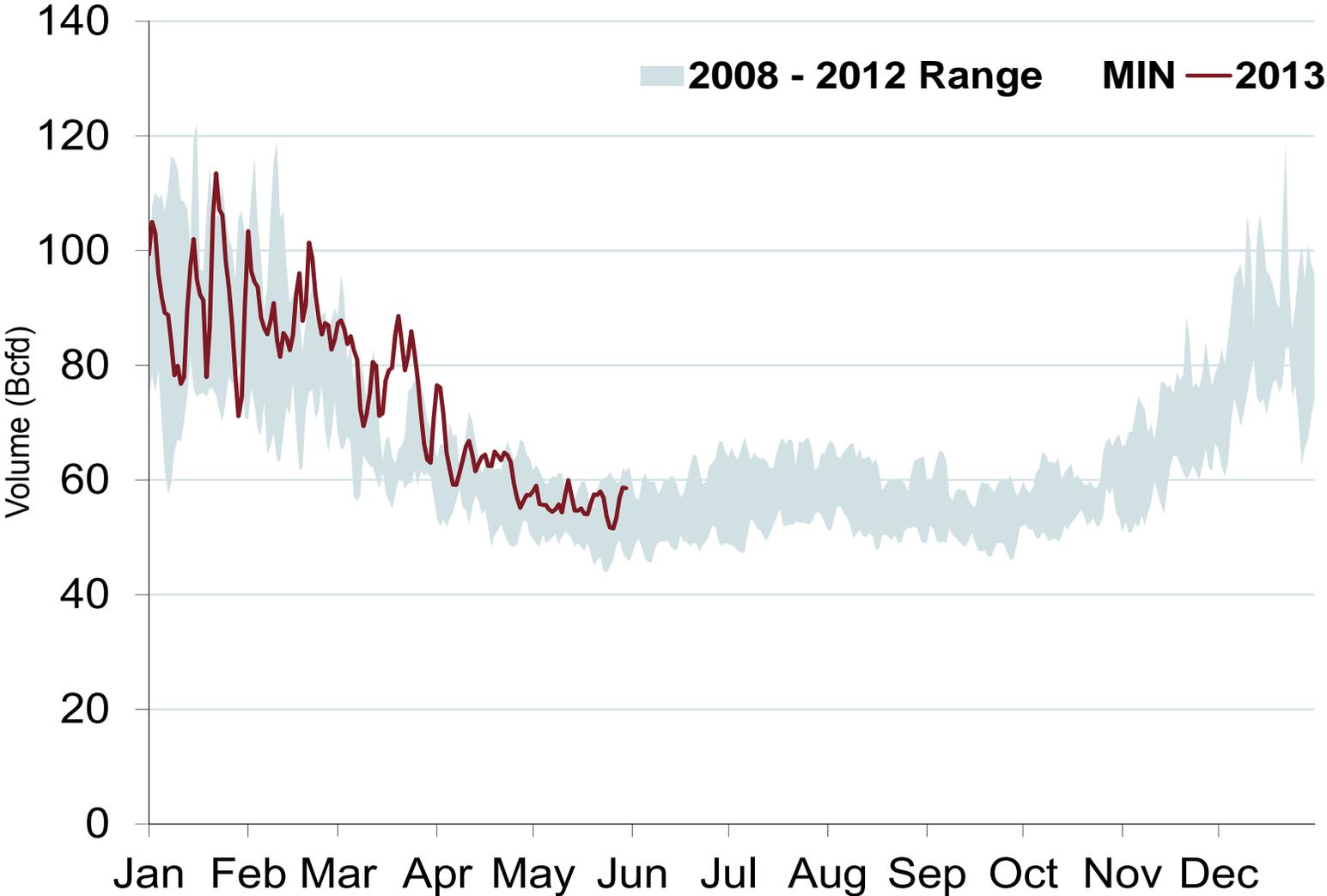
### Annual U.S. Natural Gas Consumption by Sector



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

Source: Derived from EIA data

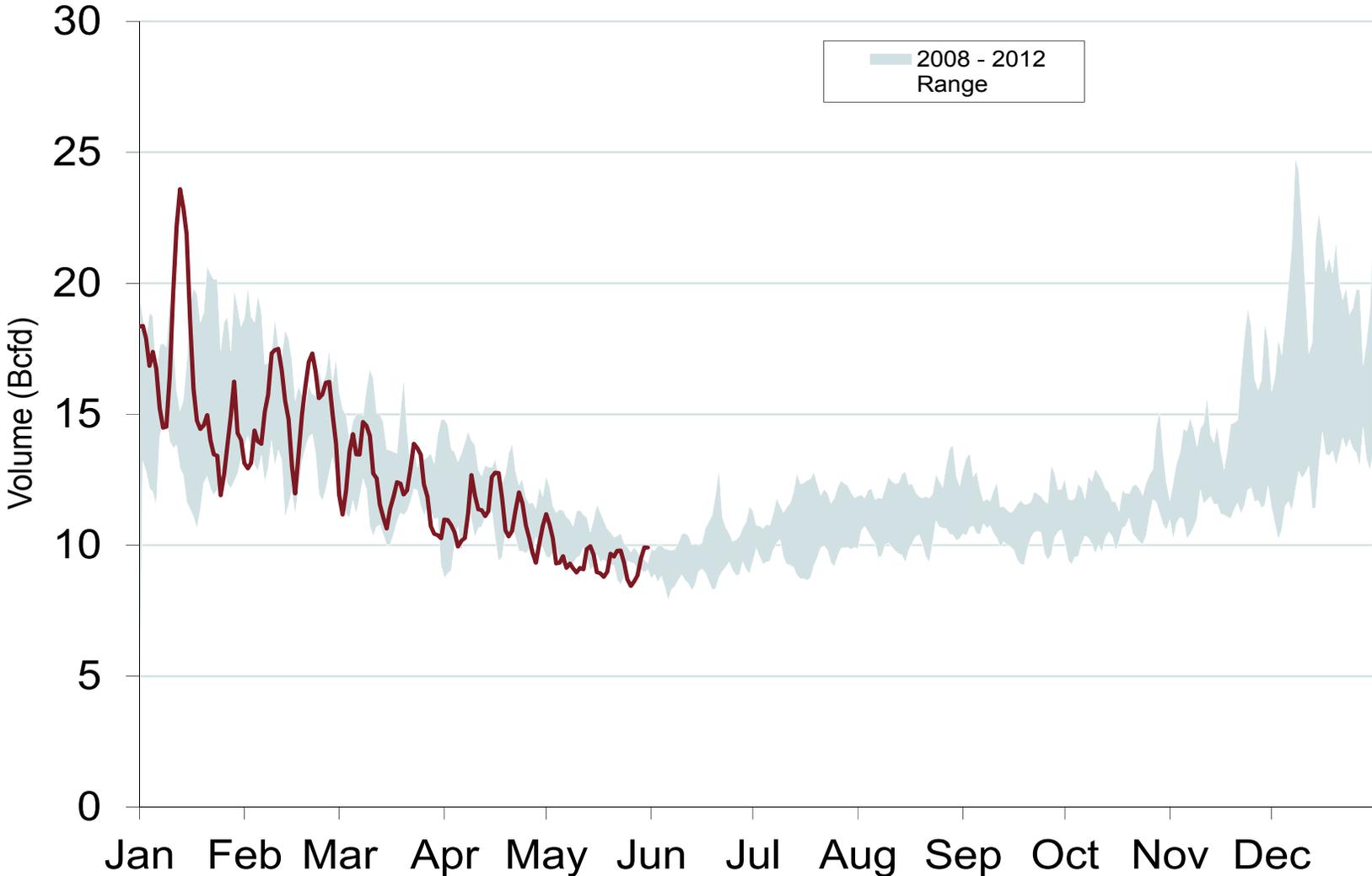
### Total U.S. Natural Gas Demand All Sectors



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

Updated: June 05, 2013

### Daily Western Natural Gas Demand All Sectors

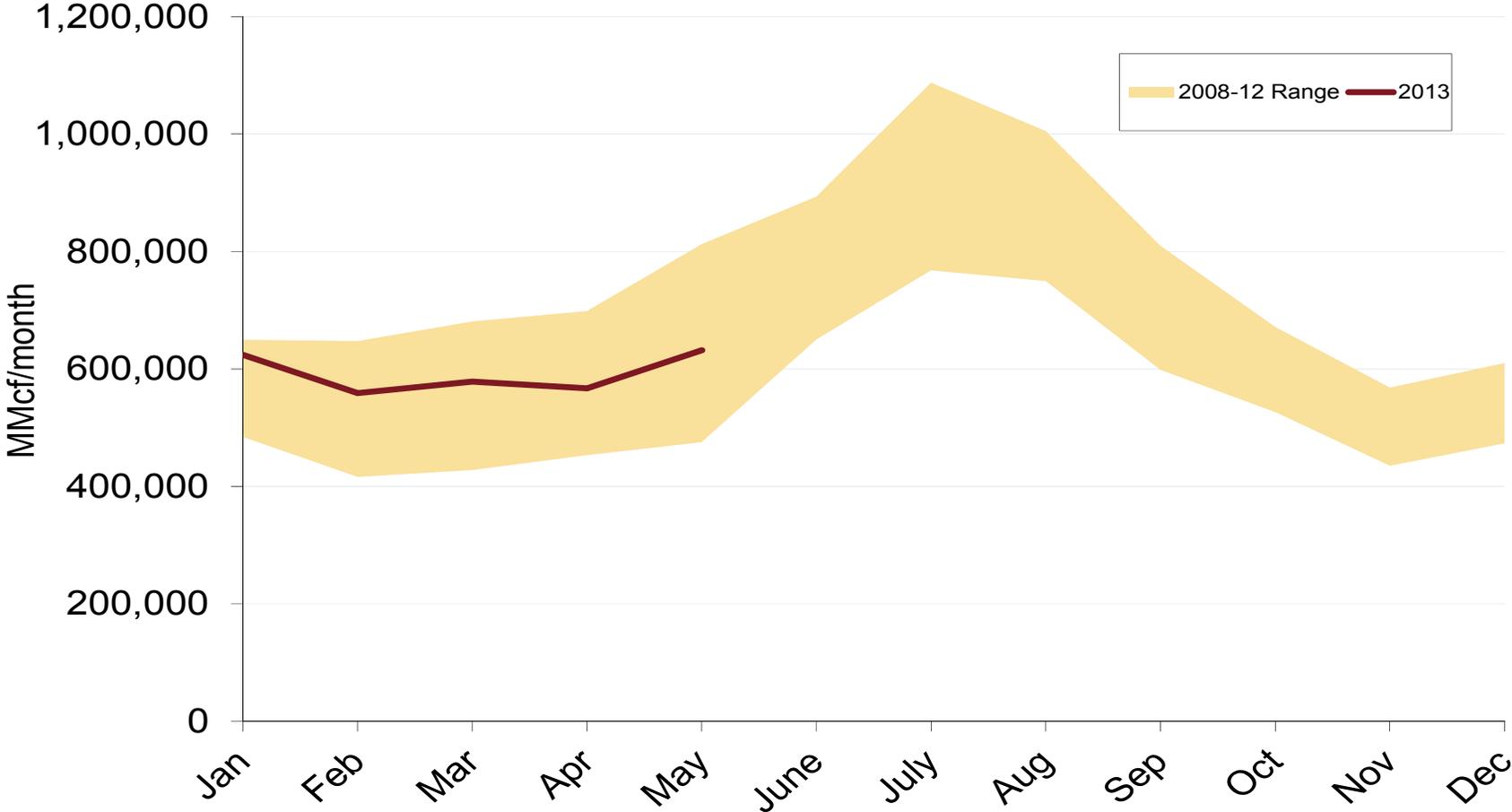


Source: Derived from *Bentek Energy* data  
June 2013 Western Snapshot Report

Updated: June 05, 2013

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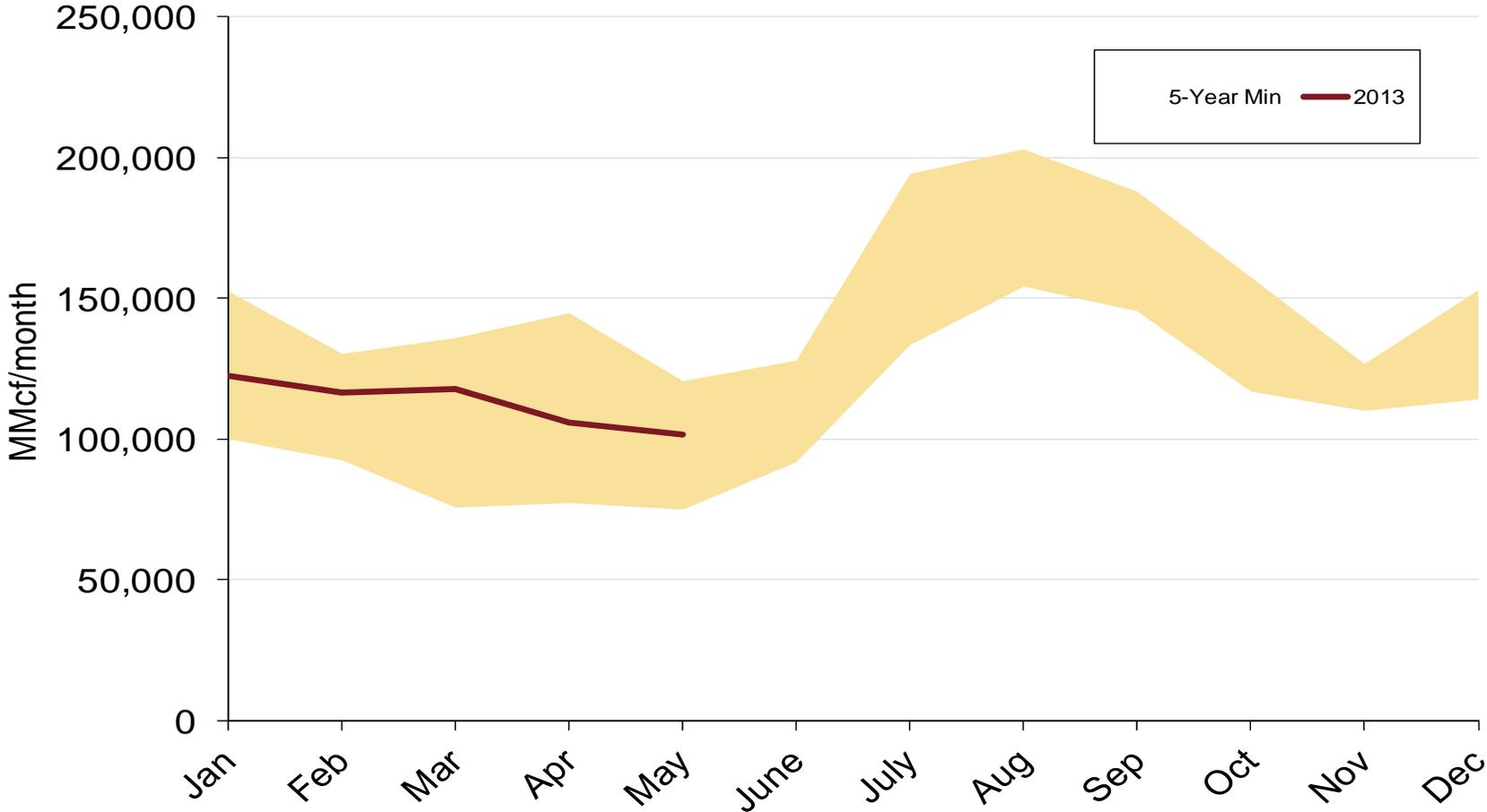
## U.S. Natural Gas Consumption for Power Generation



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

Updated: June 05, 2013

# Western Natural Gas Consumption for Power Generation

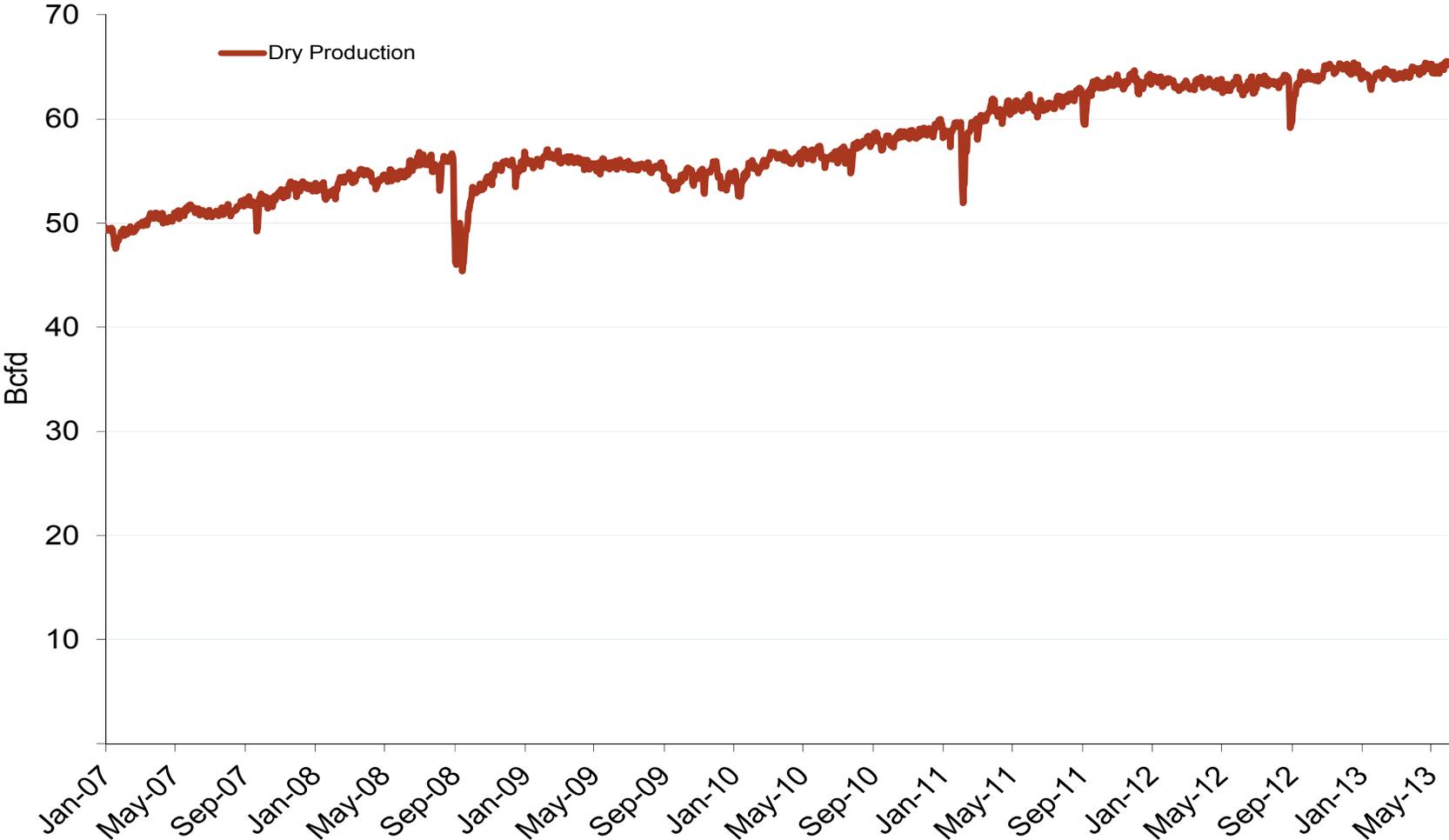


Source: Derived from *Bentek Energy* data  
June 2013 Western Snapshot Report

Updated: June 8, 2013

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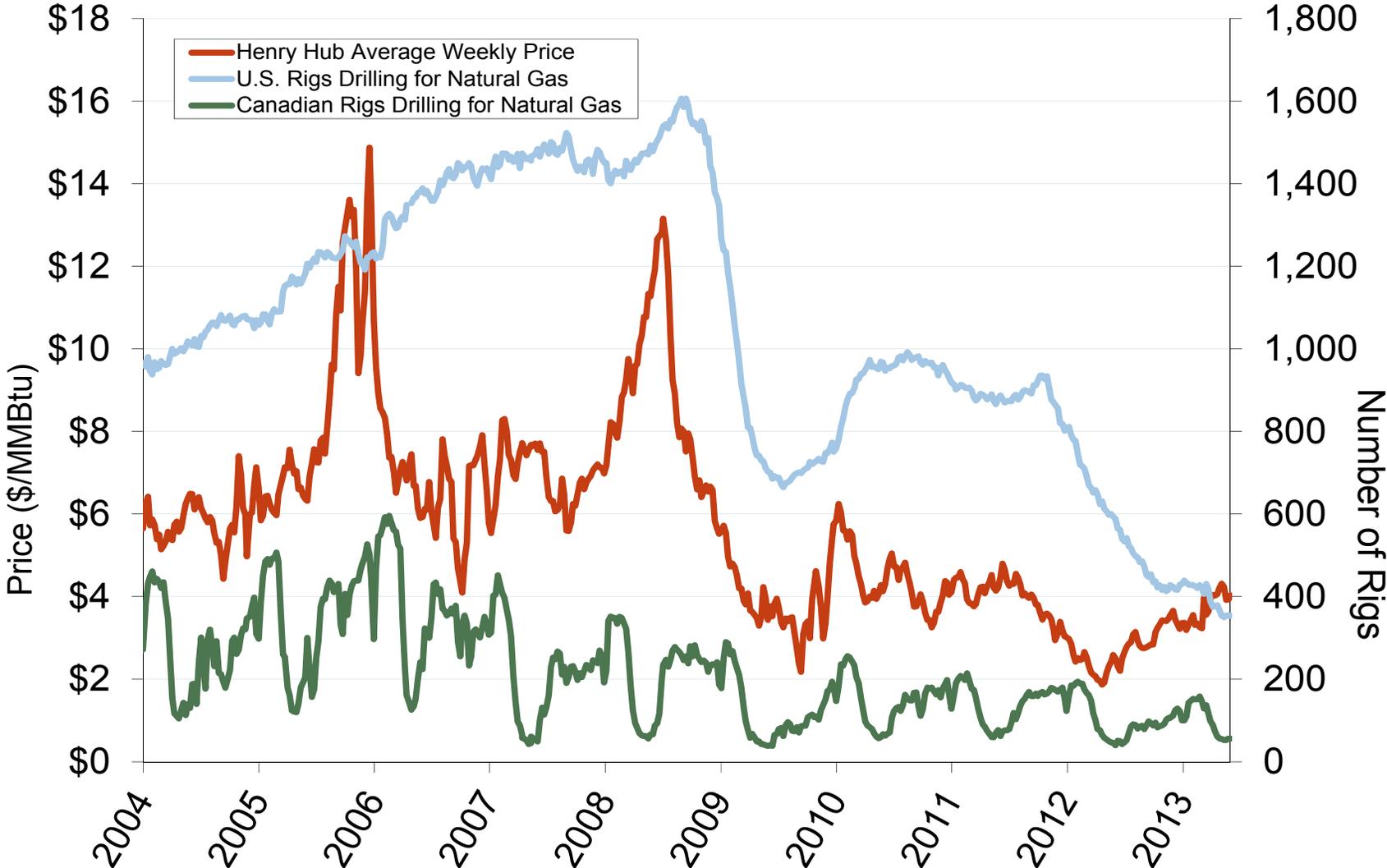
# Monthly U.S. Dry Gas Production – Lower 48 States



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

Updated: June 05, 2013

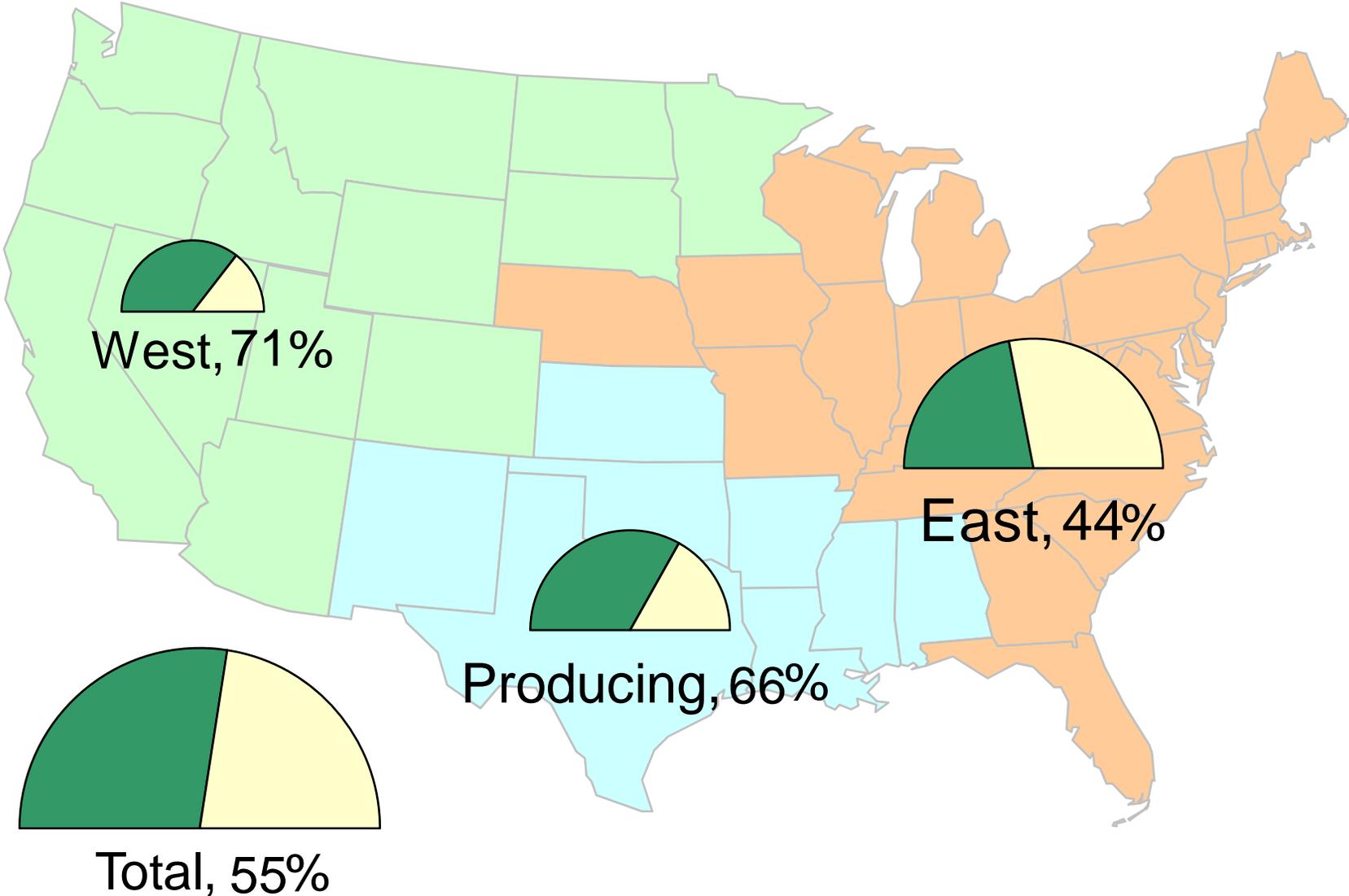
# U.S. and Canadian NG Drilling Rig Count and Daily Spot Prices



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

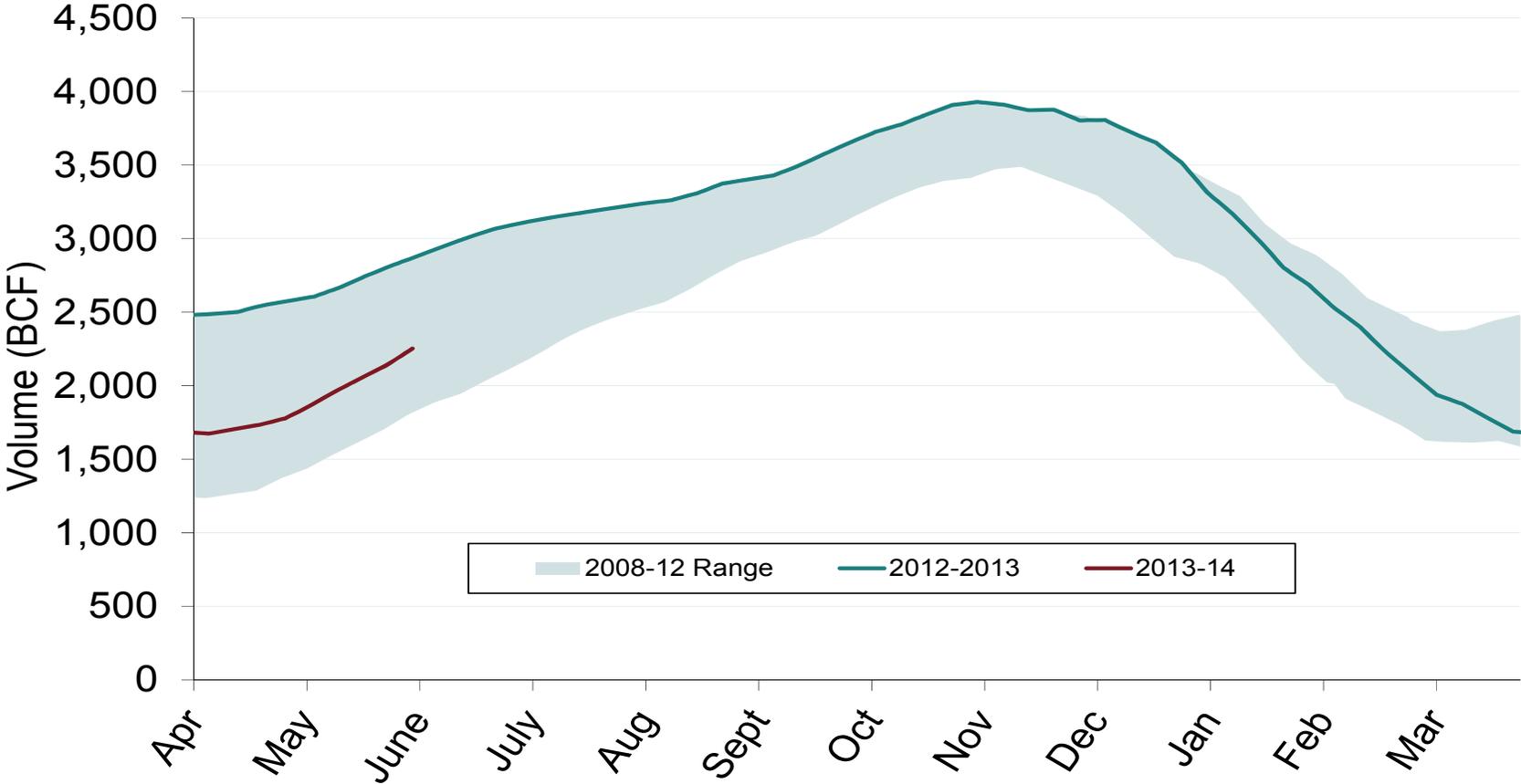
Updated: June 07, 2013

# Natural Gas Storage Inventories – May 31, 2013



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

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

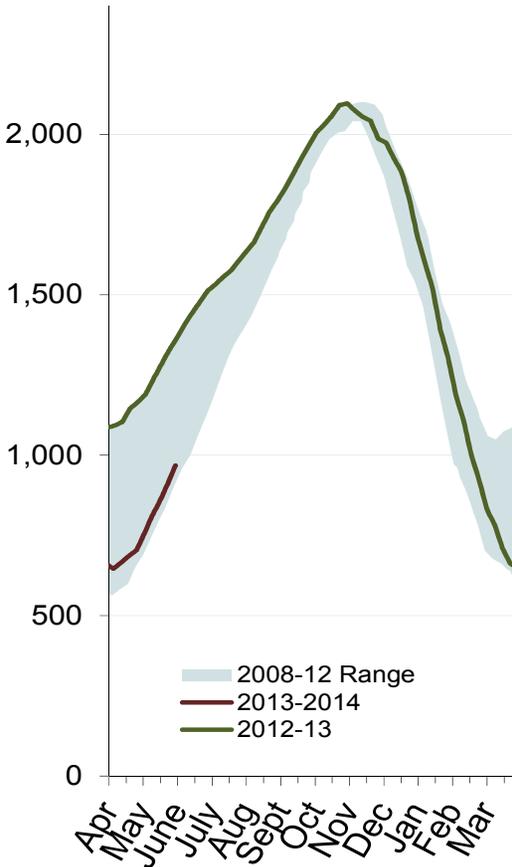


Source: Derived from EIA data  
June 2013 Western Snapshot Report

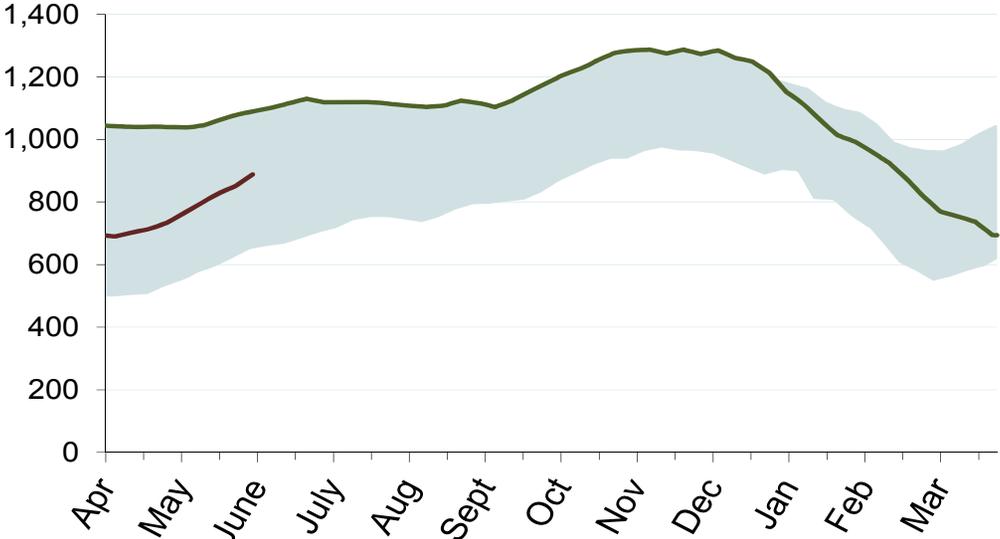
Updated: June 07, 2013

# Regional Totals of Working Gas in Storage

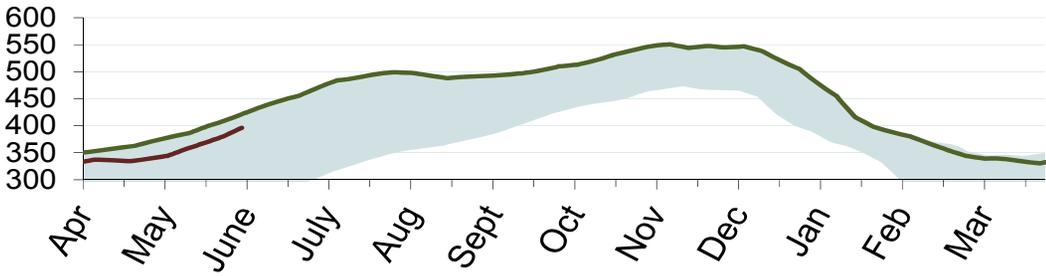
### Eastern Consuming Region



### Producing Region



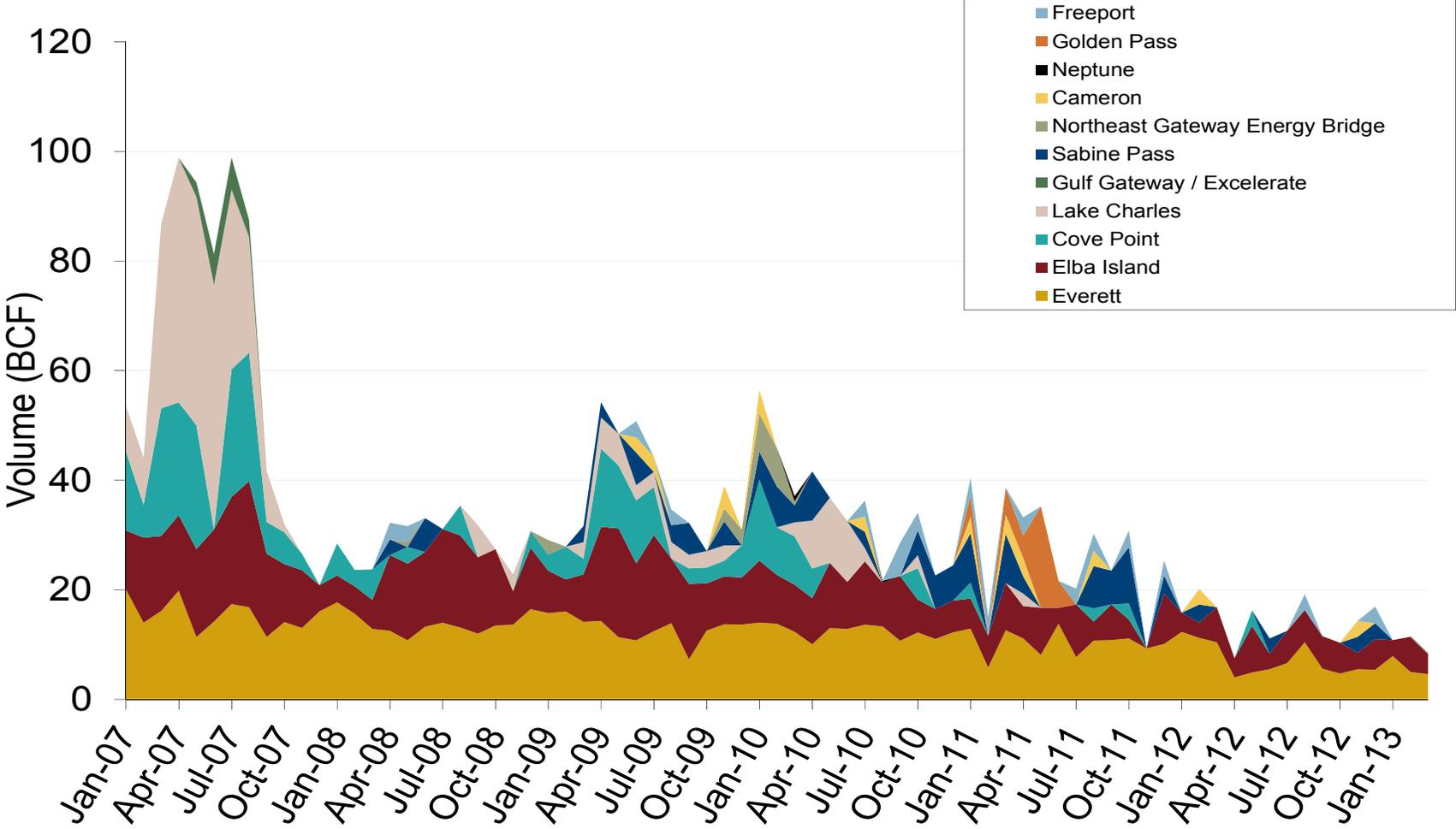
### Western Consuming Region



## World LNG Estimated July 2013 Landed Prices



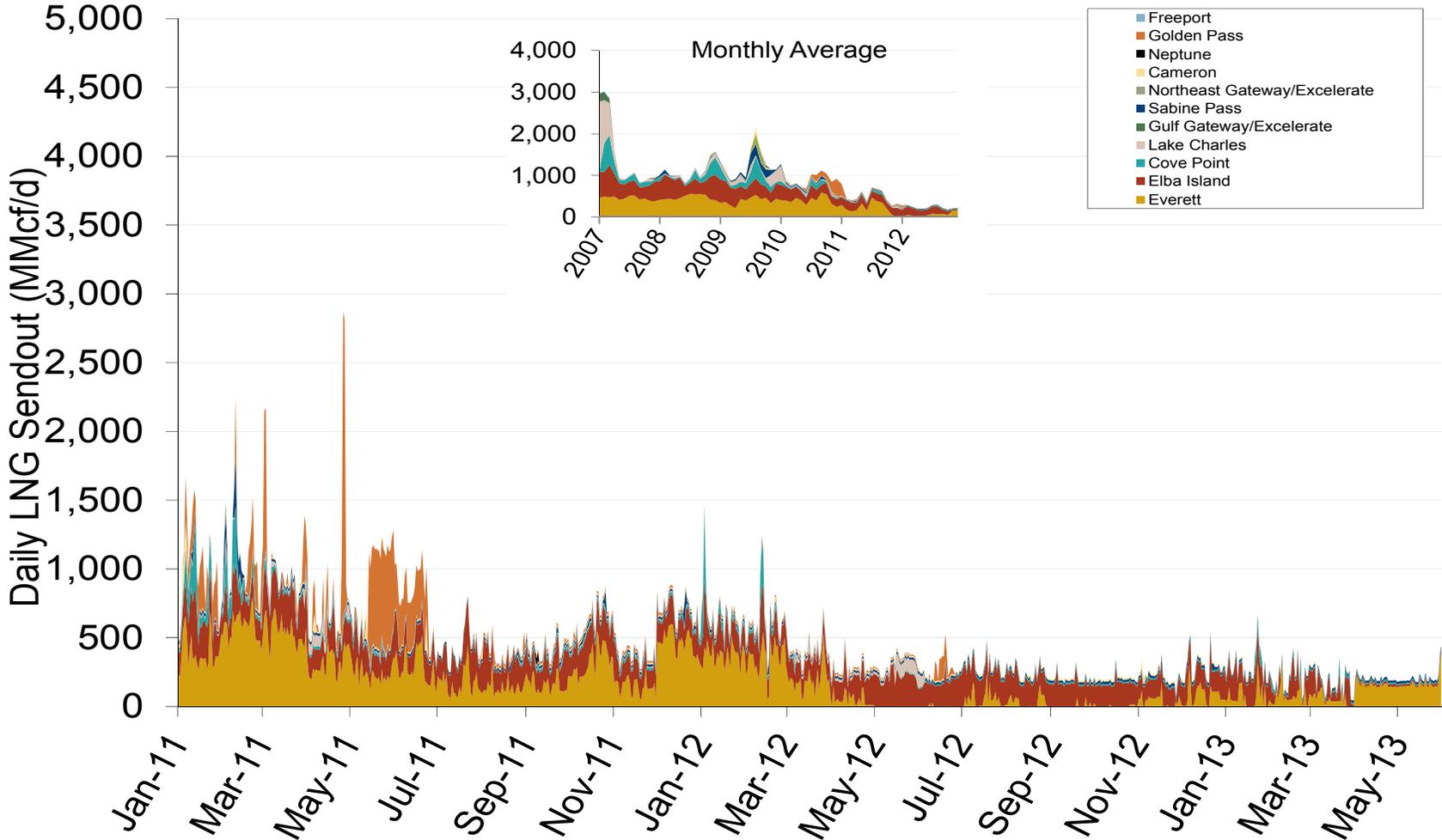
### Monthly Gas Imports at Existing U.S. LNG Facilities



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

Updated: June 11, 2013

# Daily Gas Sendout from Existing U.S. LNG Facilities



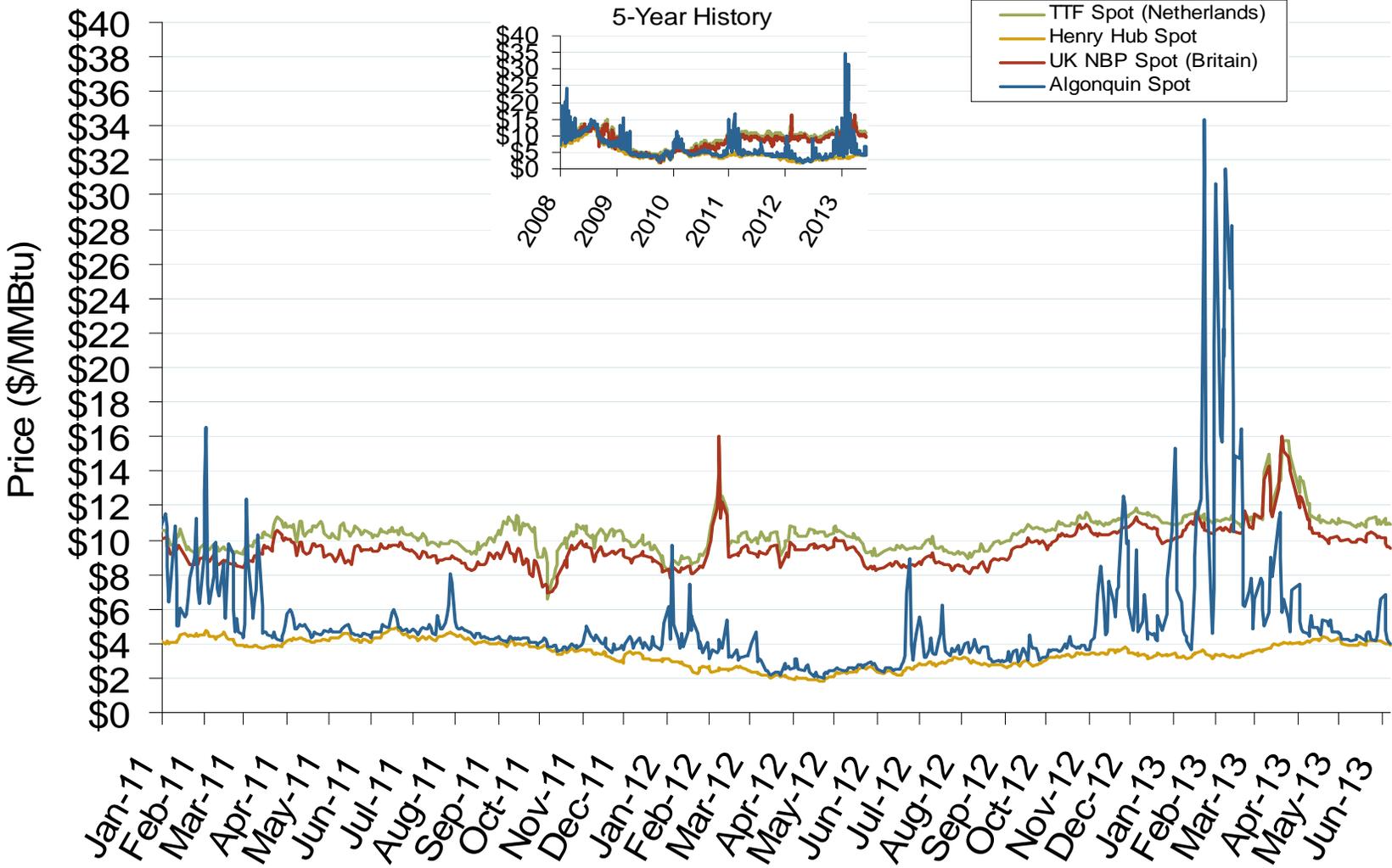
Notes: Everett data includes flows onto the AGT and TGP interstate lines, plus estimates of flows to the Mystic 7 power plant, Keyspan Boston Gas, and LNG trucked out of the terminal. Excludes flows to the Freeport LNG which flows via intrastate pipelines and flows to the Mystic 8 and 9 power plants.

Source: Derived from *Bentek Energy* data

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Updated: June 05, 2013

# Atlantic Basin European and US Spot Natural Gas Prices

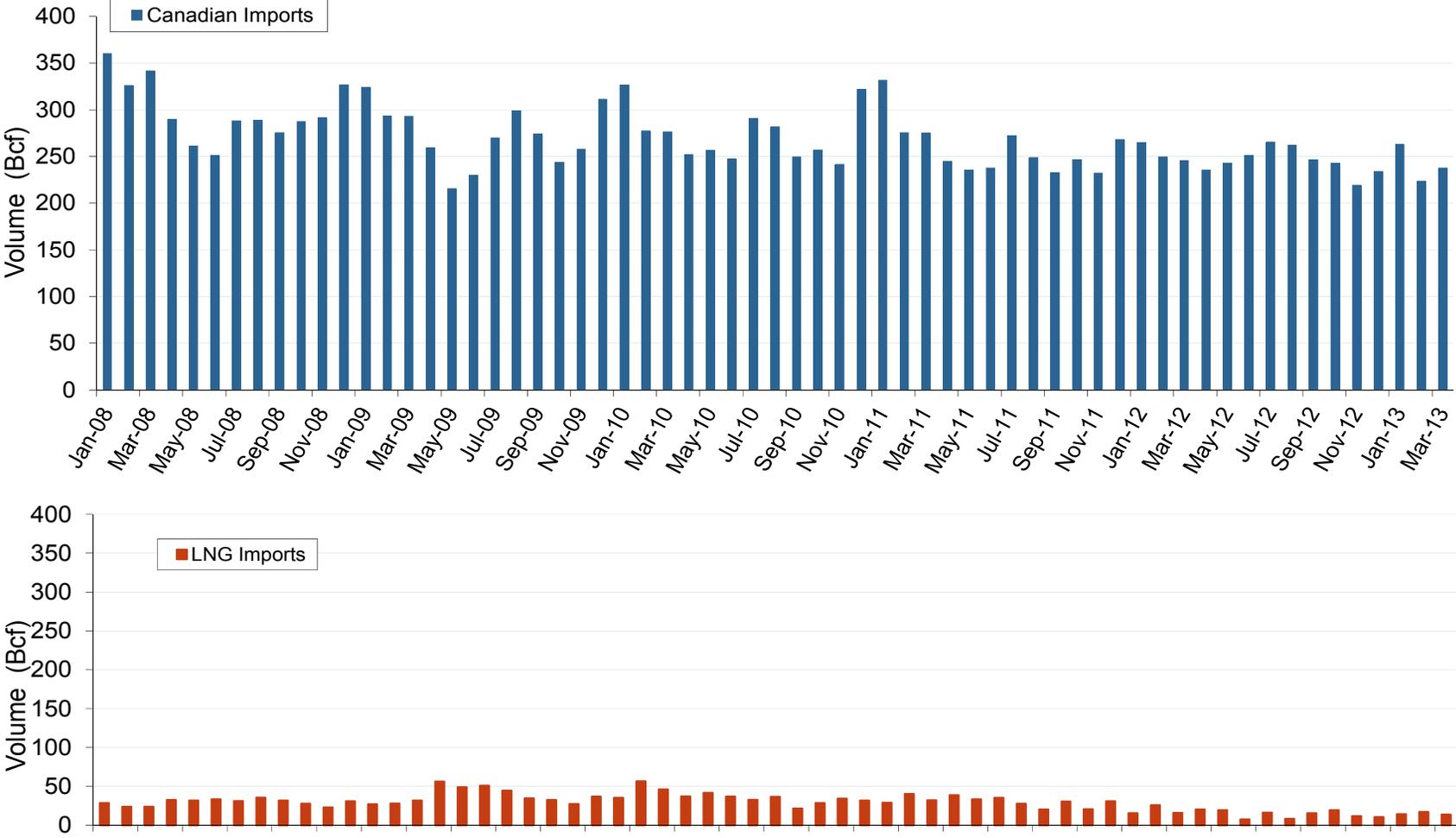


Source: Derived from *Bloomberg* and *ICE* data  
June 2013 Western Snapshot Report

Updated: June 7, 2013

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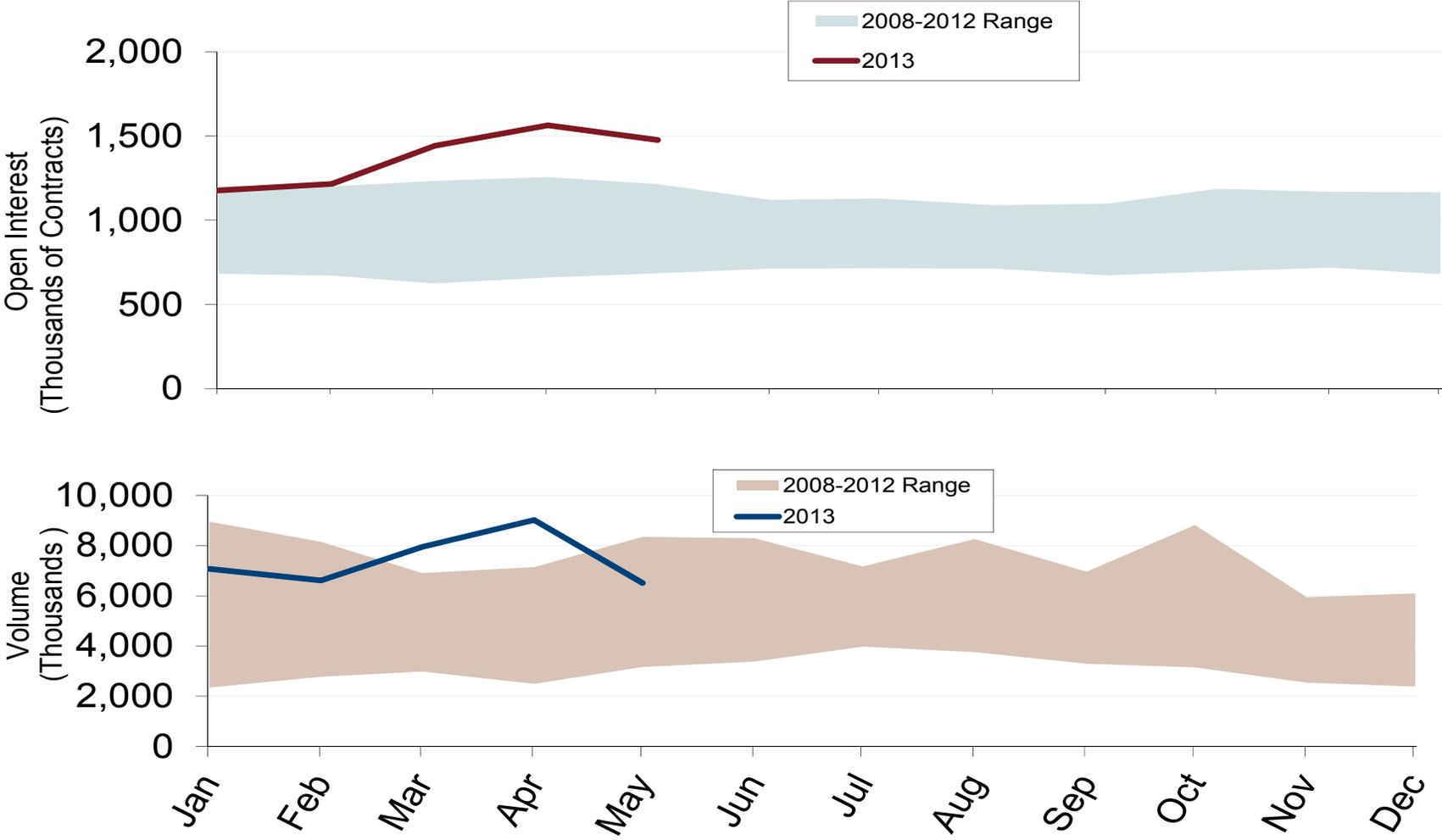
### Canadian and LNG Natural Gas Imports Into the U.S.



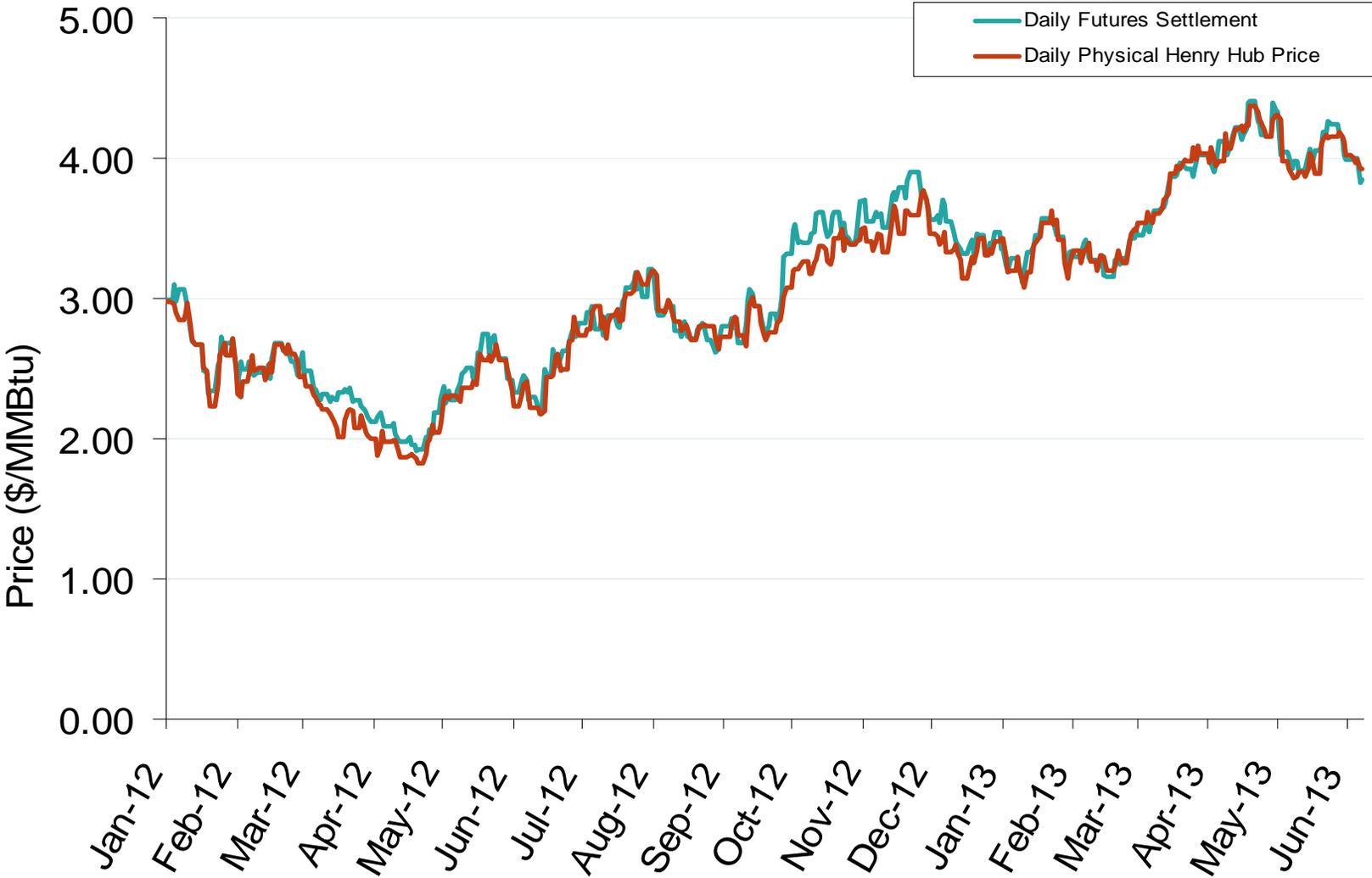
Source: EIA Natural Gas Monthly  
June 2013 Western Snapshot Report

Updated: June 07, 2013

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



## Daily Physical Index Price & Daily Futures Settlement Price

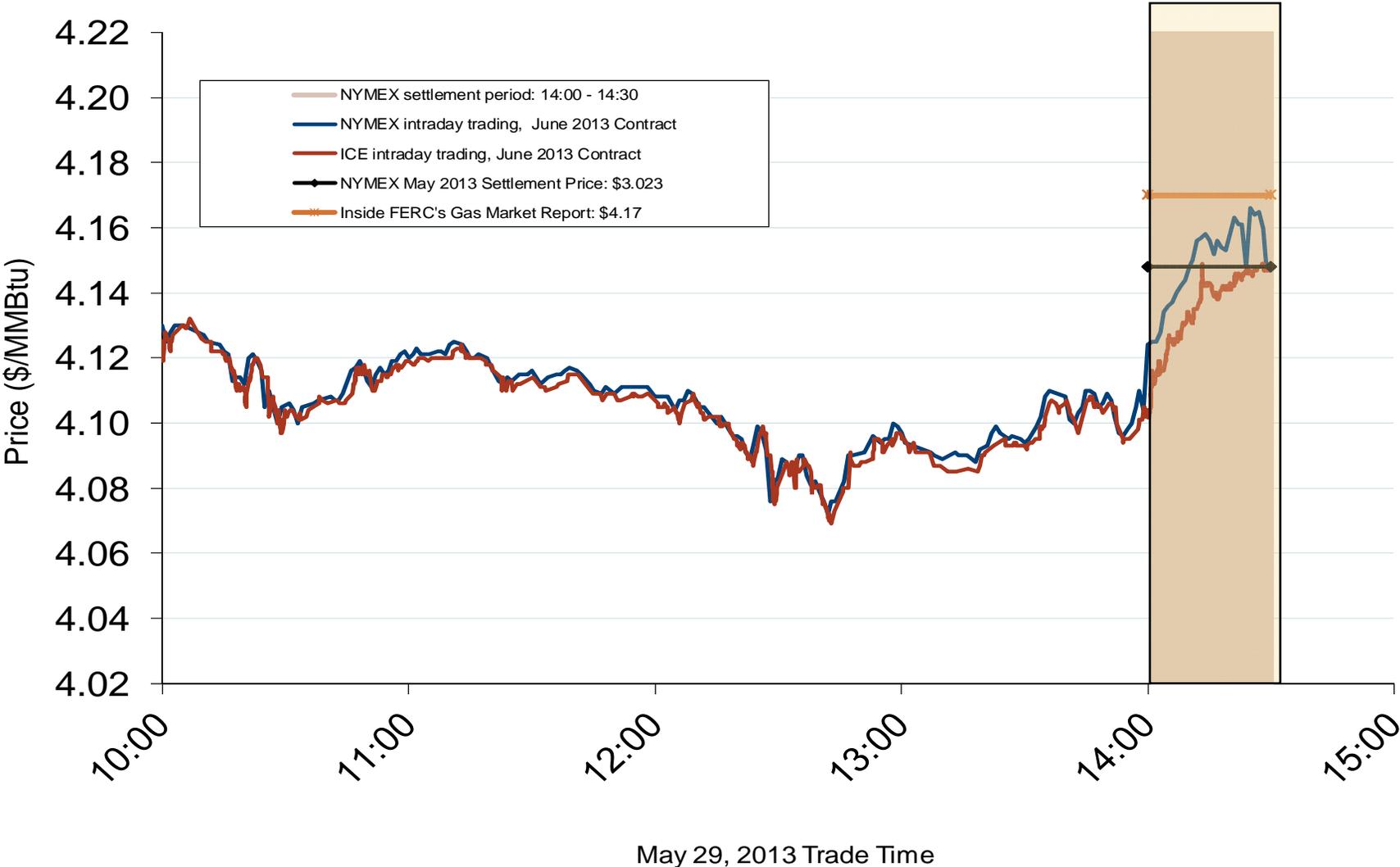


Source: Derived from *Bloomberg* data  
June 2013 Western Snapshot Report

Updated: June 7, 2013

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### Nymex and ICE Contract Final Settlement - June 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

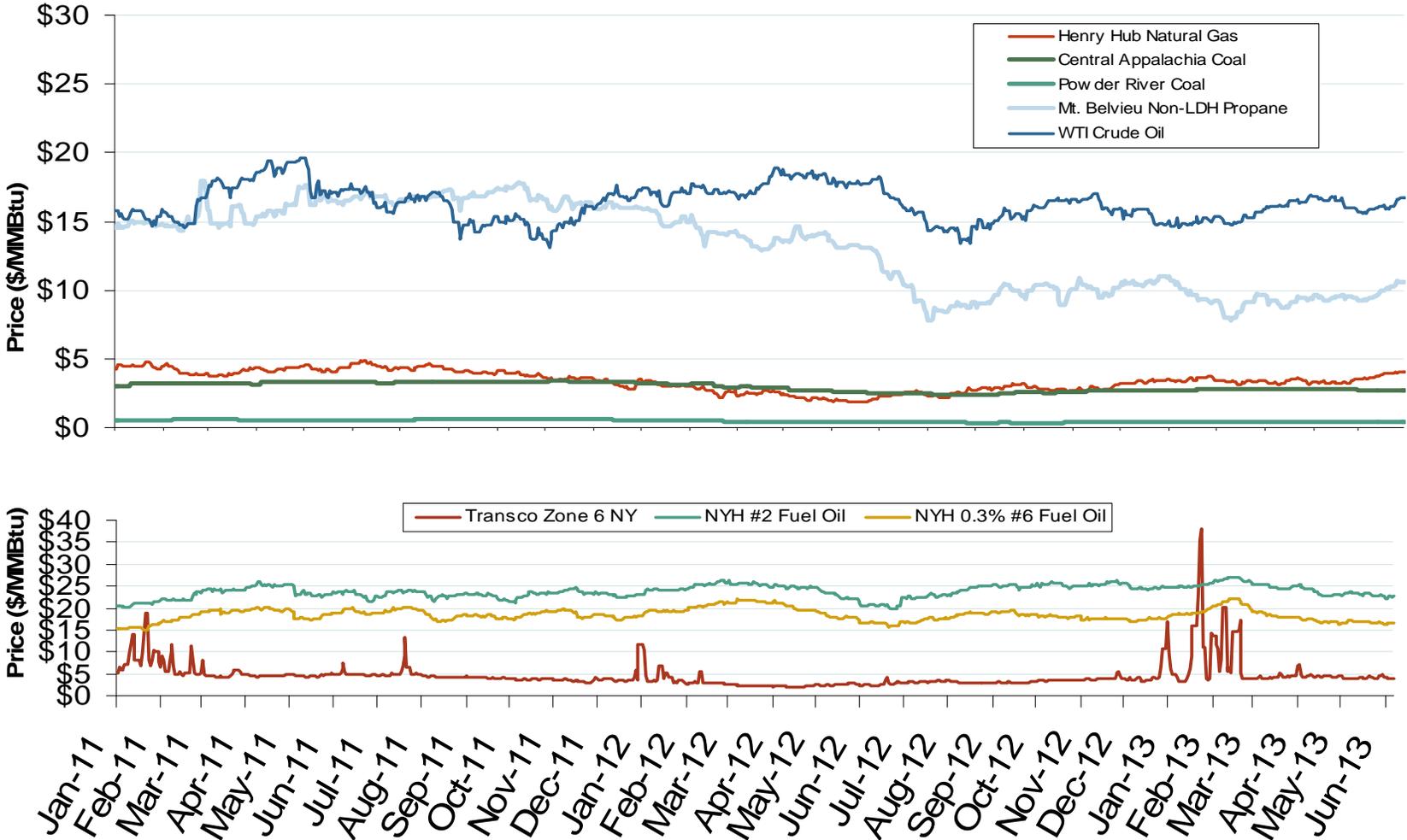
June 2013 Western Snapshot Report

Updated: June 8, 2013

Other Fuels Market: Fossil Fuel Prices

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

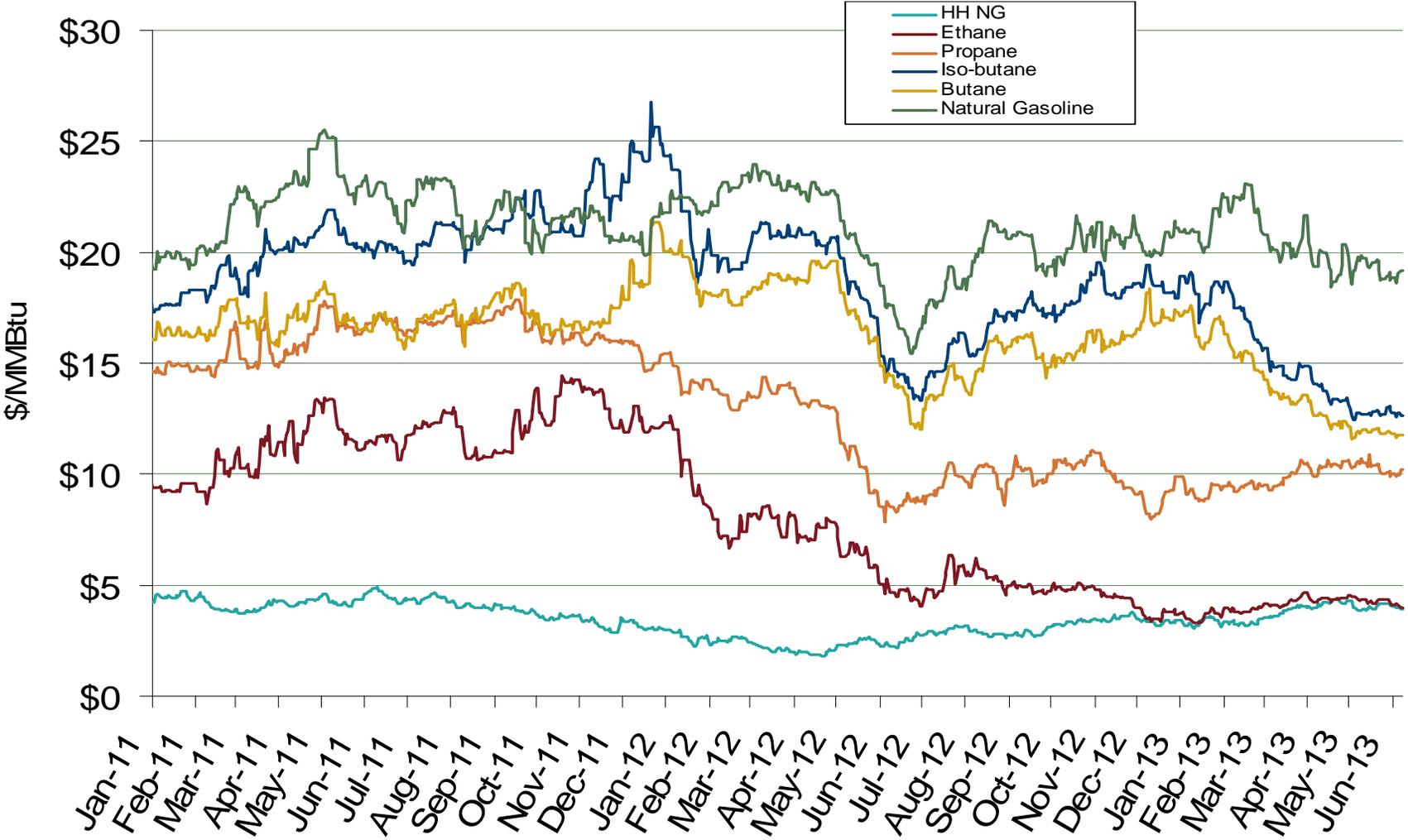


Notes: Coal prices are quoted in \$/ton. Conversion factors to \$/MMBtu are based on contract specifications of 12,000 btus/pound for Central Appalachian coal and 8800 btus/pound for Powder River Basin coal

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

Updated: June 7, 2013

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



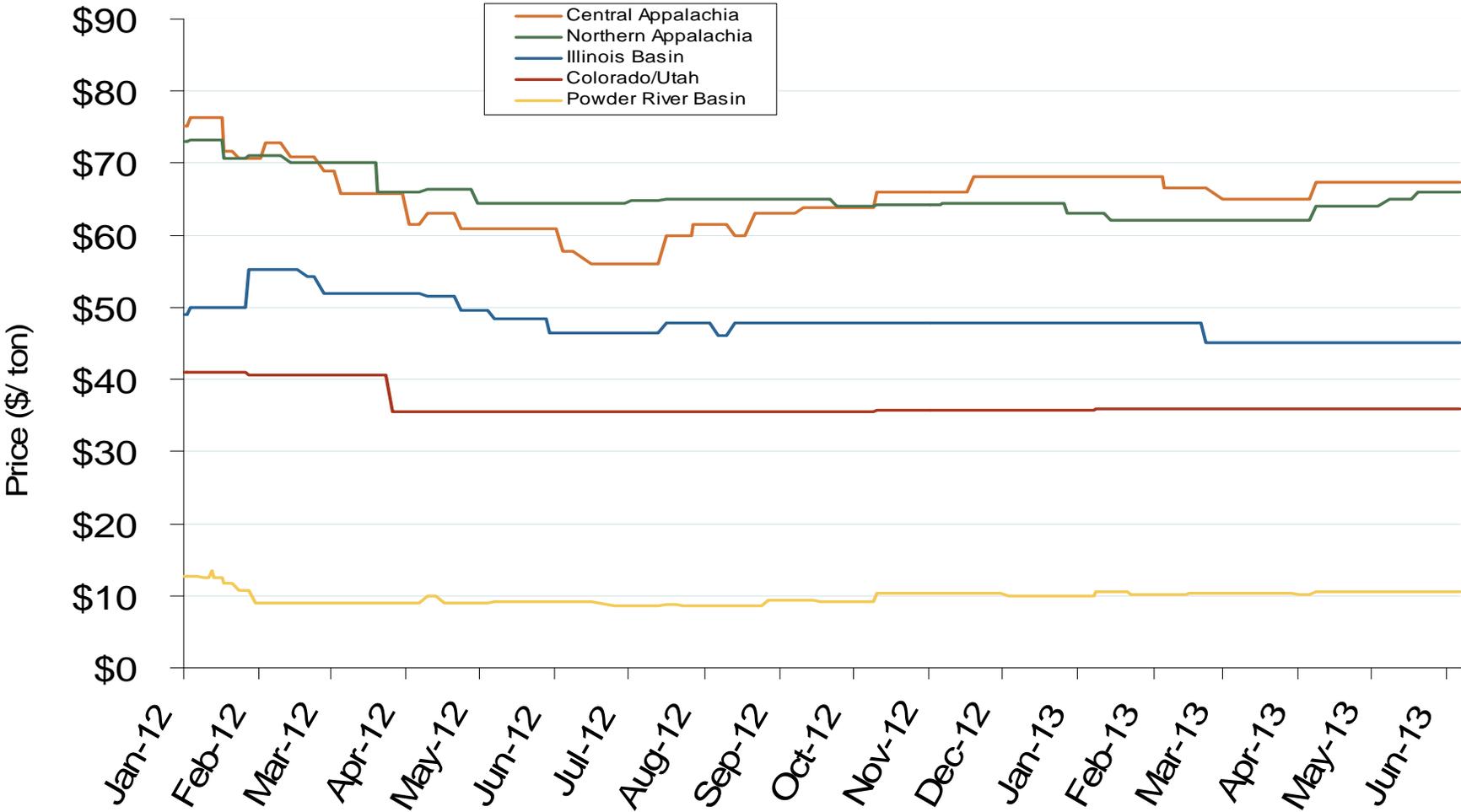
Source: Derived from Bloomberg Data  
June 2013 Western Snapshot Report

Updated: June 7, 2013

National Electric Market Overview: Coal Prices

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# Central Appalachian and Powder River Basin Coal Prices

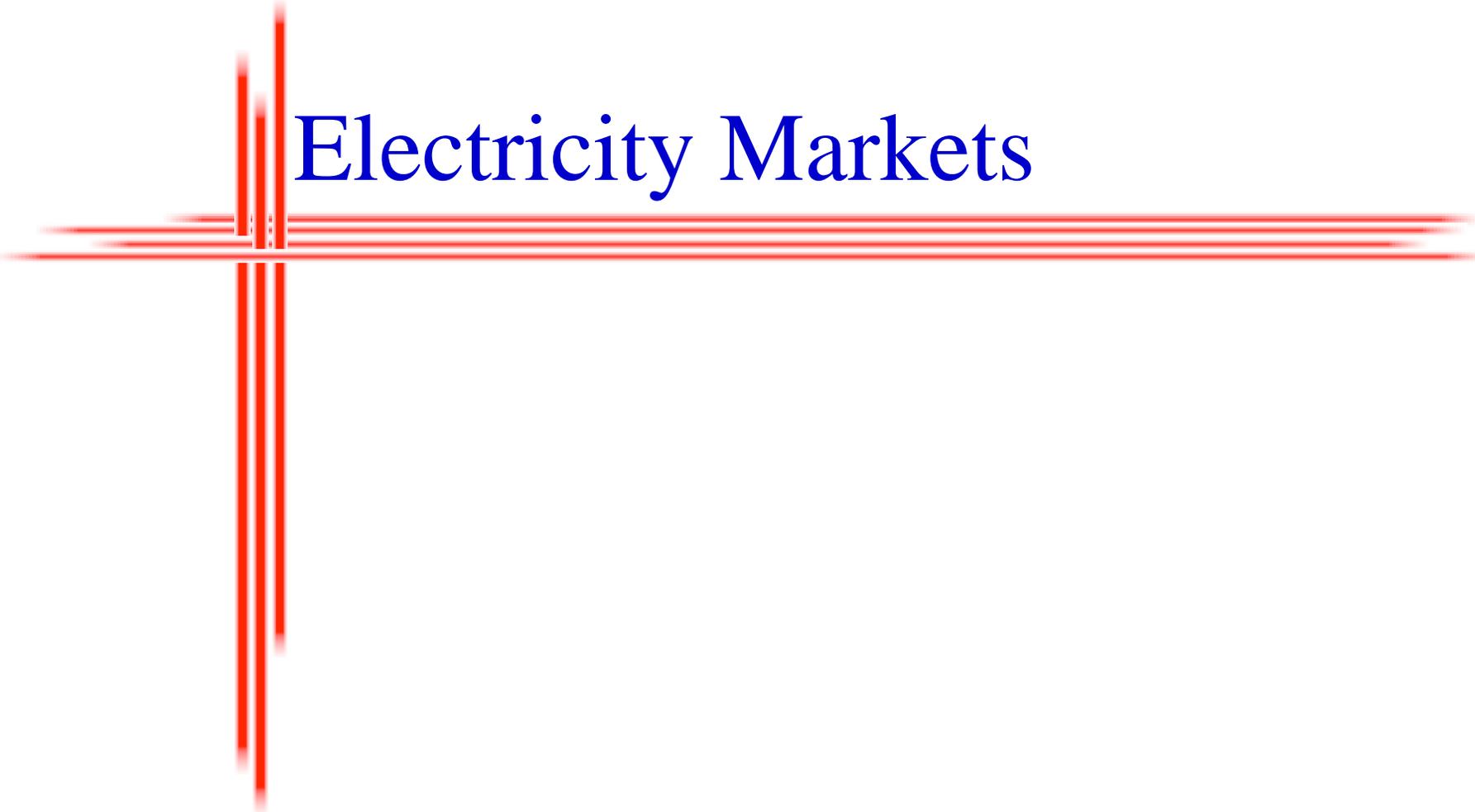


Notes: The Central Appalachian (CAPP) coal is priced at Big Sandy. All others are mine mouth prices. Prices do not include transportation costs to a plant, as those can vary widely by contract specifications. Prices exclude incremental cost of emissions allowances

Source: Derived from Bloomberg data

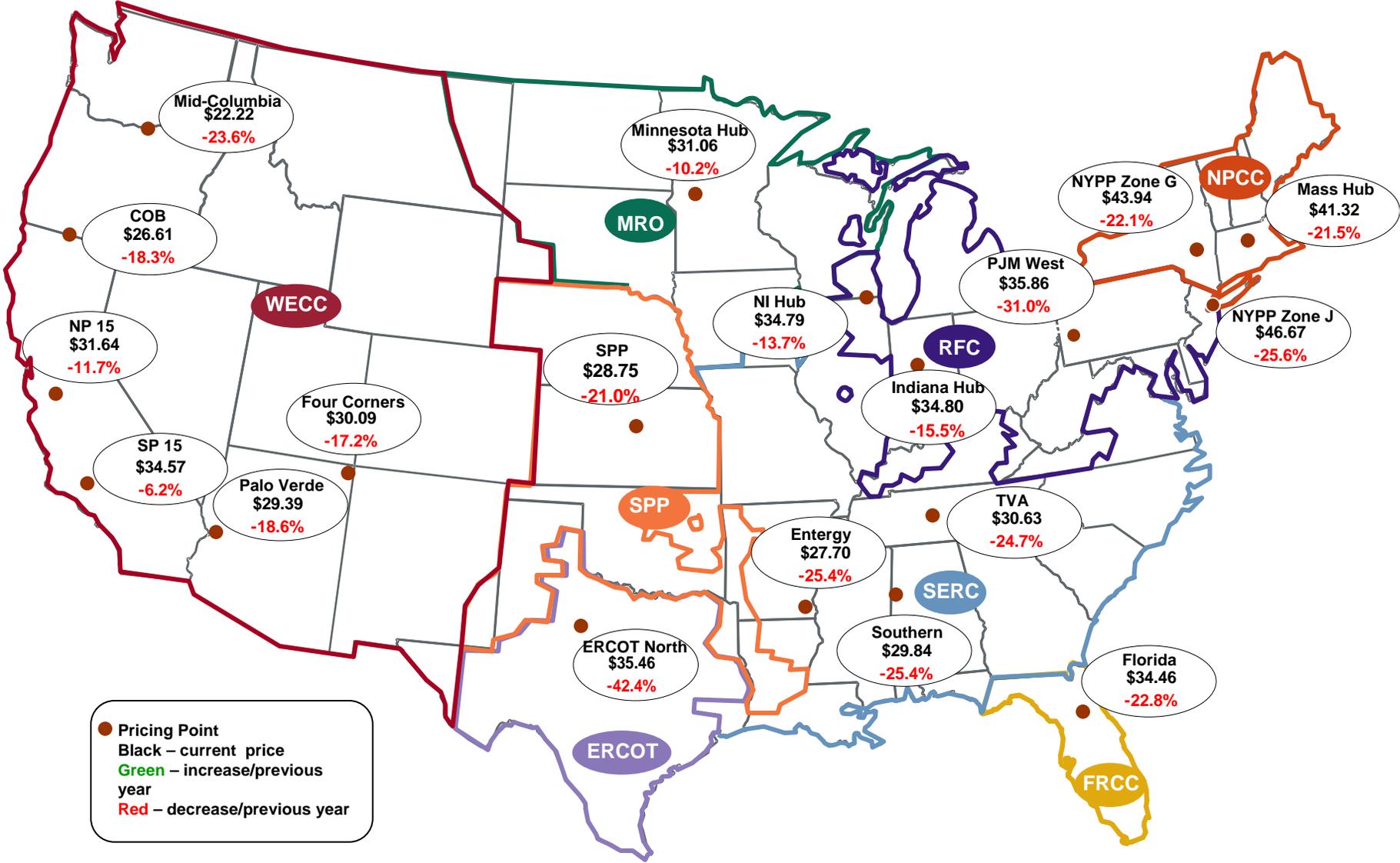
June 2013 Western Snapshot Report

Updated: June 7, 2013



# Electricity Markets

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



Source: Derived from *Platts* data.  
June 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%

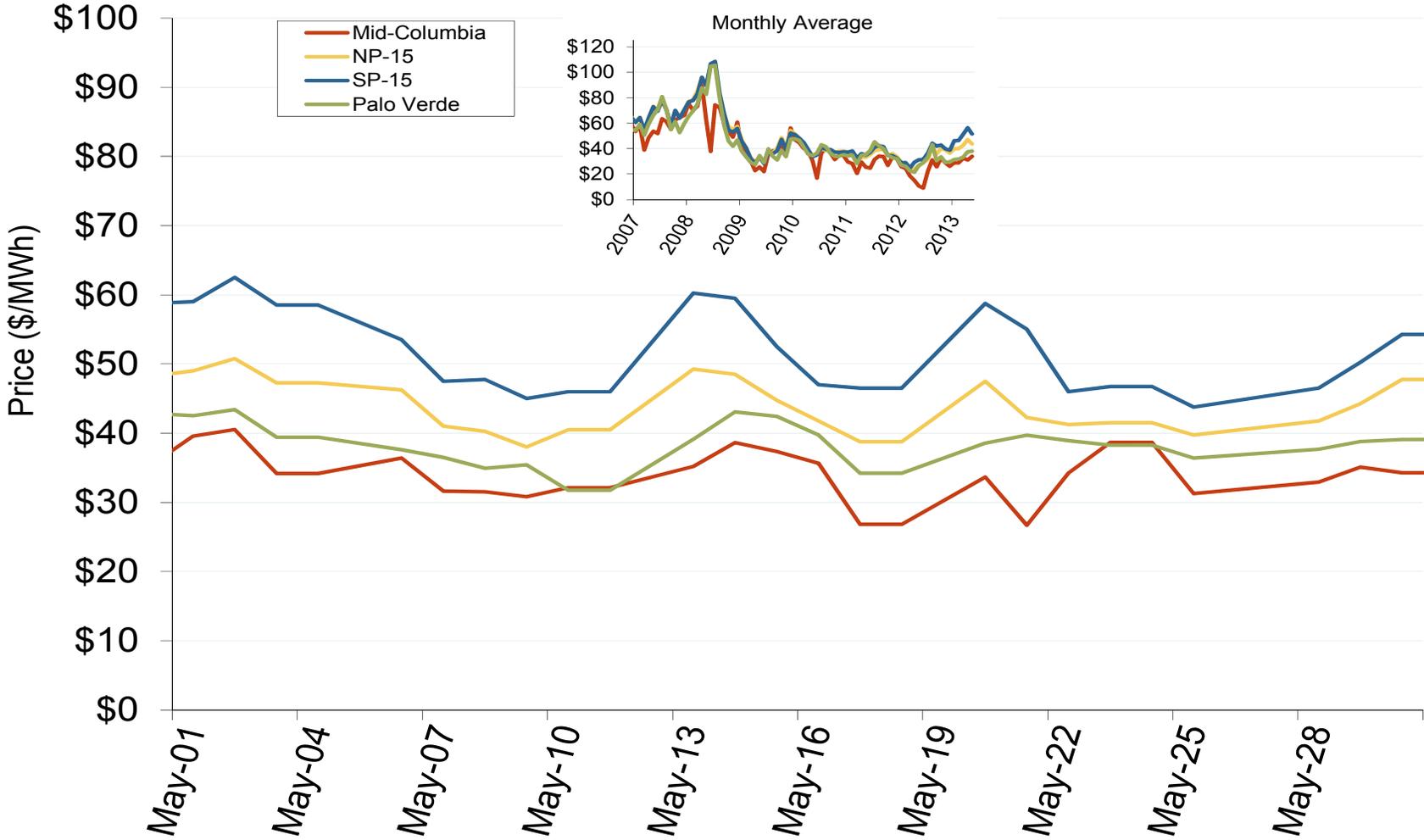
Note: Effective January 1, 2012, Platts replaced the Cinergy Hub with the Indiana Hub.

June 2013 Western Snapshot Report

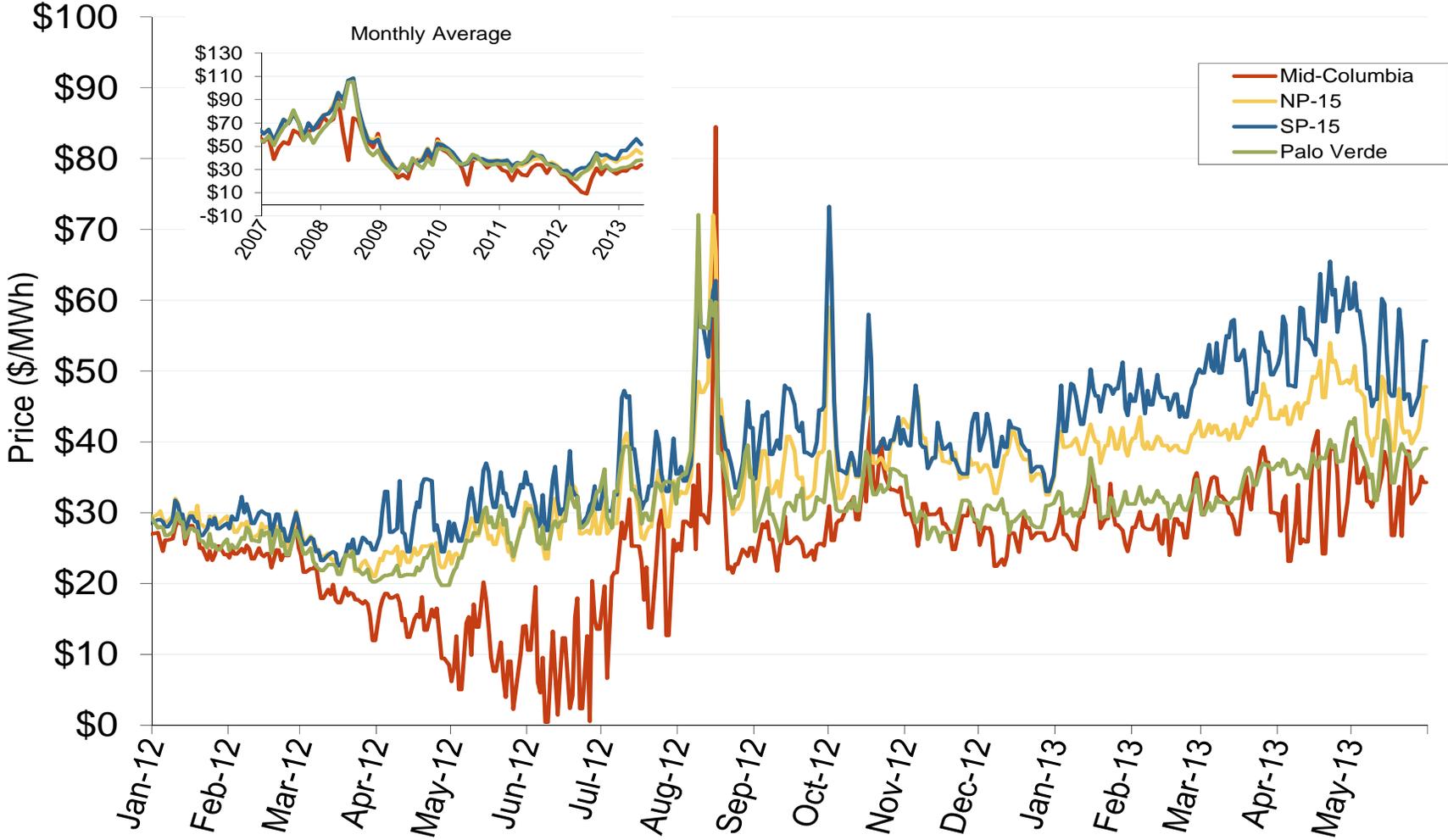
## California Annual Average Bilateral Prices

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



# Western Daily Index Day-Ahead On-Peak Prices



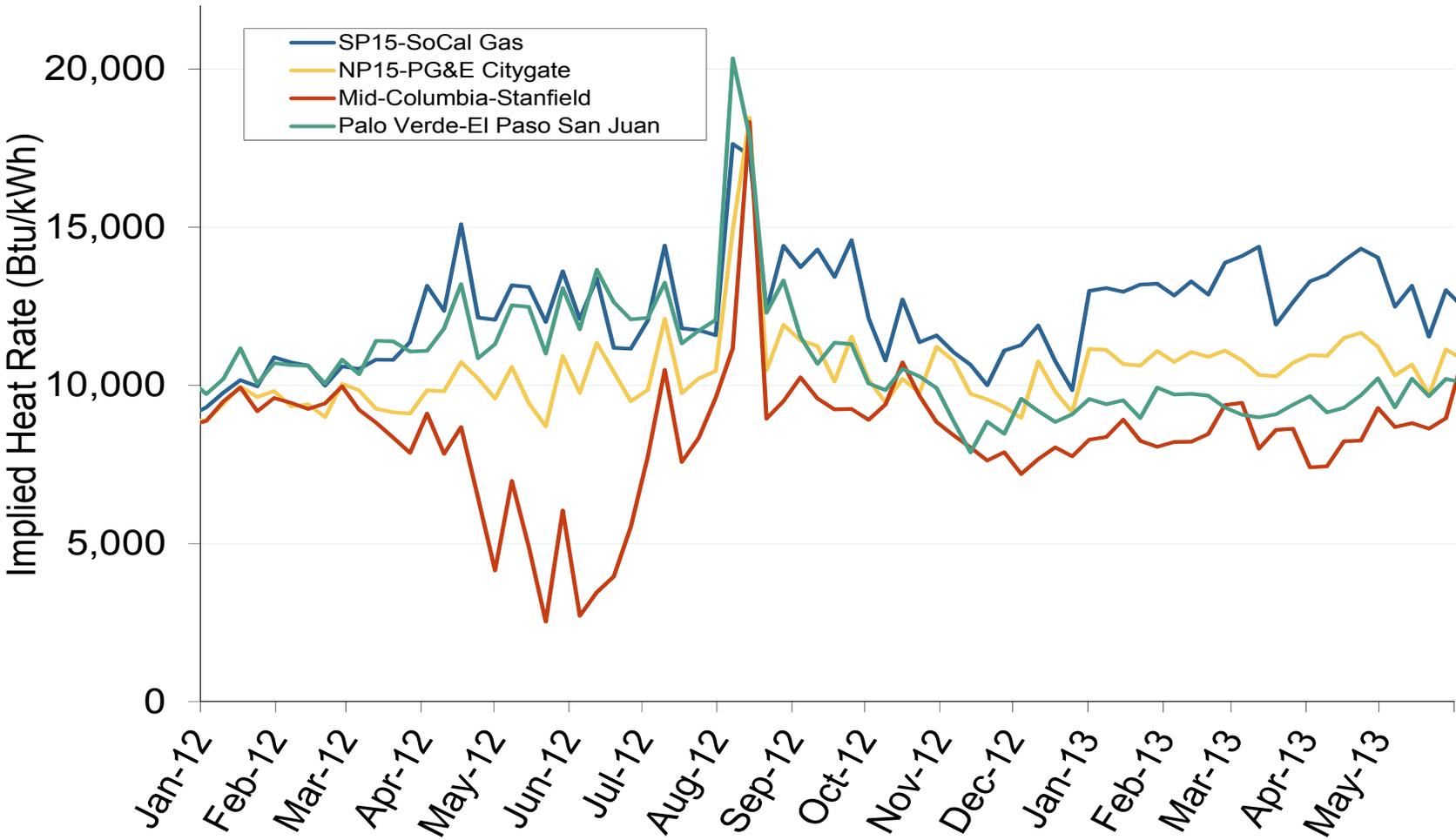
Source: Derived from Platts data  
June 2013 Western Snapshot Report

Updated: June 05, 2013

Southwest Electric Market: Western Implied Heat Rates

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

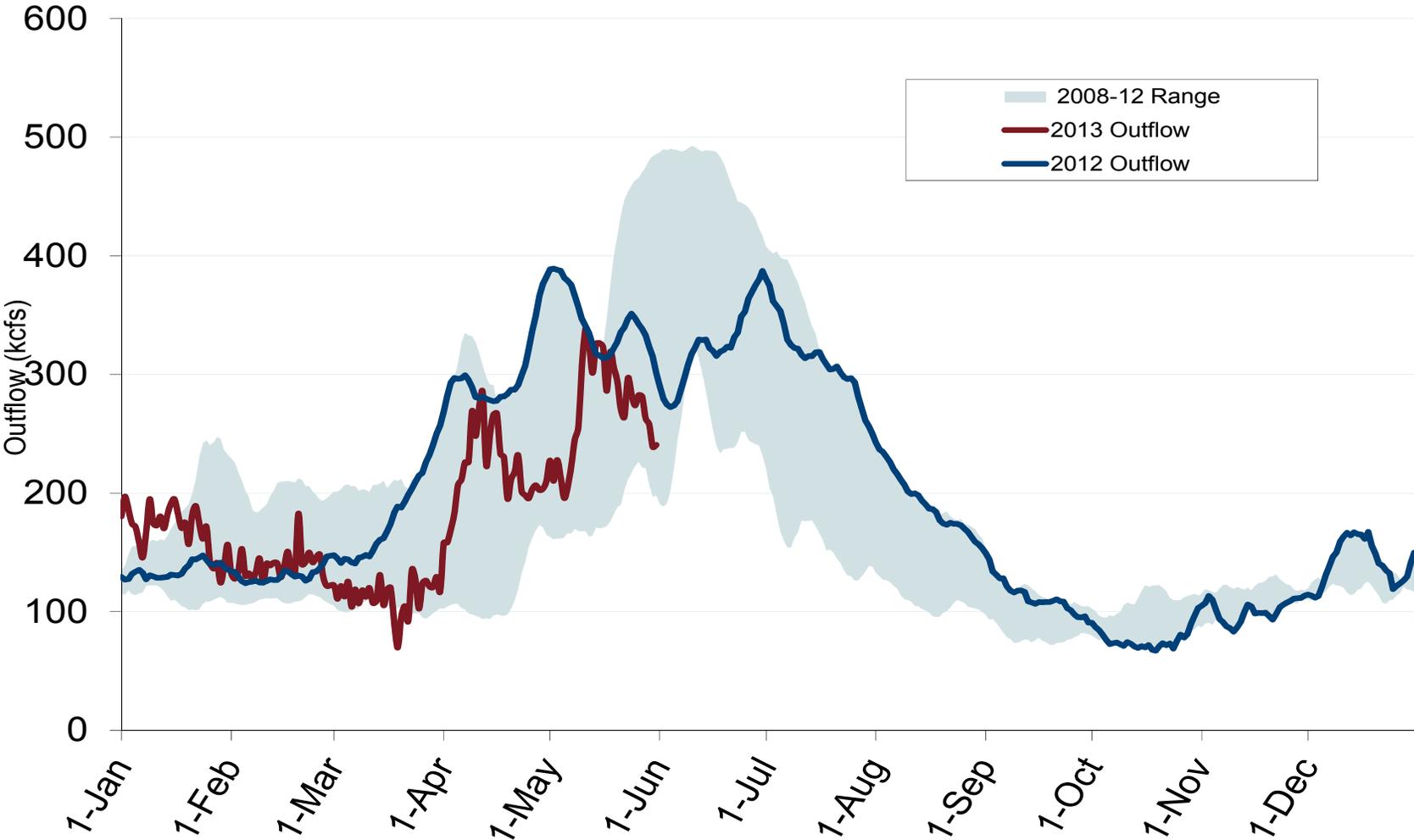
**Implied Heat Rates at Western Trading Points - Weekly Avgs.**



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

Updated: June 06, 2013

### Stream Flows at the Dalles Dam



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

## 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%

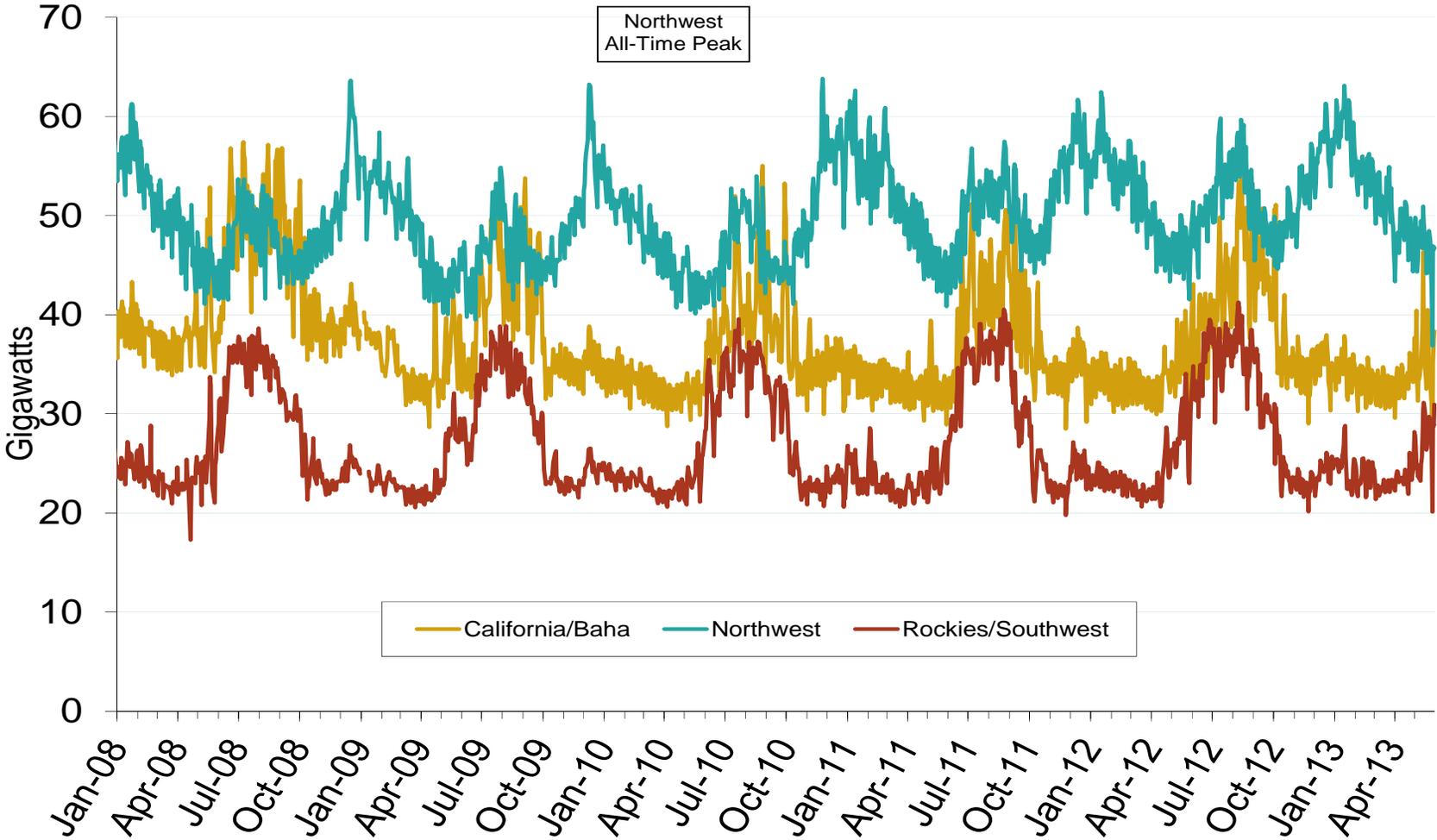
### Notes:

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

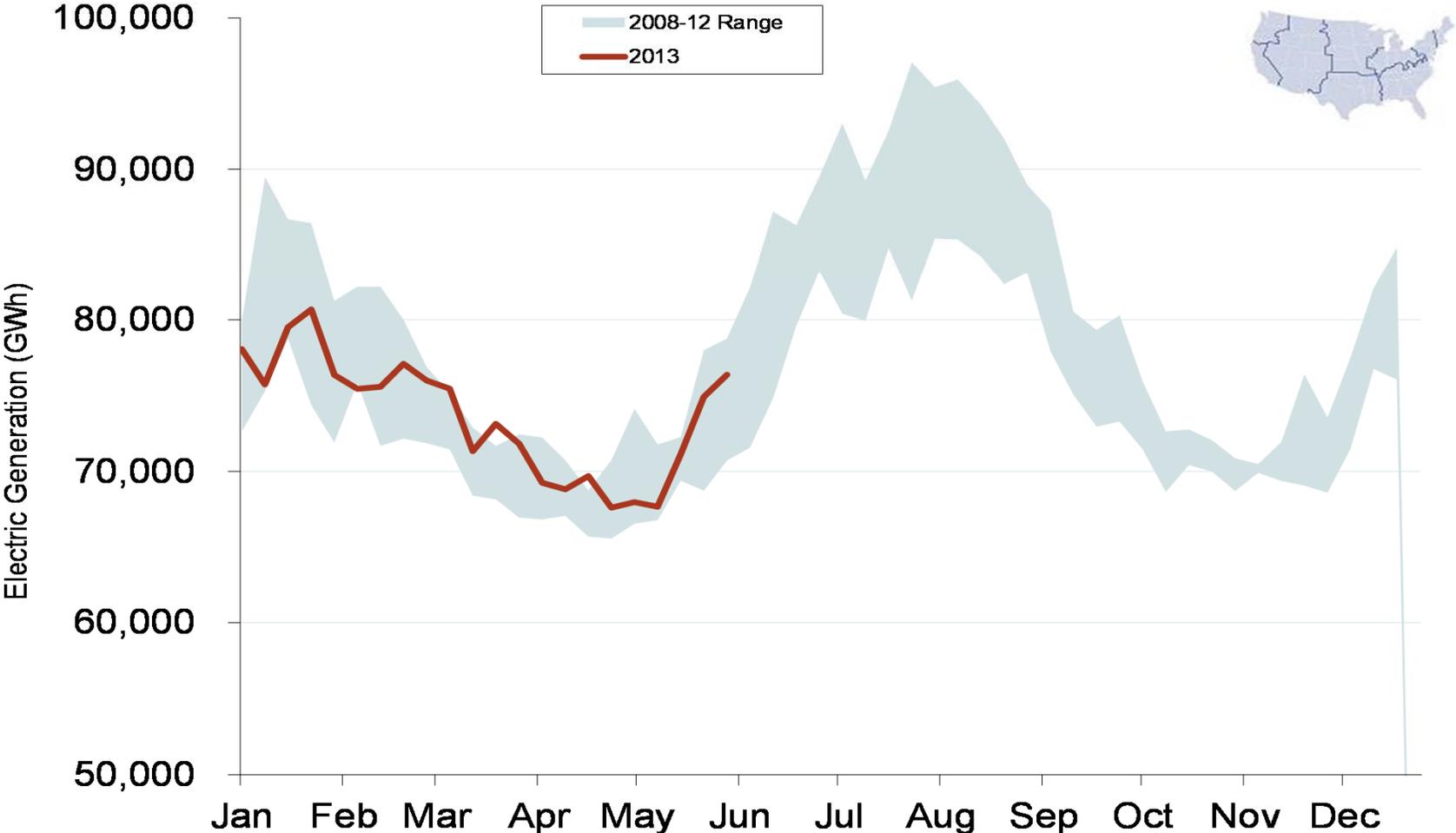
### Western Daily Actual Peak Demand



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>  
June 2013 Western Snapshot Report

Updated: June 11, 2013

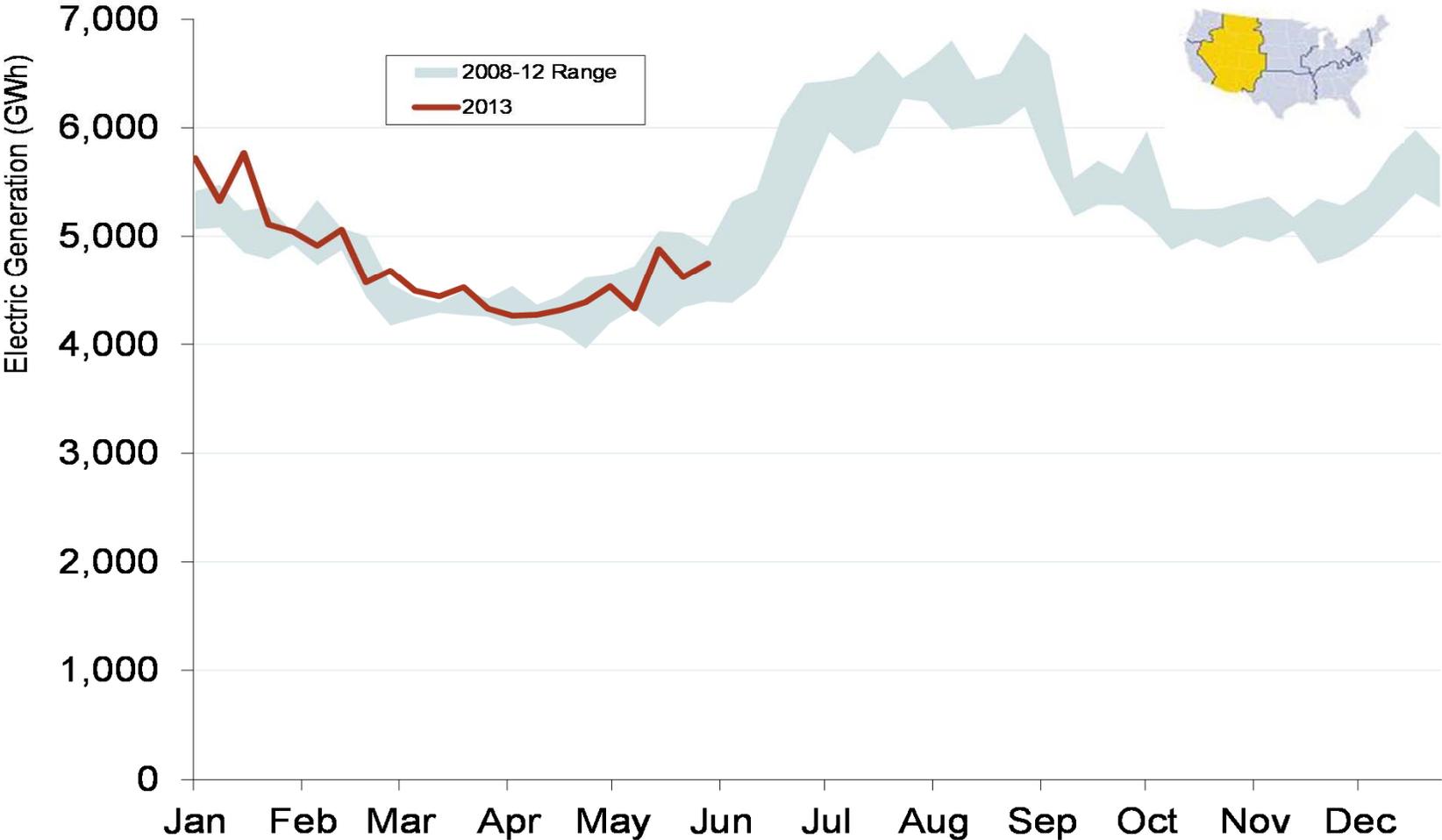
# Weekly U.S. Electric Generation Output



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

Updated: June 06, 2013

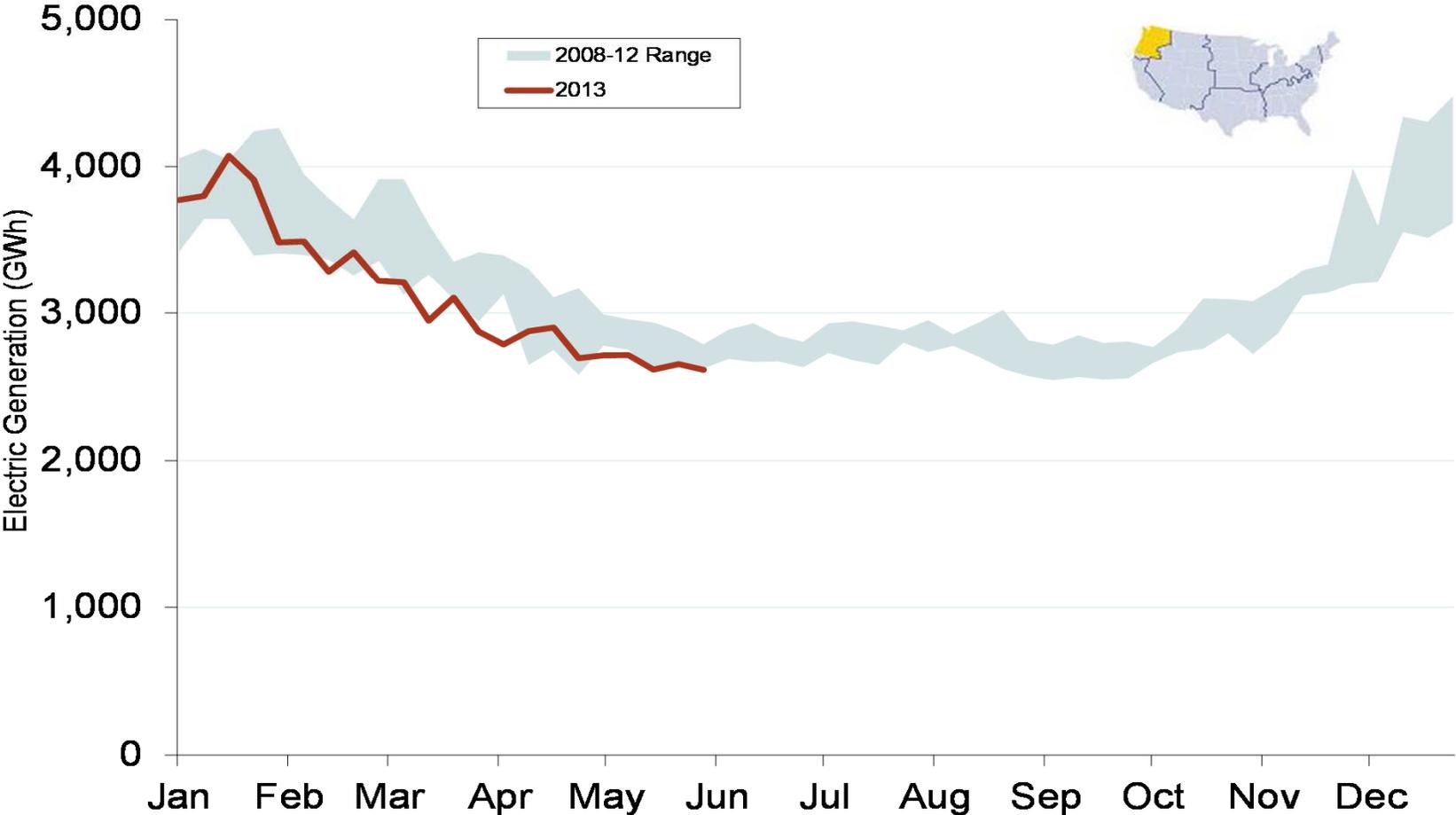
### Weekly Generation Output - Rocky Mountains



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

Updated: June 06, 2013

# Weekly Generation Output - Pacific Northwest



# Weekly Generation Output - California

