

# **OE ENERGY MARKET SNAPSHOT**

## **Western States Version – August 2012 Data**

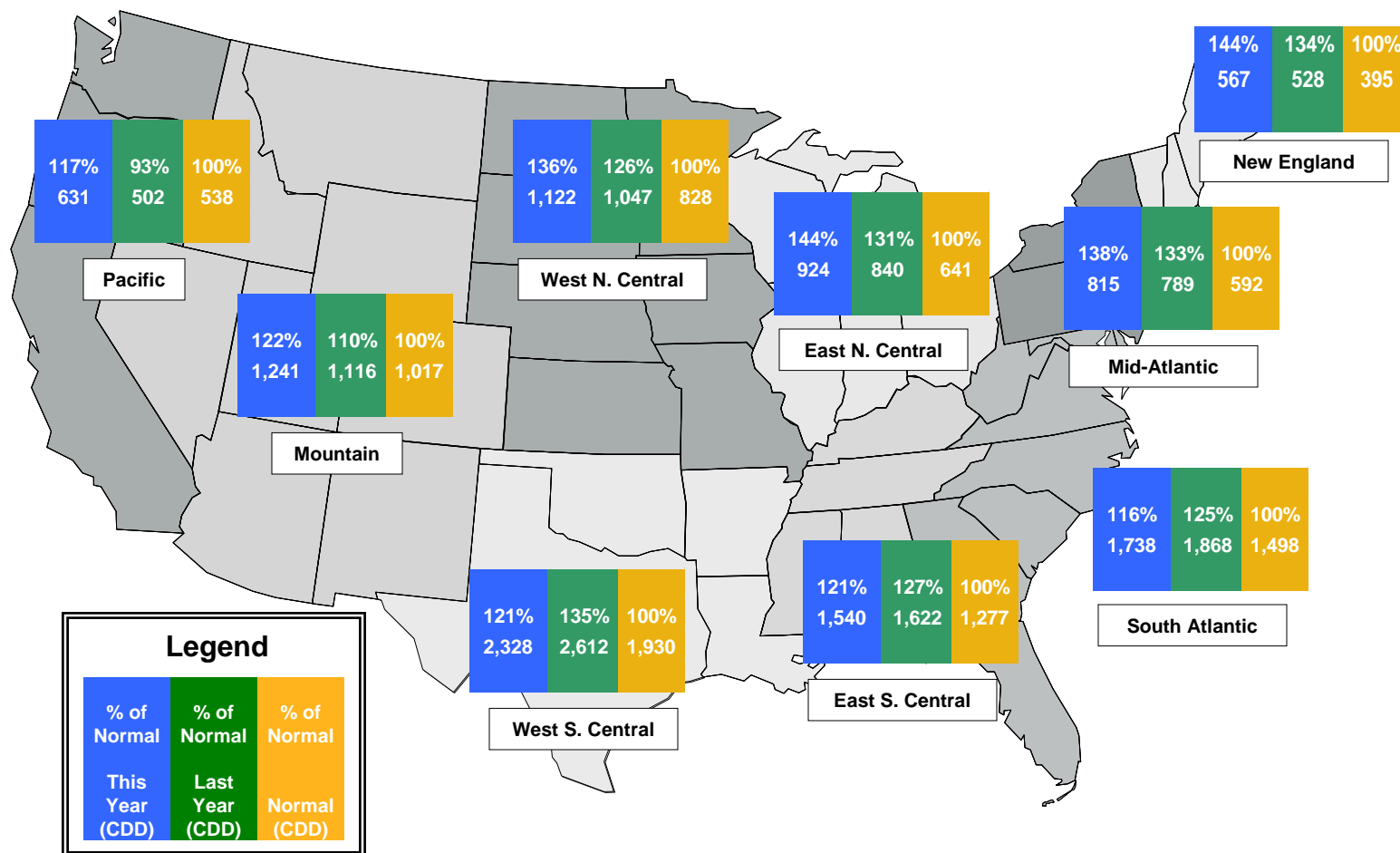
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Office of Enforcement  
Federal Energy Regulatory Commission  
September 2012



# Weather

## Regional Cooling Degree Days – January to August 2012



Source: Derived from NOAA data. Normal is based on a 30-year average of cooling degree day data.  
September 2012 Western Snapshot Report

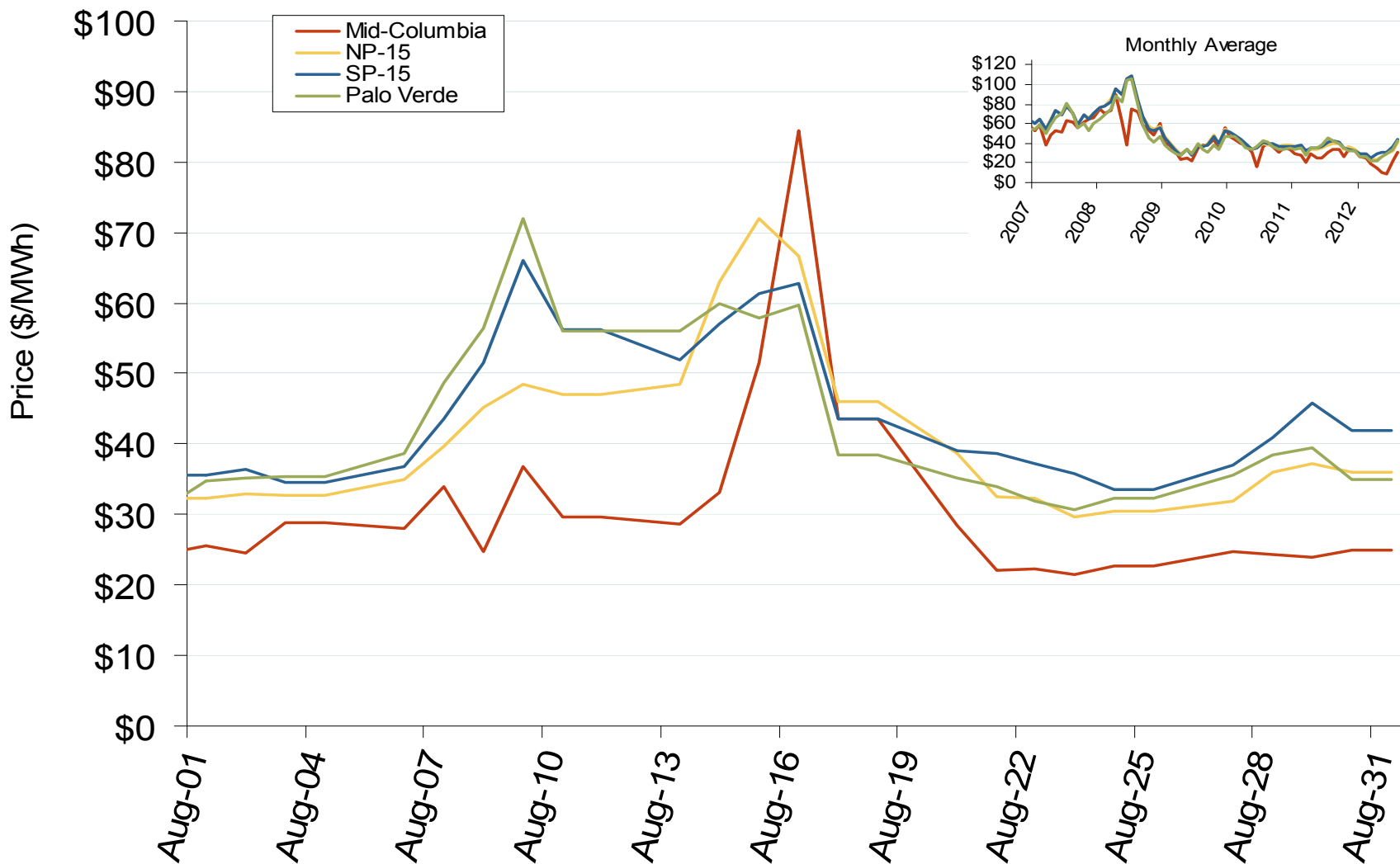


# Electricity Markets

California Electric Market: Last Month's Western Index Prices

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

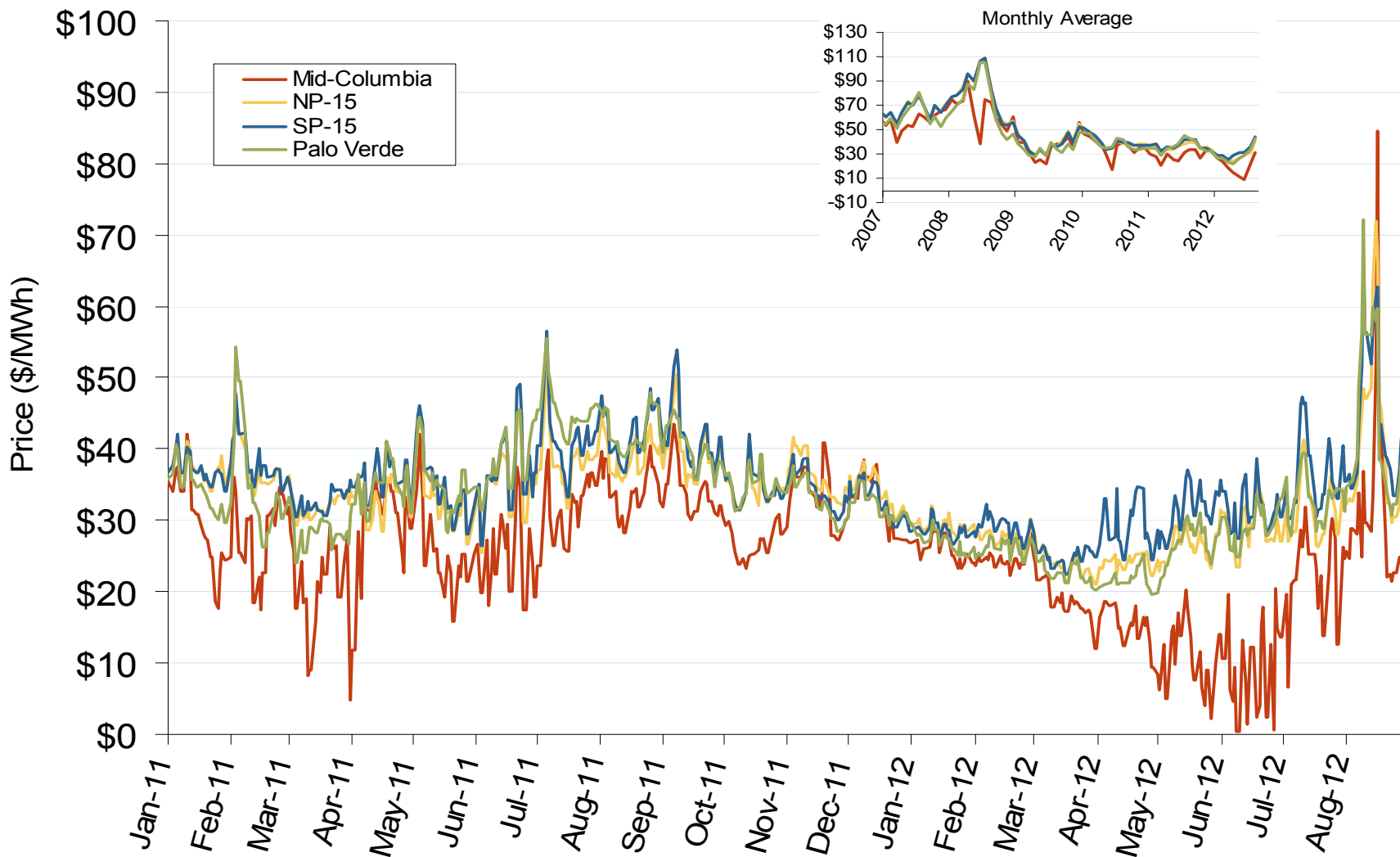
## Western Daily Index Day-Ahead On-Peak Prices



California Electric Market: Western Index Prices

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

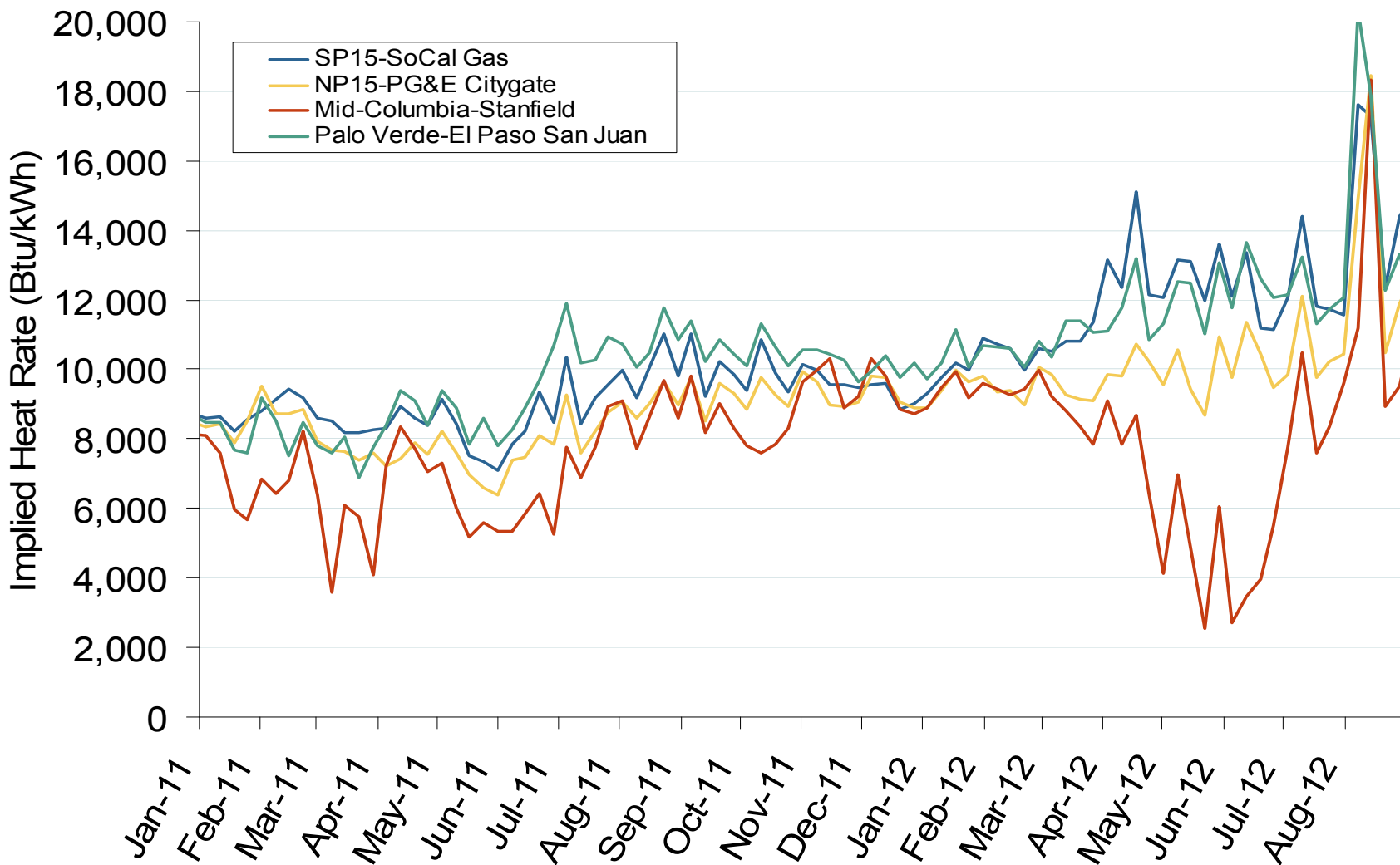
## Western Daily Index Day-Ahead On-Peak Prices



Southwest Electric Market: Western Implied Heat Rates

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

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

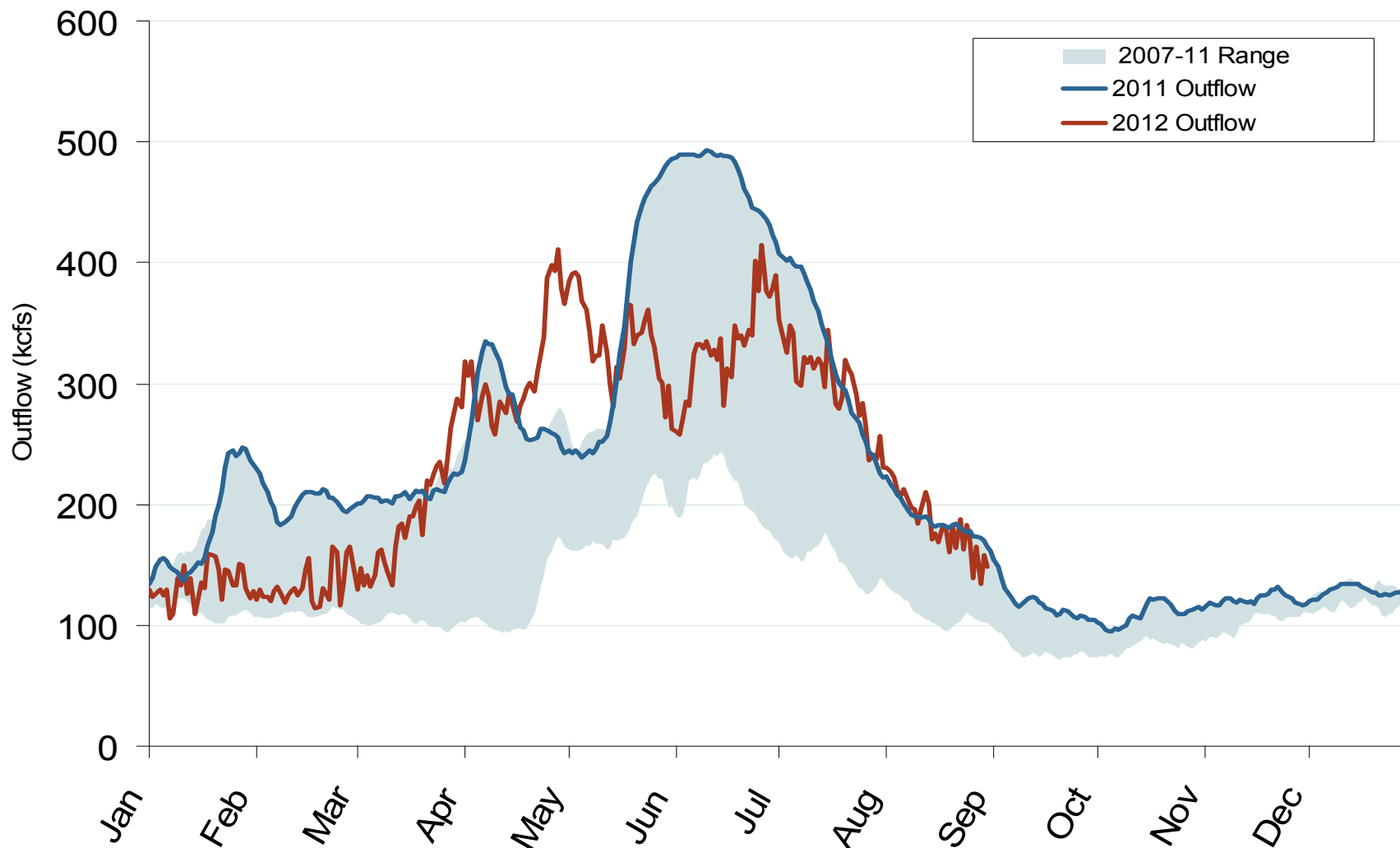


Source: Derived from Platts on-peak electric and natural gas price data  
September 2012 Western Snapshot Report

Northwest Electric Market: The Dalles Dam Stream Flow

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

### Stream Flows at the Dalles Dam



Notes: Trend lines are 7-day moving averages

Source: Derived from USACE data

September 2012 Western Snapshot Report

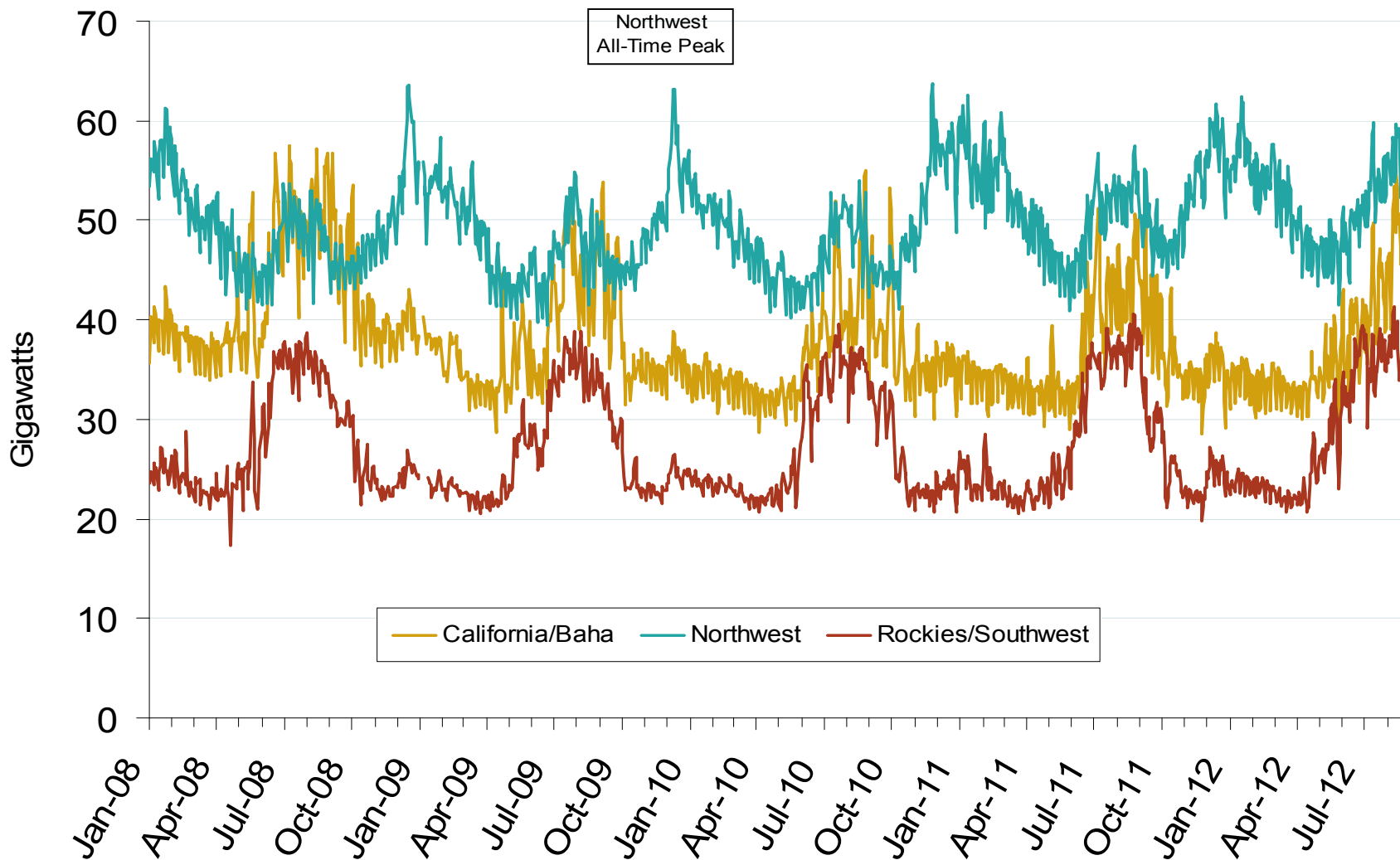
Updated: September 06, 2012



California Electric Market: Daily Peak Demand

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

## Western Daily Actual Peak Demand

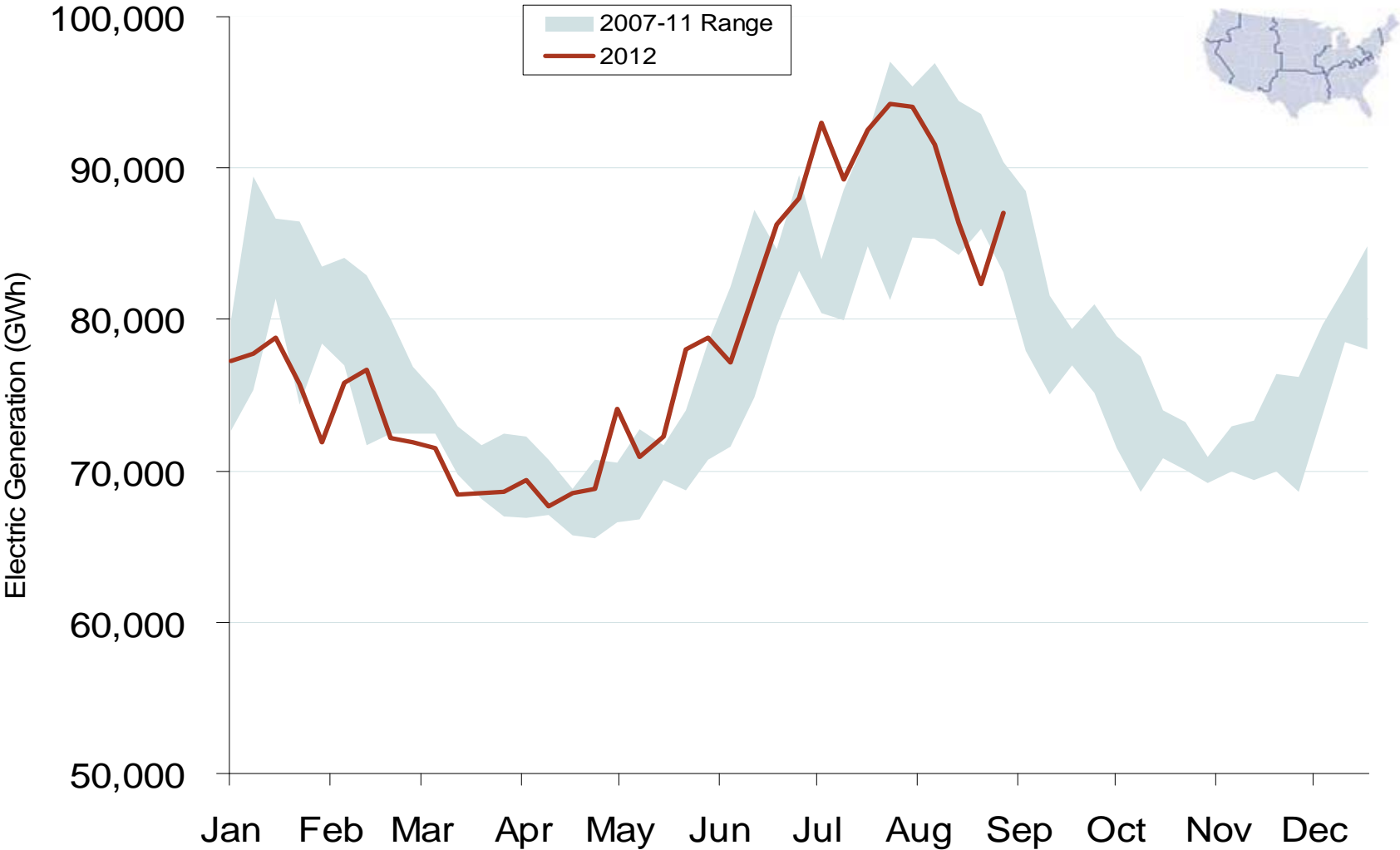


Notes: Data prior to 9/14/2010 does not include weekends and holidays. Some data for 12/31/2008 – 1/9/2009 are not available from WECC

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

Updated: September 06, 2012

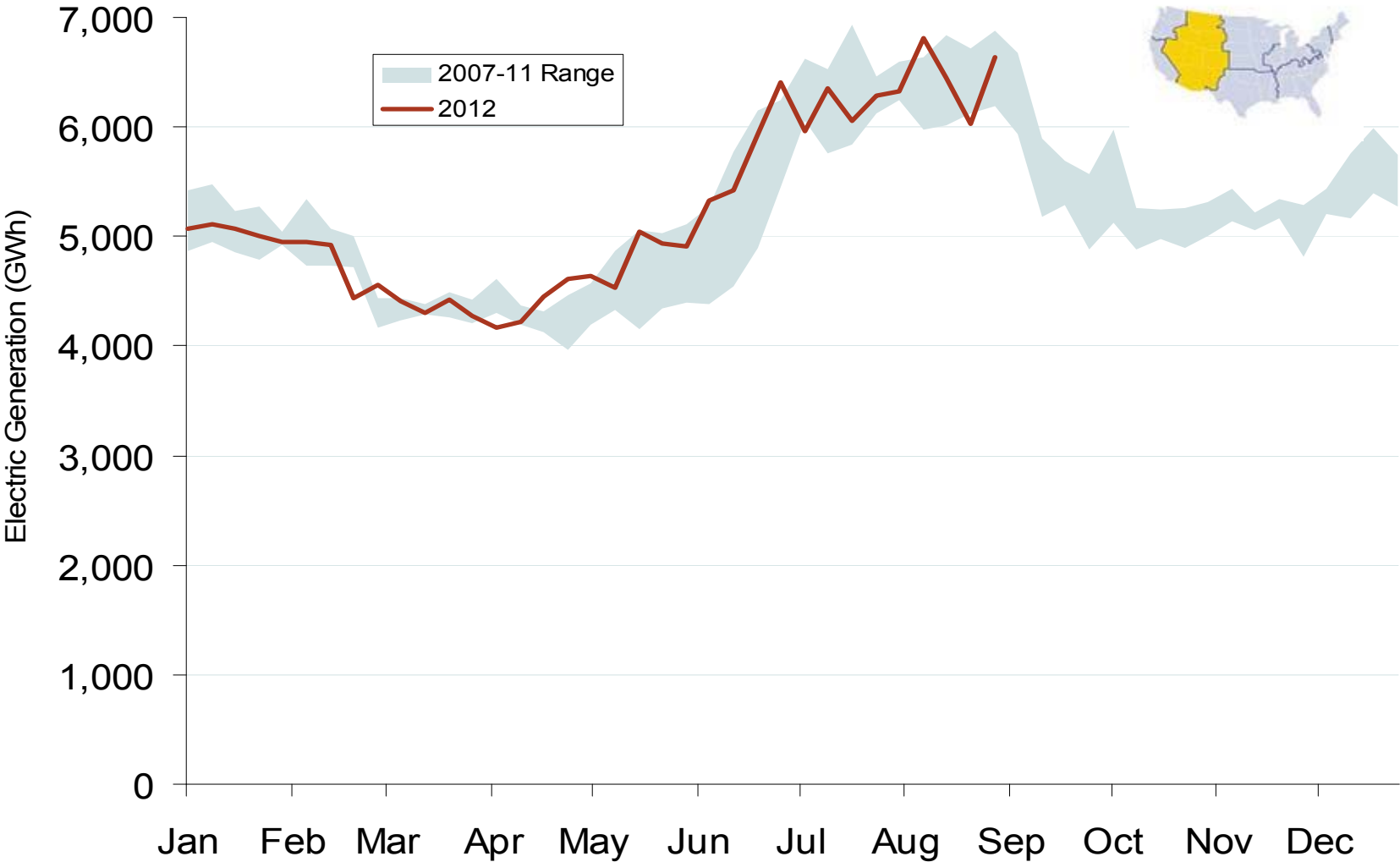
# Weekly U.S. Electric Generation Output



Source: Derived from *EEI* data  
September 2012 Western Snapshot Report

Updated: September 06, 2012

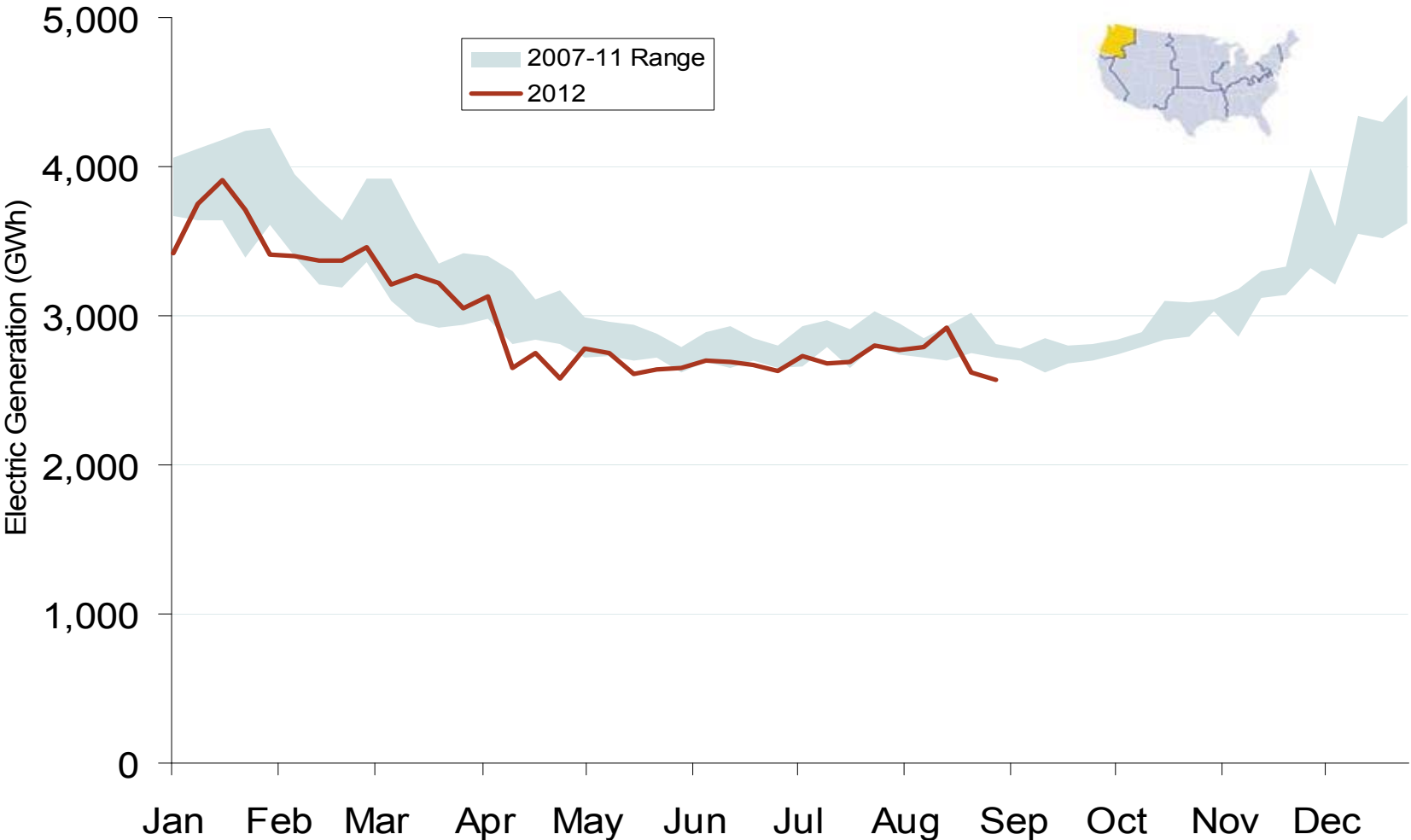
# Weekly Generation Output - Rocky Mountains



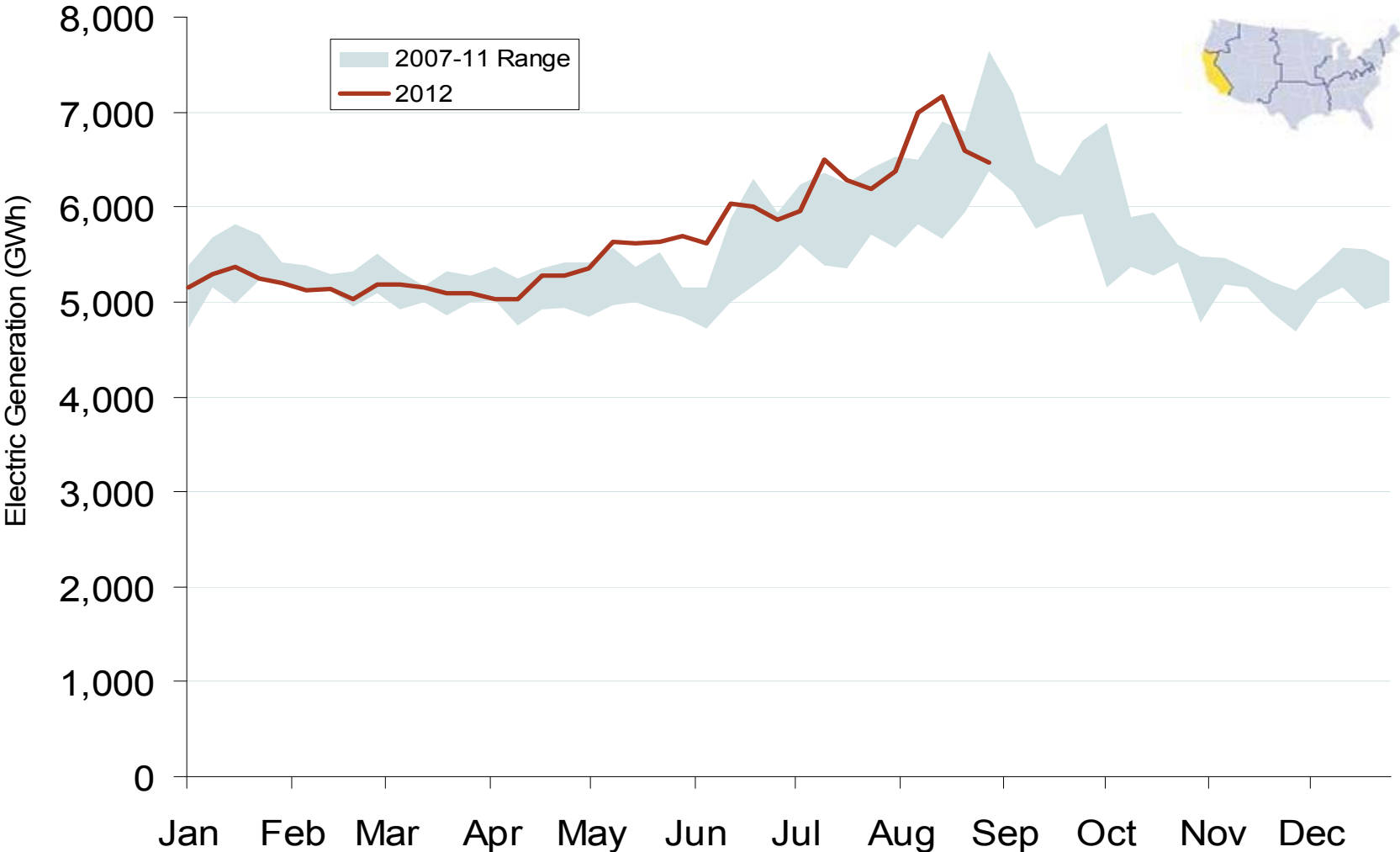
Source: Derived from *EEI* data  
September 2012 Western Snapshot Report

Updated: September 06, 2012

# Weekly Generation Output - Pacific Northwest



# Weekly Generation Output - California



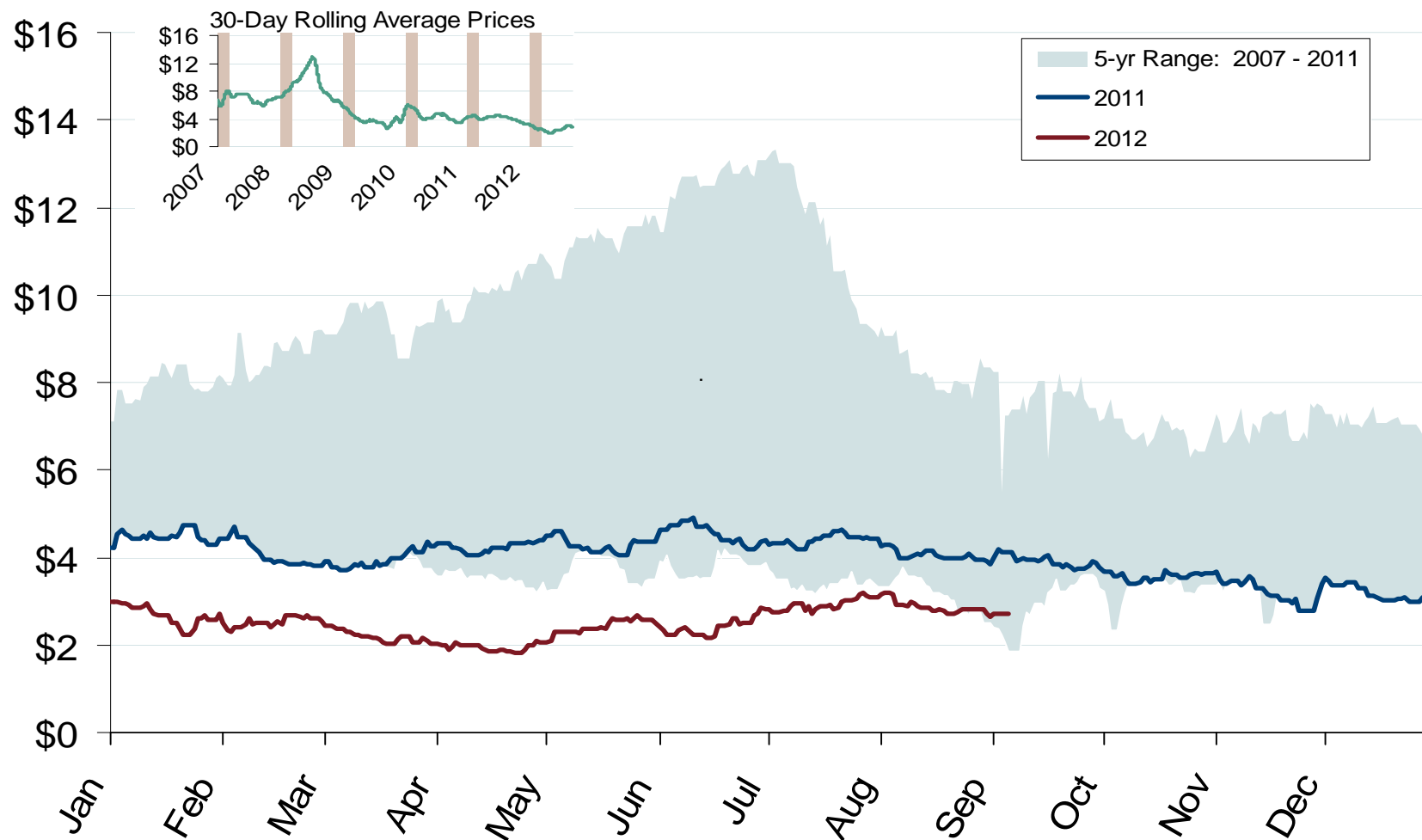


# Natural Gas and Fuels Markets

Natural Gas Market Overview: 5 Year Range of Henry Hub Spot Prices

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

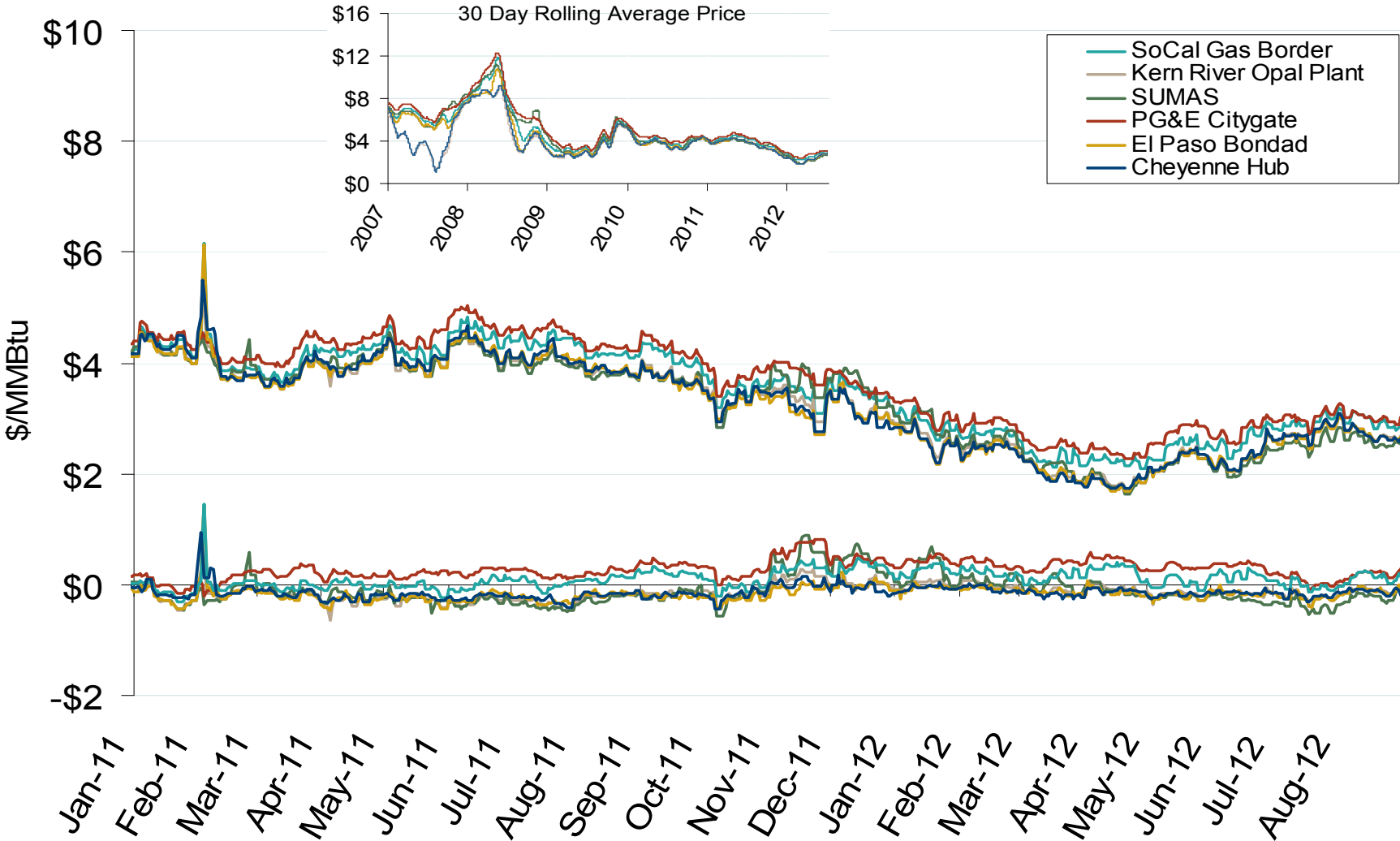
## Henry Hub Natural Gas Daily Spot Prices



Western Natural Gas Market: Spot Prices and Basis

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

### Western Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data  
September 2012 Western Snapshot Report

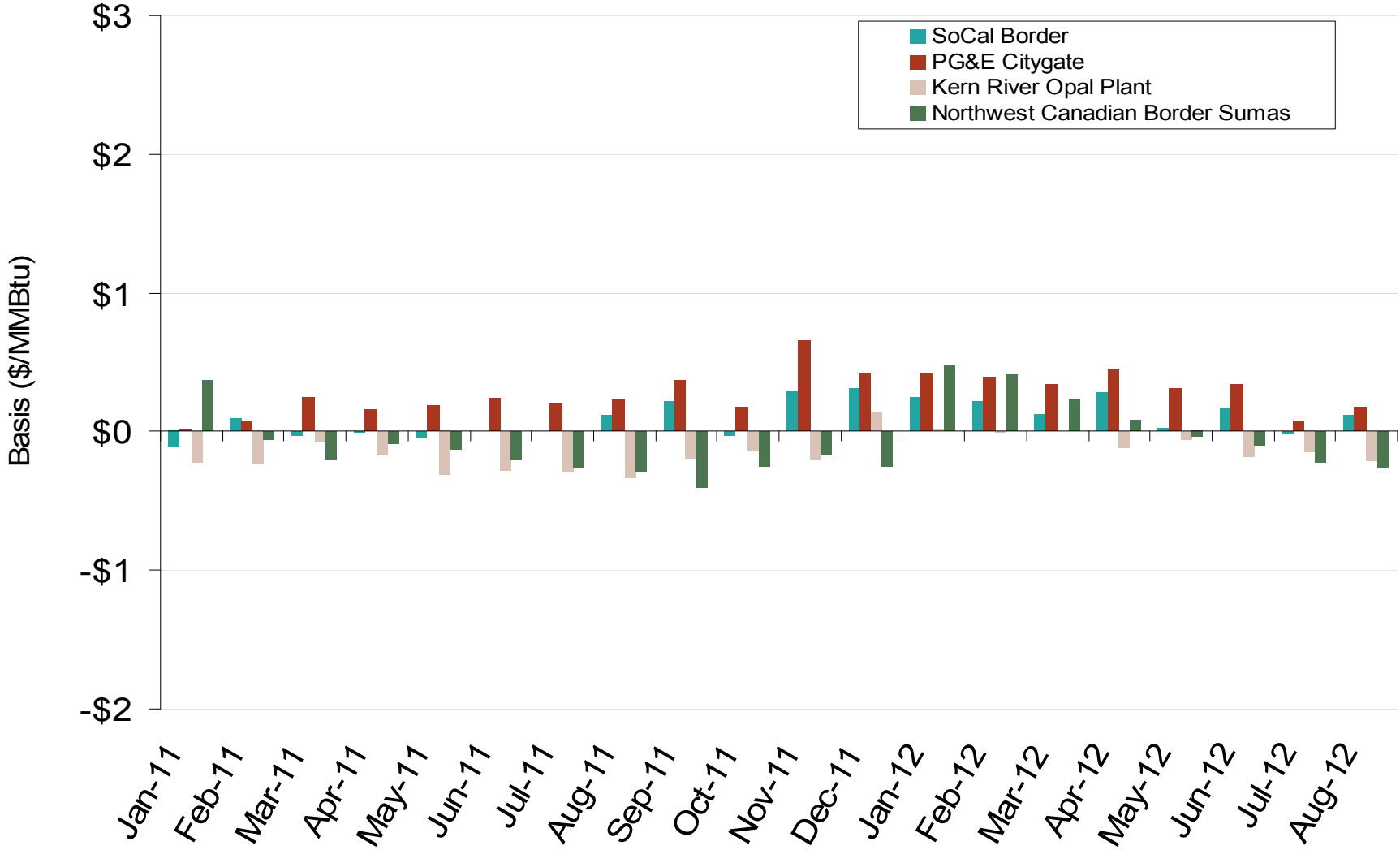
Updated: September 04, 2012



Western Natural Gas Market: Average Basis to Henry Hub

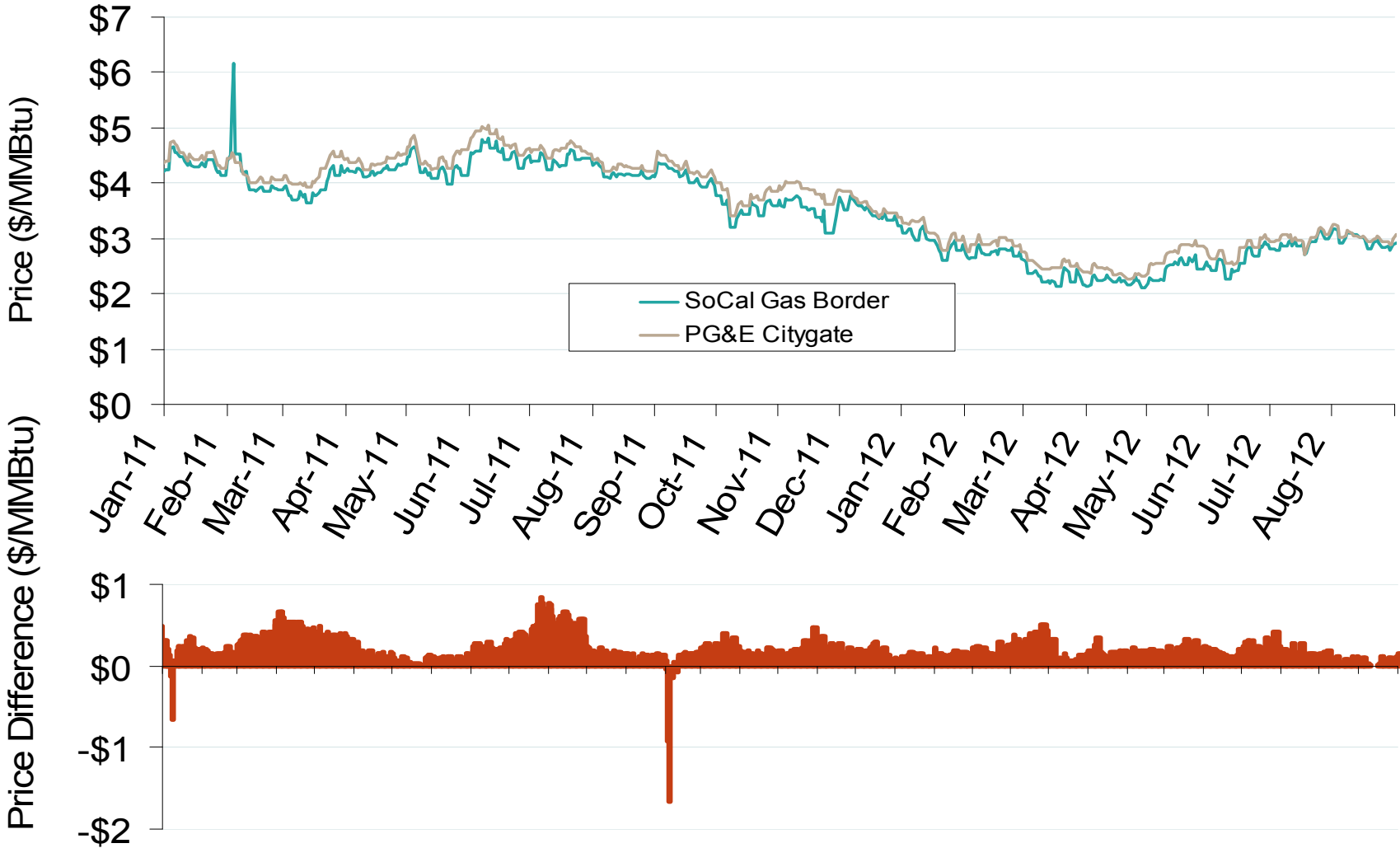
Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

Western Monthly Average Basis Value to Henry Hub



Source: Derived from Platts data  
September 2012 Western Snapshot Report

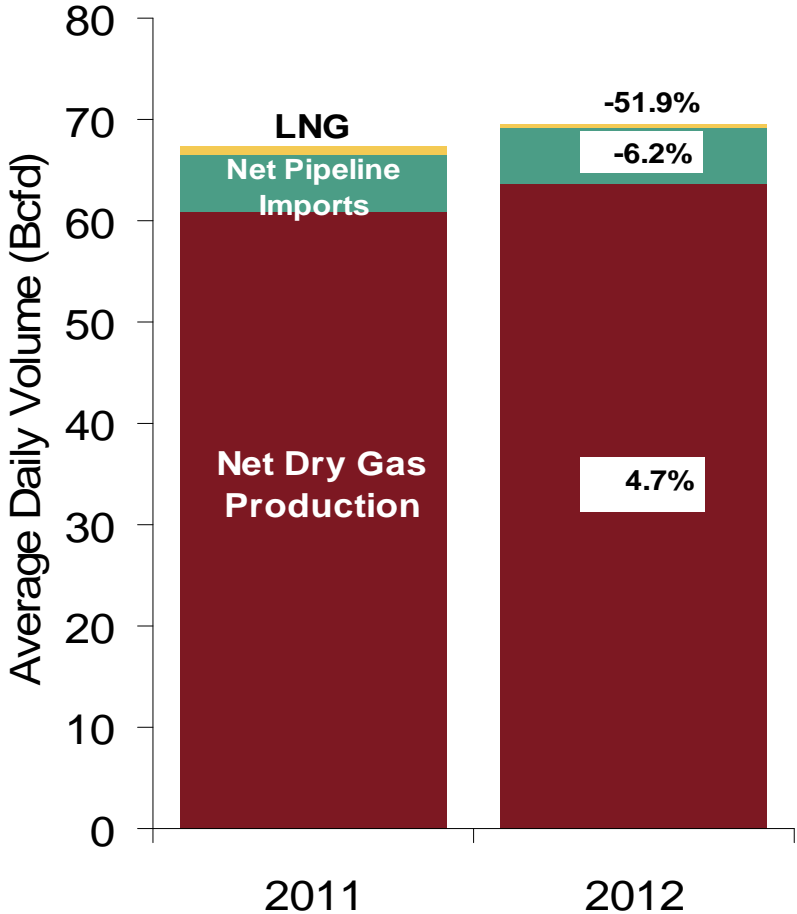
### Difference in Northern and Southern California Daily Spot Prices



# U.S. NG Supply and Demand 2011 vs. 2012: January - August

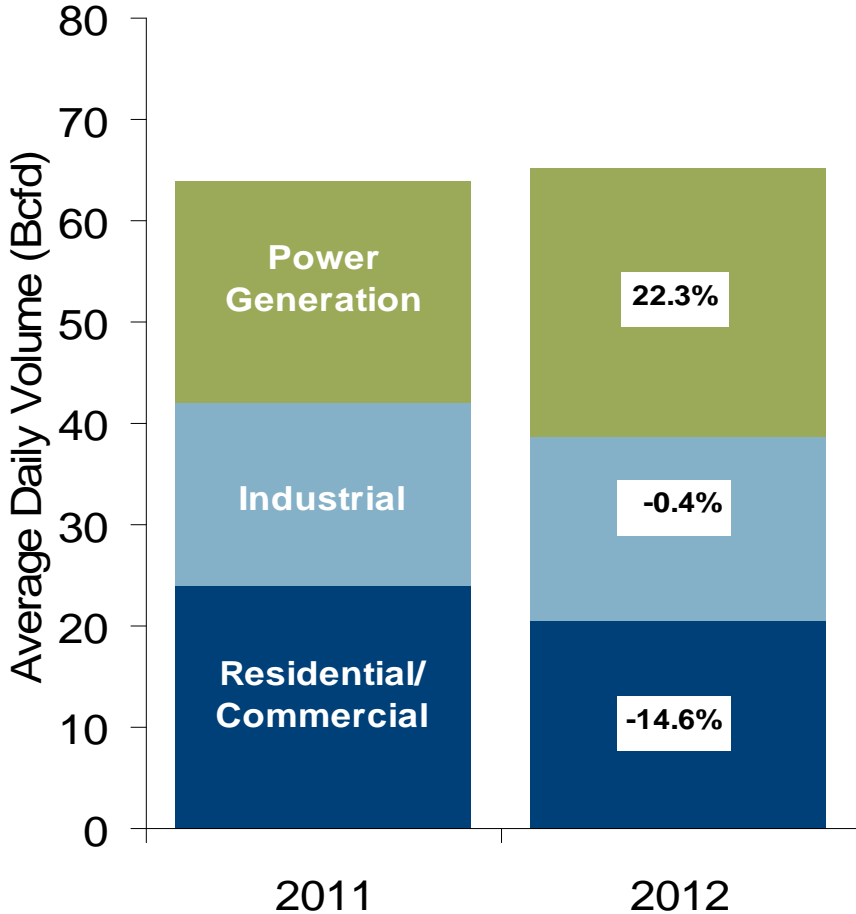
## US Natural Gas Supply

Total Change in Supply 2.9%



## US Natural Gas Demand

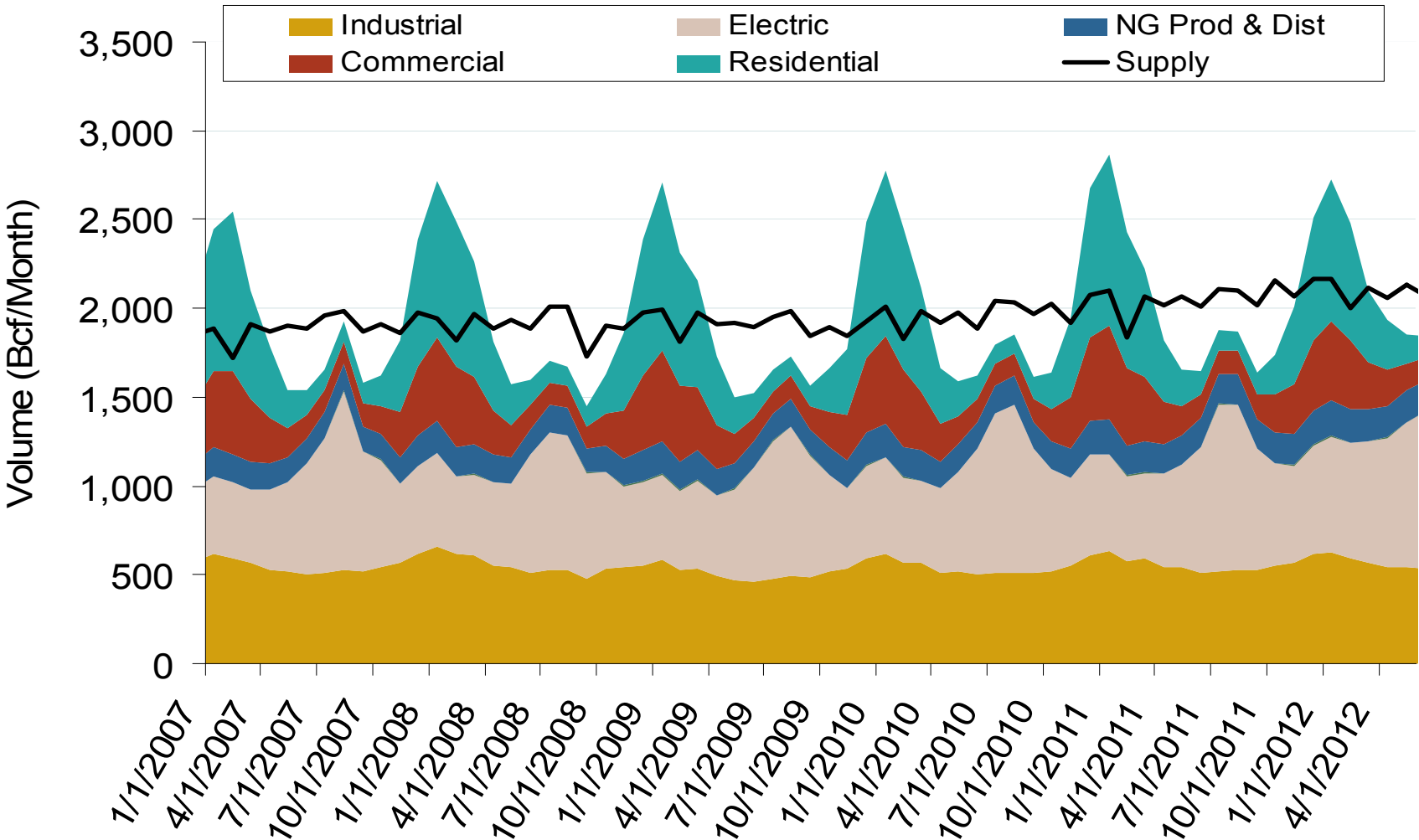
Total Change in Demand 2.7%



Natural Gas market Overview: Consumption by Sector

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

Annual U.S. Natural Gas Consumption by Sector



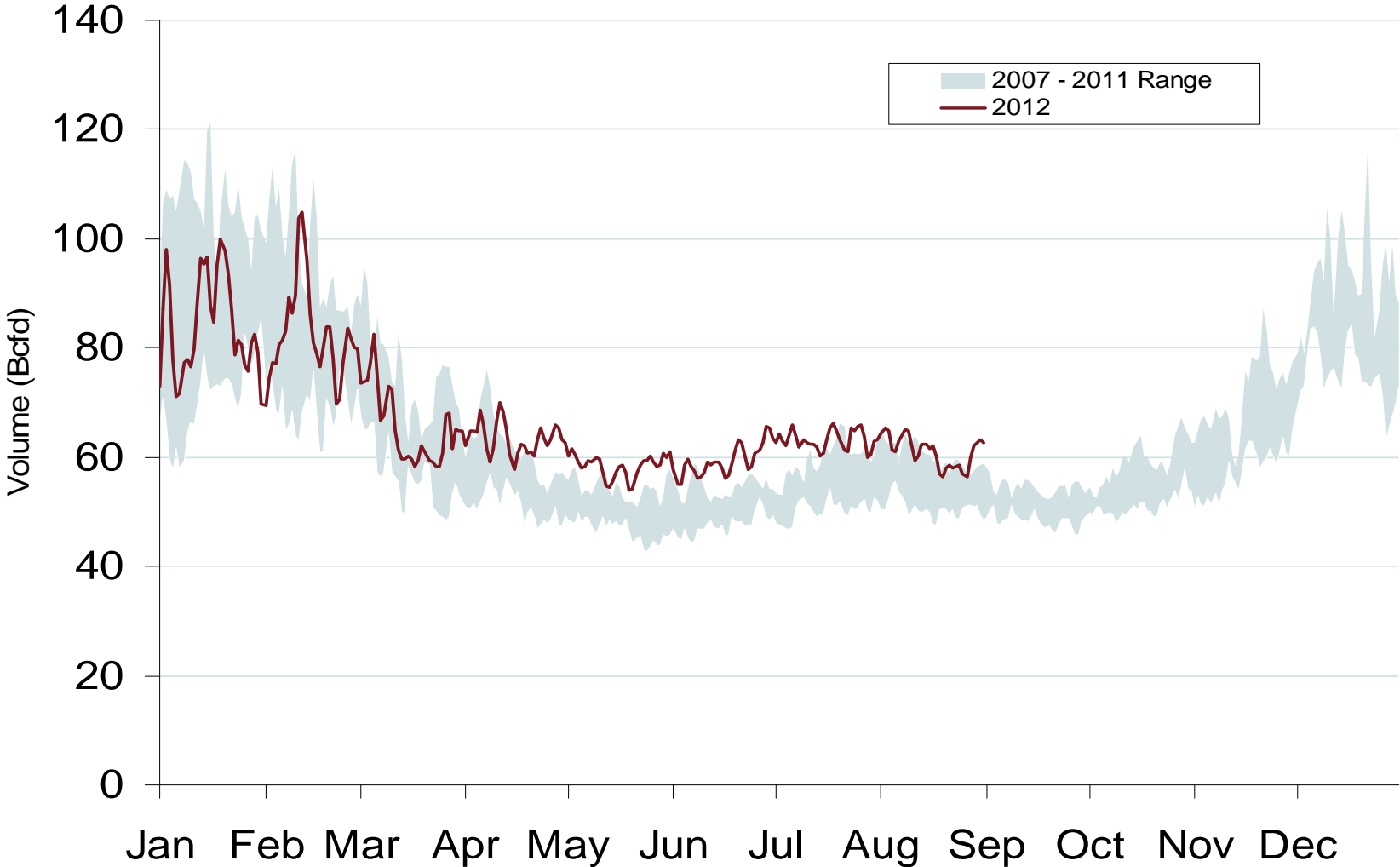
Notes: Supply includes lower 48 state production, net pipeline imports, and LNG imports

Source: Derived from EIA data

Natural Gas Market Overview: Total US Gas Demand

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

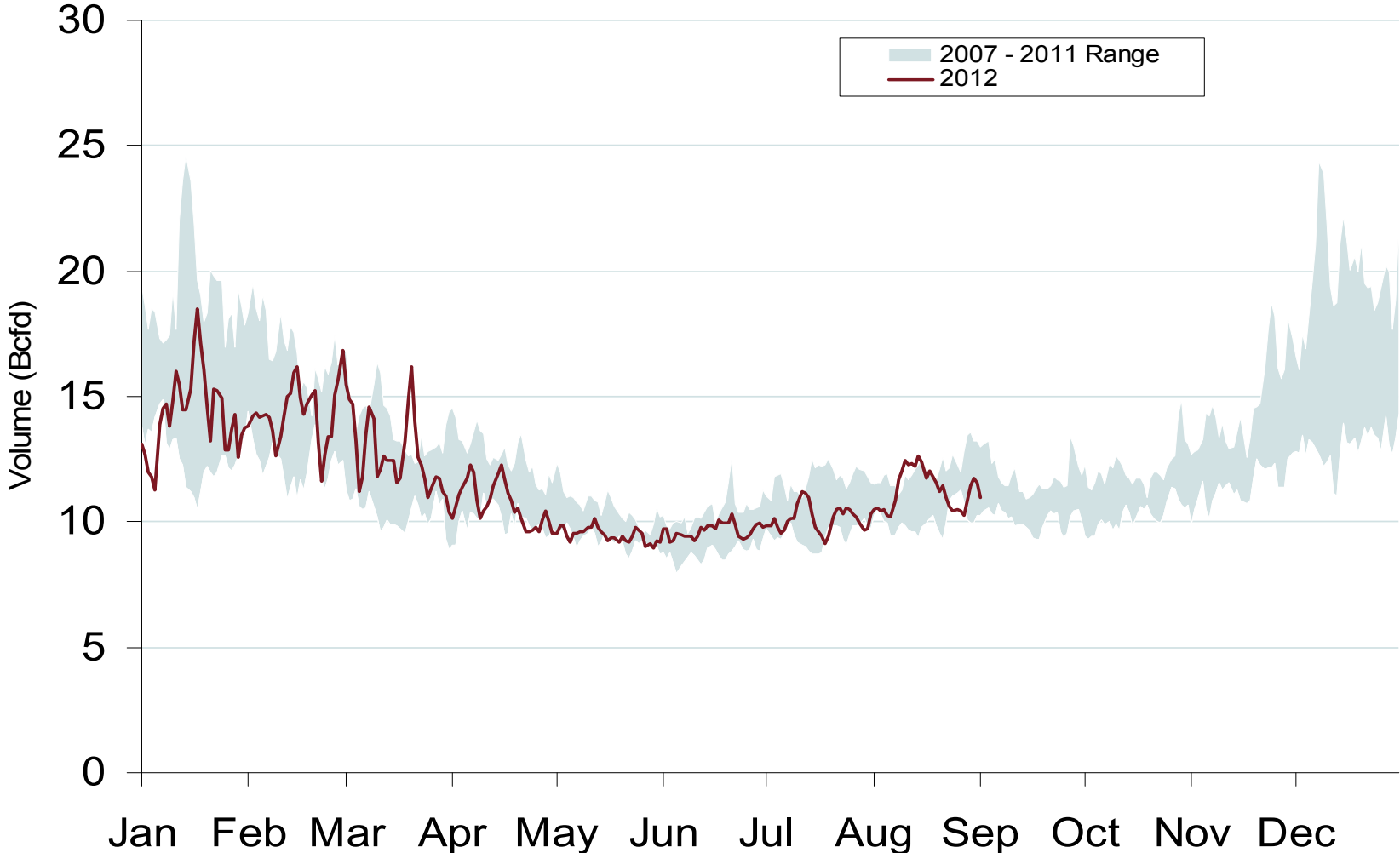
### Total U.S. Natural Gas Demand All Sectors



Source: Derived from *Bentek Energy* data  
September 2012 Western Snapshot Report

Updated: September 06, 2012

### Daily Western Natural Gas Demand All Sectors



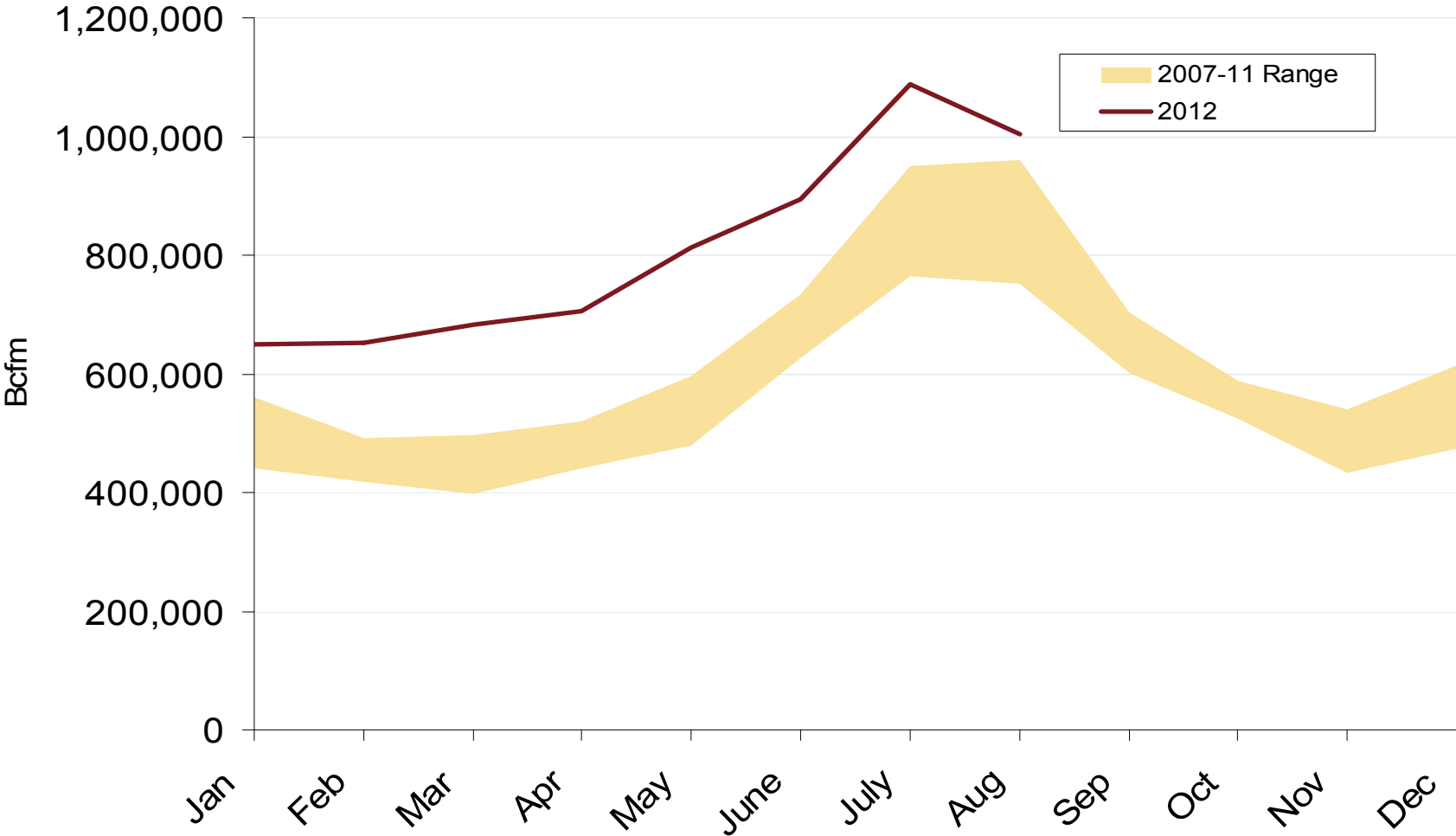
Source: Derived from *Bentek Energy* data  
September 2012 Western Snapshot Report

Updated: September 06, 2012

Natural Gas Market Overview: NG Consumption for Power Generation

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

# U.S. Natural Gas Consumption for Power Generation



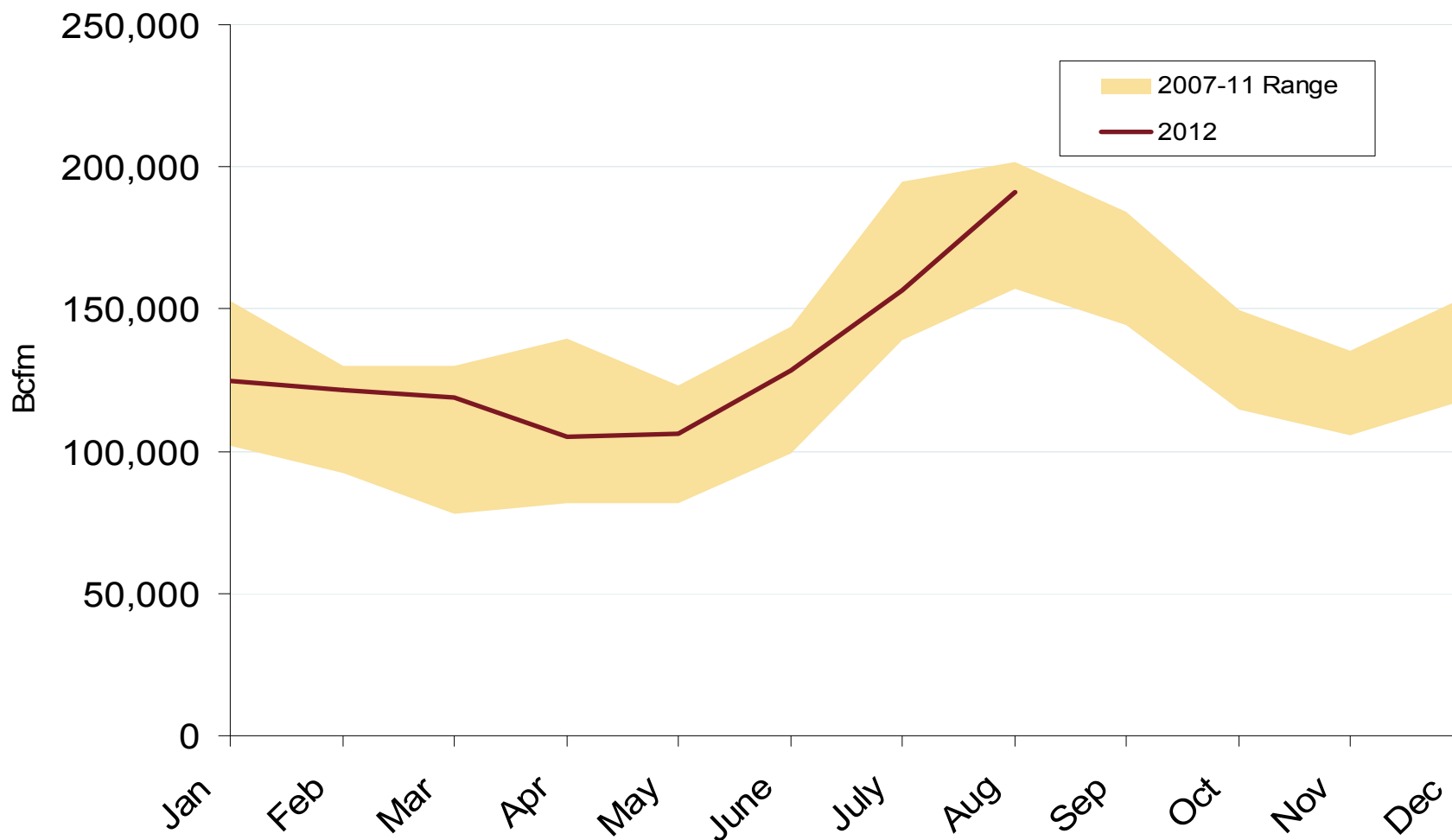
Source: Derived from *Bentek Energy* data  
September 2012 Western Snapshot Report

Updated: September 06, 2012

Western Natural Gas Market: NG Consumption for Power Generation

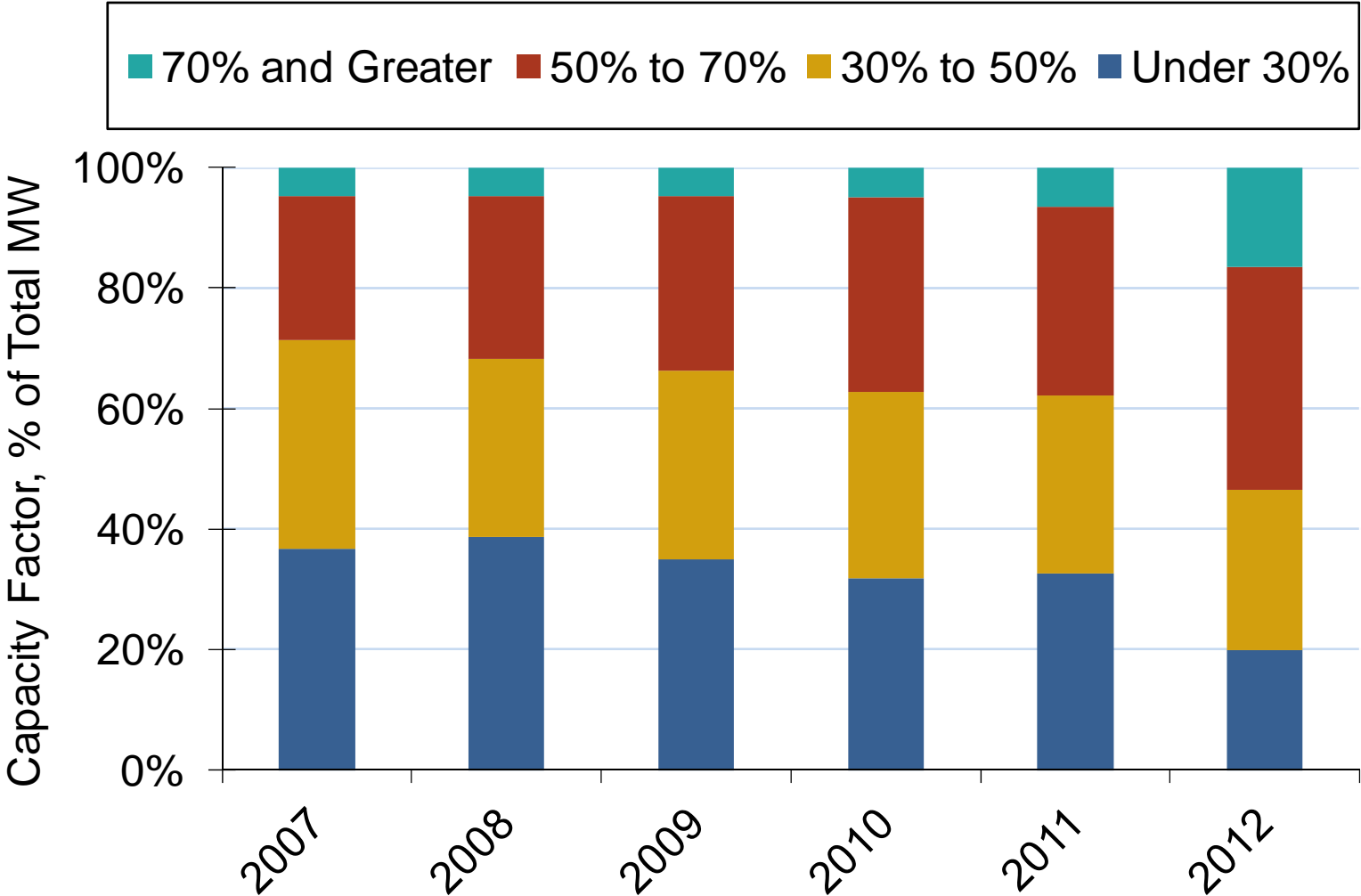
Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

## Western Natural Gas Consumption for Power Generation





# Major Shifts in U.S. CCGT Units Capacity Factors in 2012

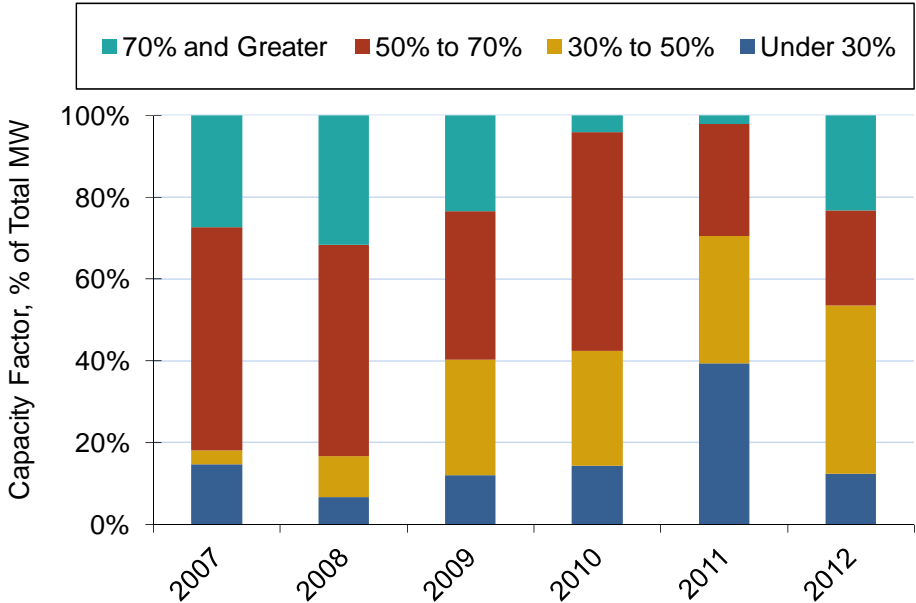


Note: CCGT-Combined Cycle Gas Turbines. The capacity factor of a plant as the annual number of MWh generated divided by the plants annual operating capability which is maximum load at which a generator can operate without exceeding approved plant stress limits.  
Source: Derived from SNL Data

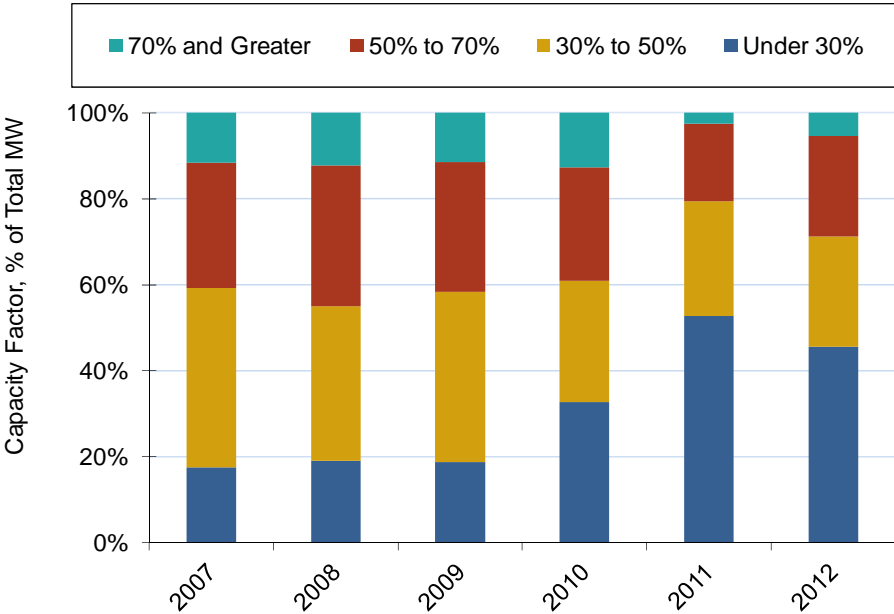
Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

# Demand for Gas-Fired Generation in the West Declines, in Contrast to Rest of the Nation

CAISO CCGT Use



WECC CCGT Use

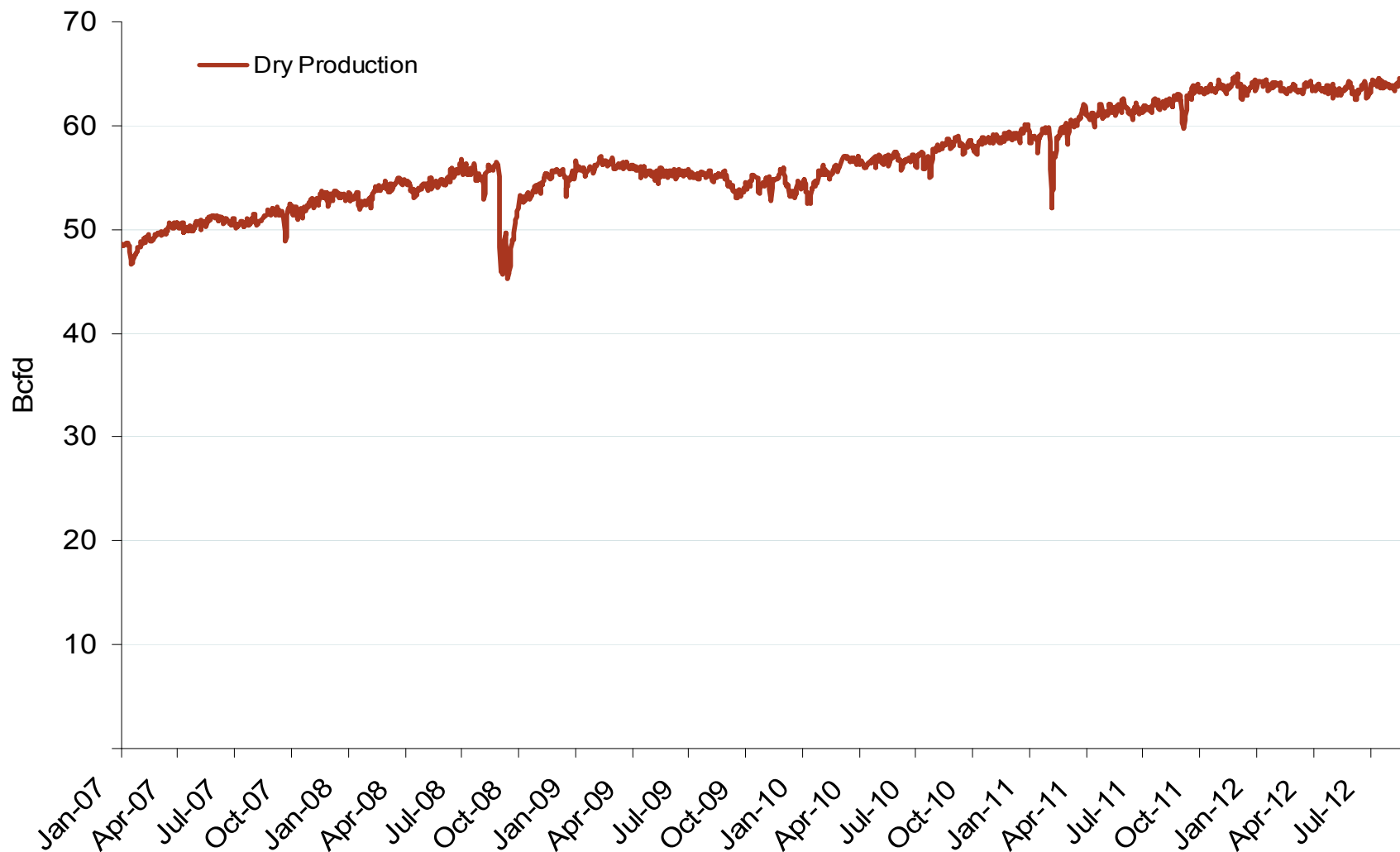


Note: CCGT-Combined Cycle Gas Turbines. The capacity factor of a plant as the annual number of MWh generated divided by the plants annual operating capability which is maximum load at which a generator can operate without exceeding approved plant stress limits. Source: Derived from SNL Data

## Natural Gas Markets: Monthly U.S. Dry Gas Production

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

### 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

September 2012 Western Snapshot Report

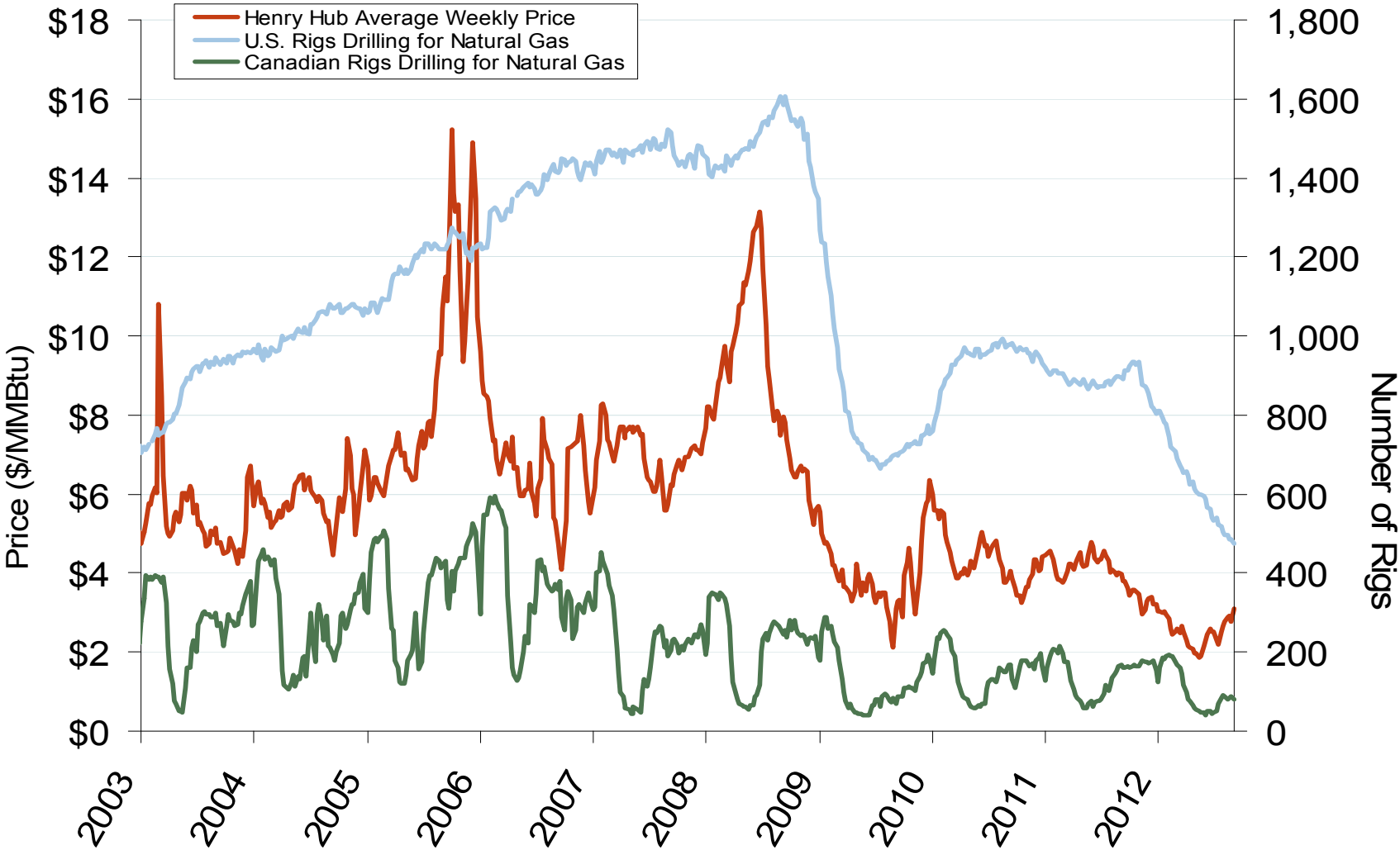
Updated: September 06, 2012

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Natural Gas Market Overview: Drilling Rig Count

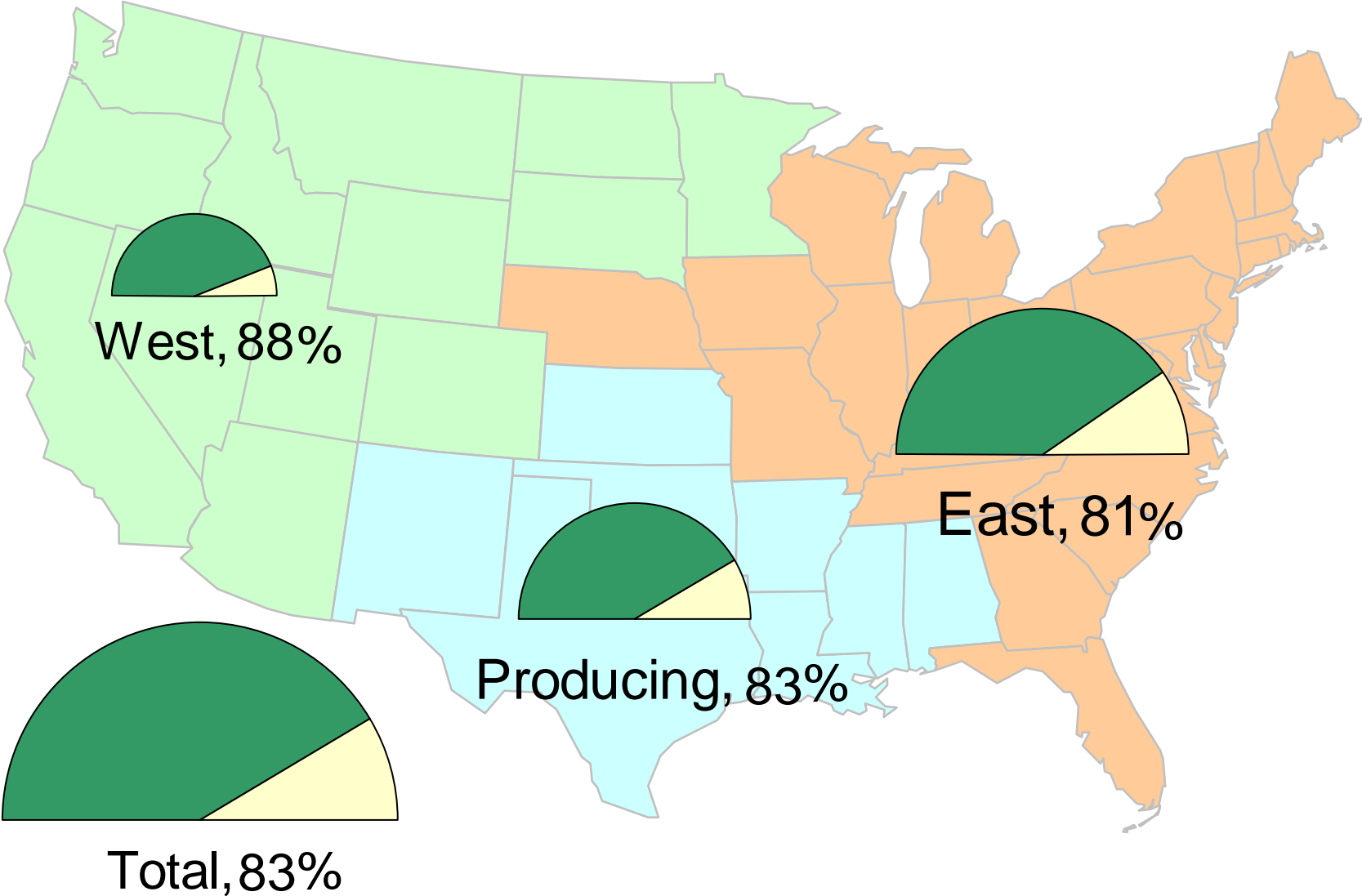
Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

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



Source: Derived from *Platts* and *Baker Hughes* data  
September 2012 Western Snapshot Report

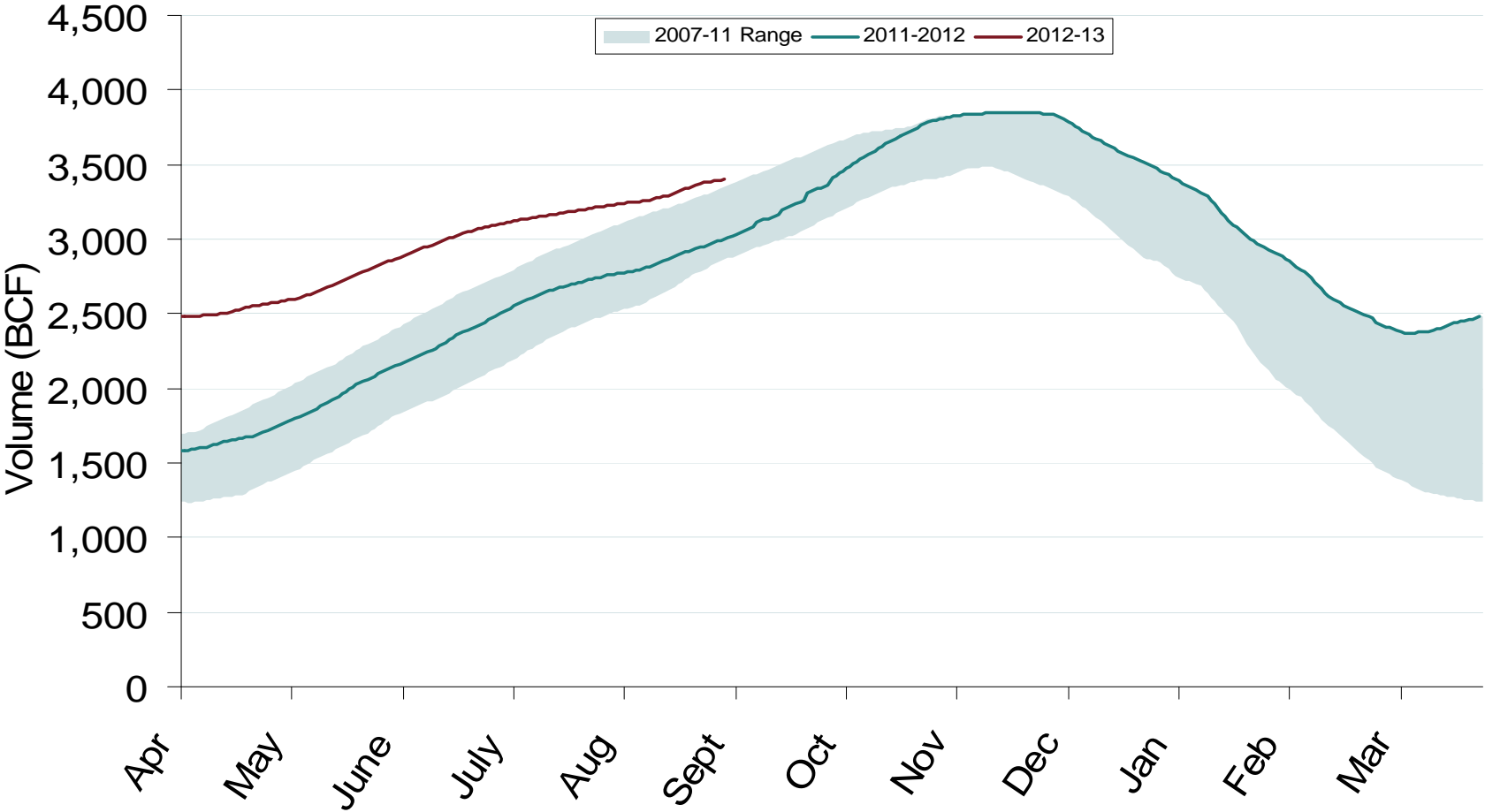
# Natural Gas Storage Inventories – August 31, 2012



Source: Derived from EIA Storage and Estimated Working Gas Capacity data  
September 2012 Western Snapshot Report

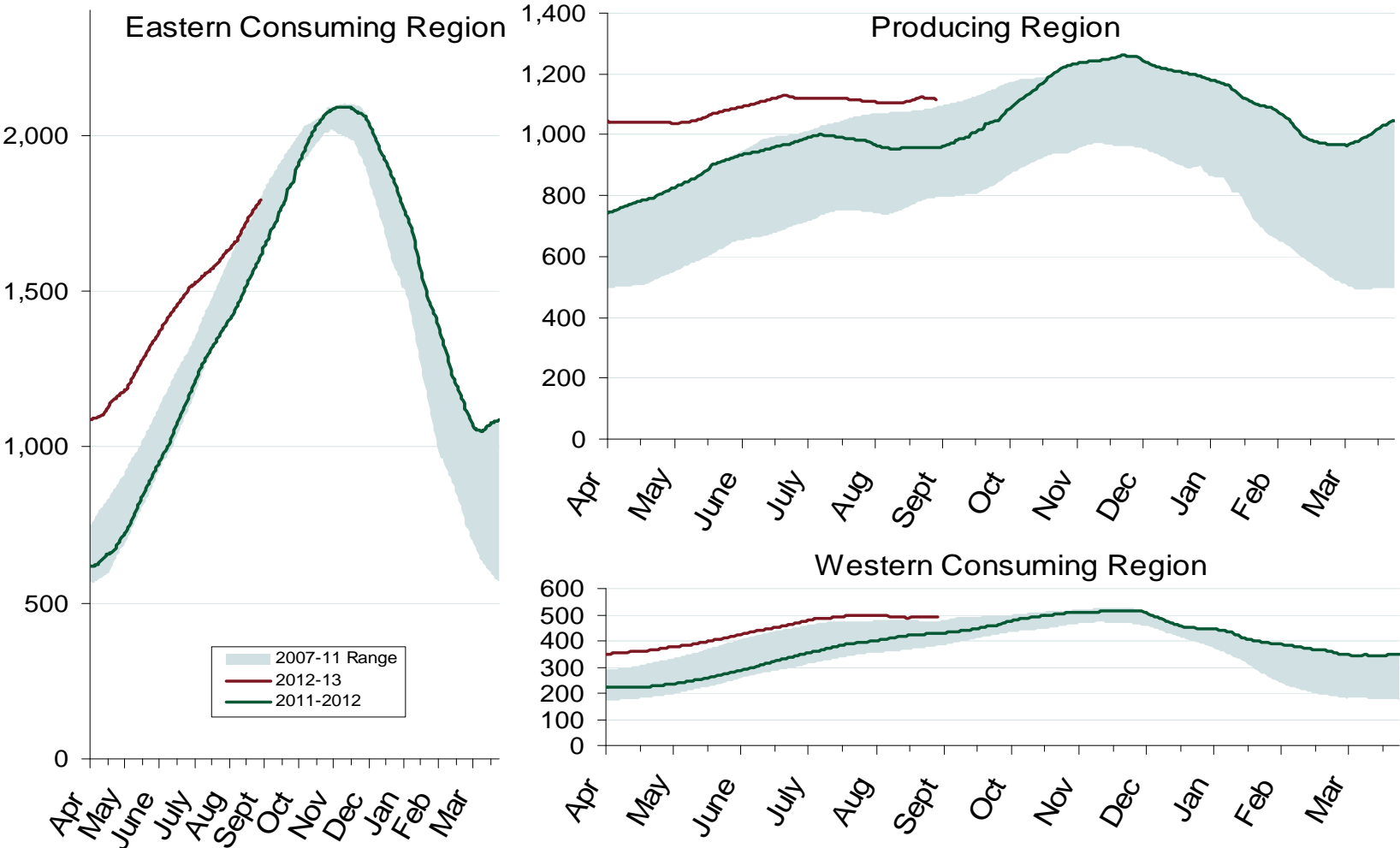
Updated: September 6, 2012<sup>022</sup>

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



Source: Derived from EIA data  
September 2012 Western Snapshot Report

# Regional Totals of Working Gas in Storage



Source: Derived from EIA data  
September 2012 Western Snapshot Report

Updated: September 06, 2012

## Natural Gas Overview: World LNG Prices

Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)**World LNG Estimated October 2012 Landed Prices**

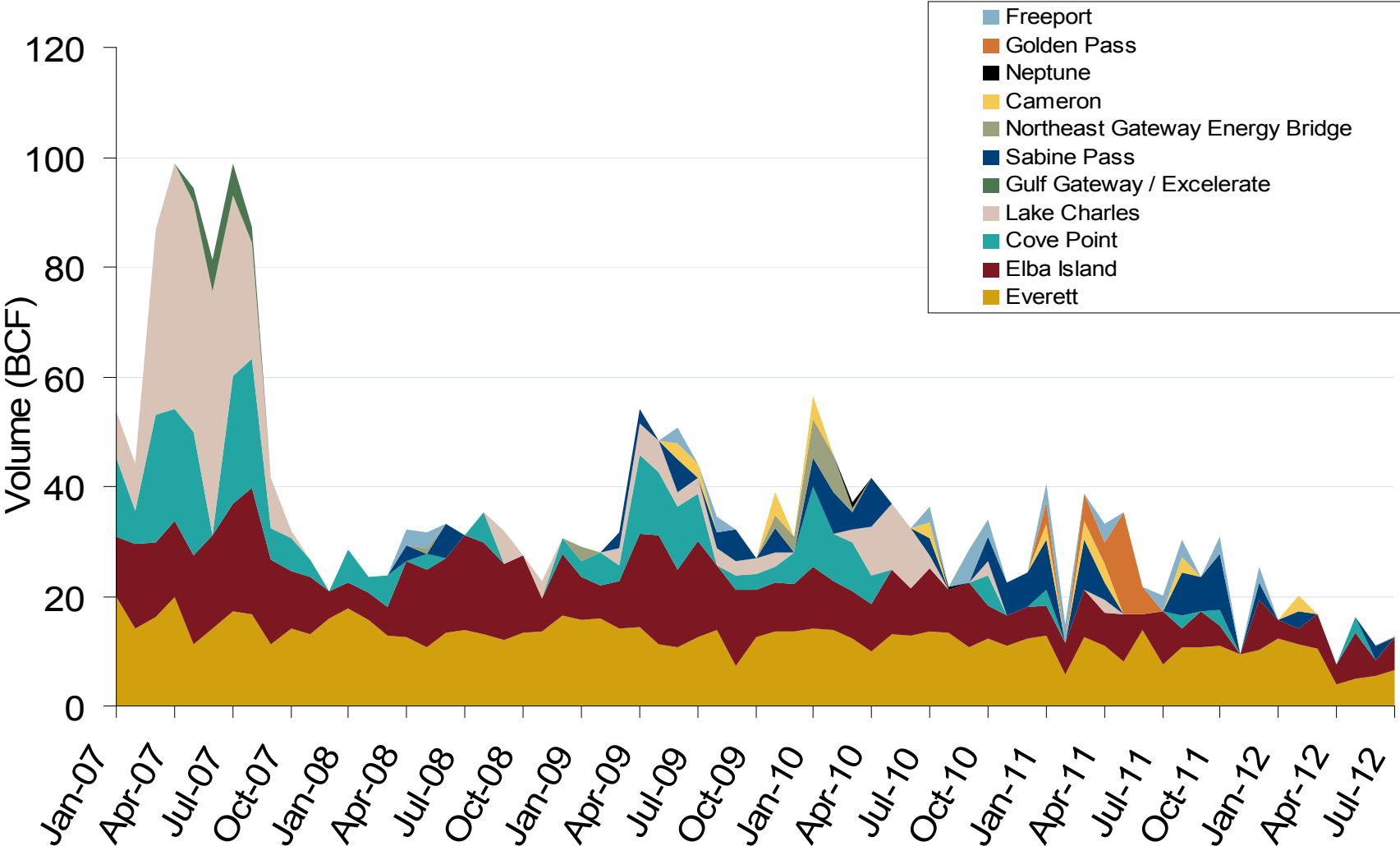
Source: Waterborne Energy, Inc. Data in \$US/MMBtu

September 2012 Western Snapshot Report

Updated: September 7, 2012<sup>3024</sup>



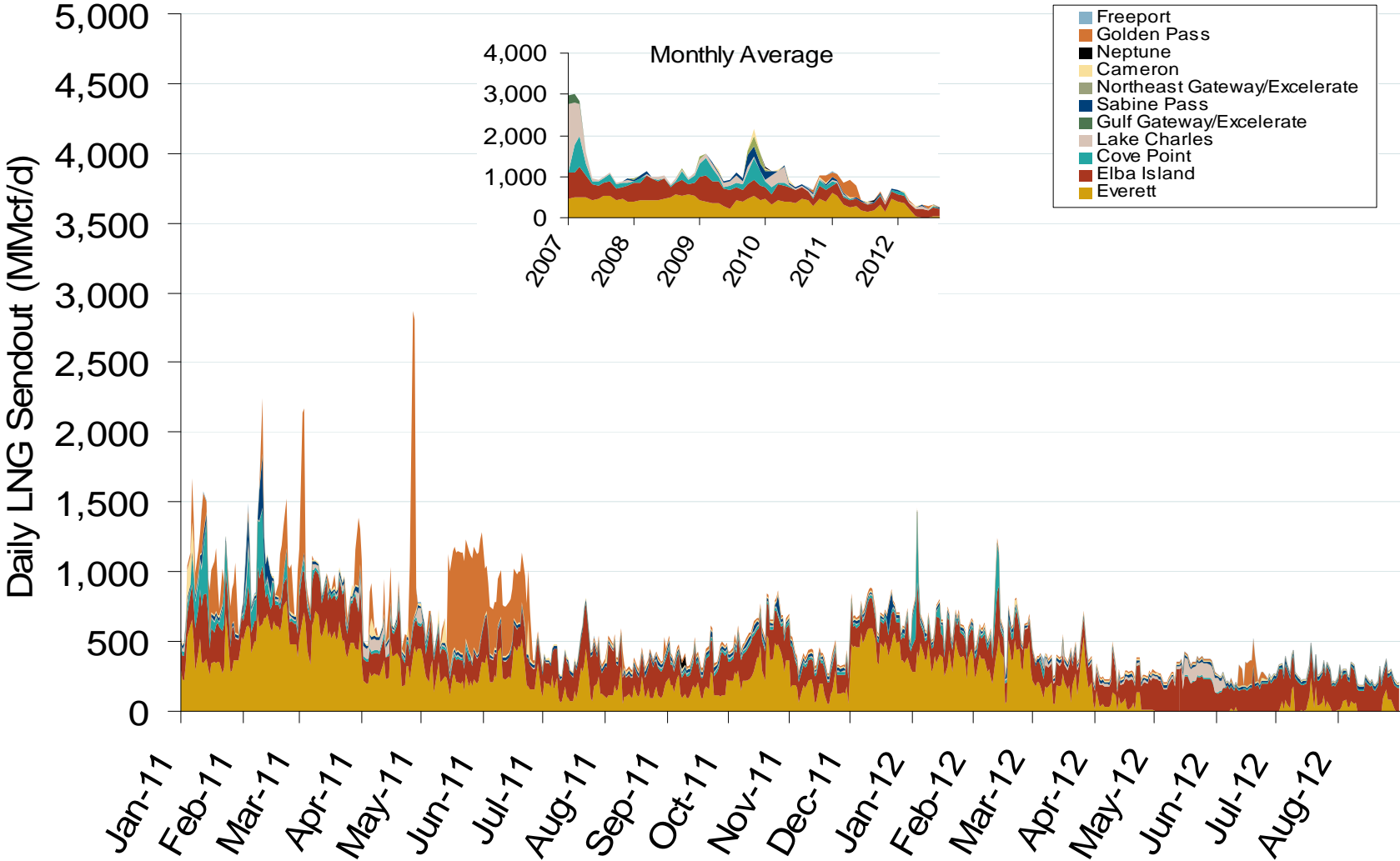
# Monthly Gas Imports at Existing U.S. LNG Facilities



Source: Derived from DOE Office of Fossil Energy data  
September 2012 Western Snapshot Report

Updated: September 06, 2012

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

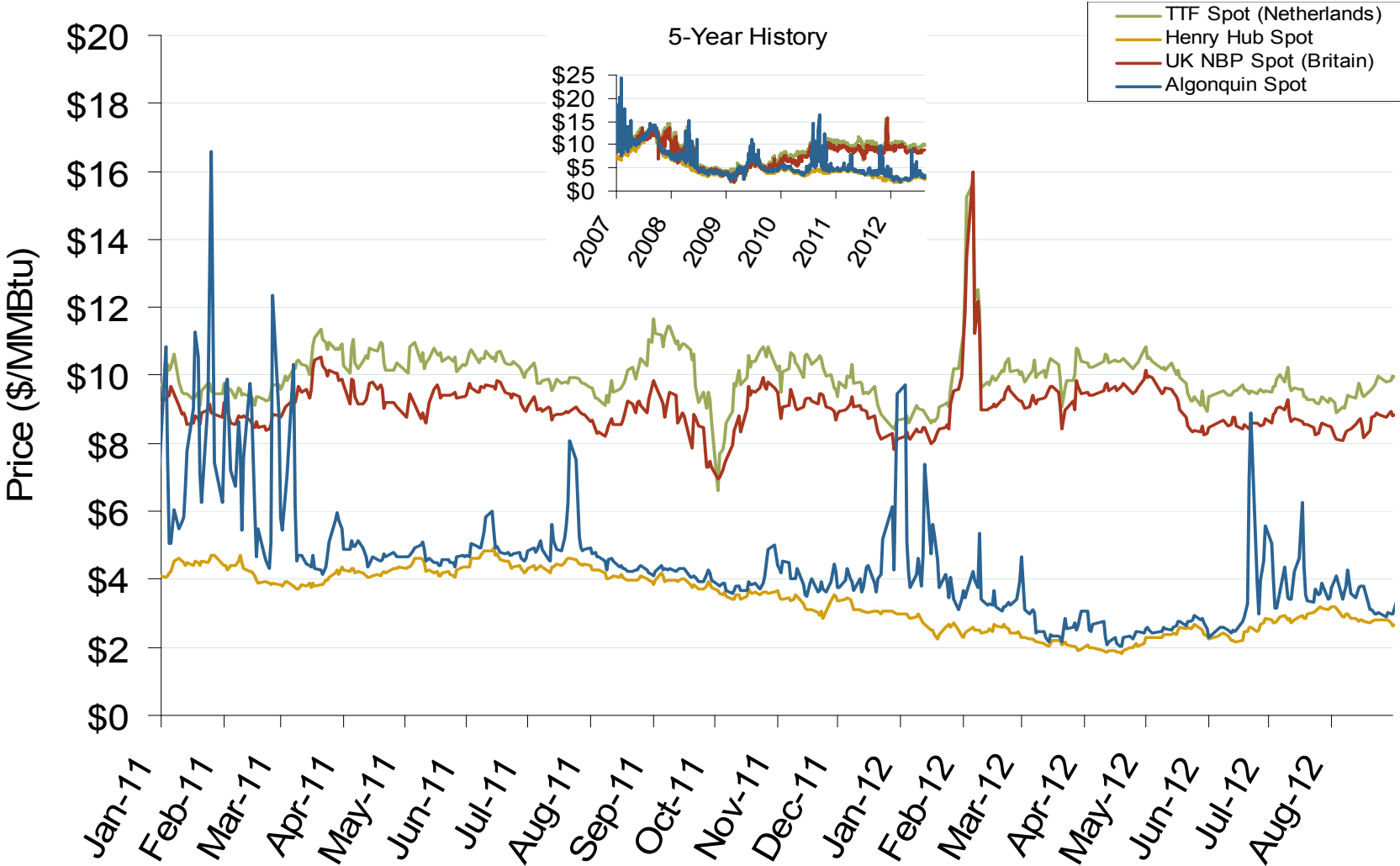


Notes: Everett data includes flows onto the AGT and TGP interstate lines, plus estimates of flows to the Mystic 7 power plant, Keyspan BostonGas, and LNG trucked out of the terminal. Excludes flows to the Freeport LNG which flows via intrastate pipelines and flows to the Mystic 8 and 9 power plants.

Source: Derived from *Bentek Energy* data  
September 2012 Western Snapshot Report

Updated: September 07, 2012

# Atlantic Basin European and US Spot Natural Gas Prices



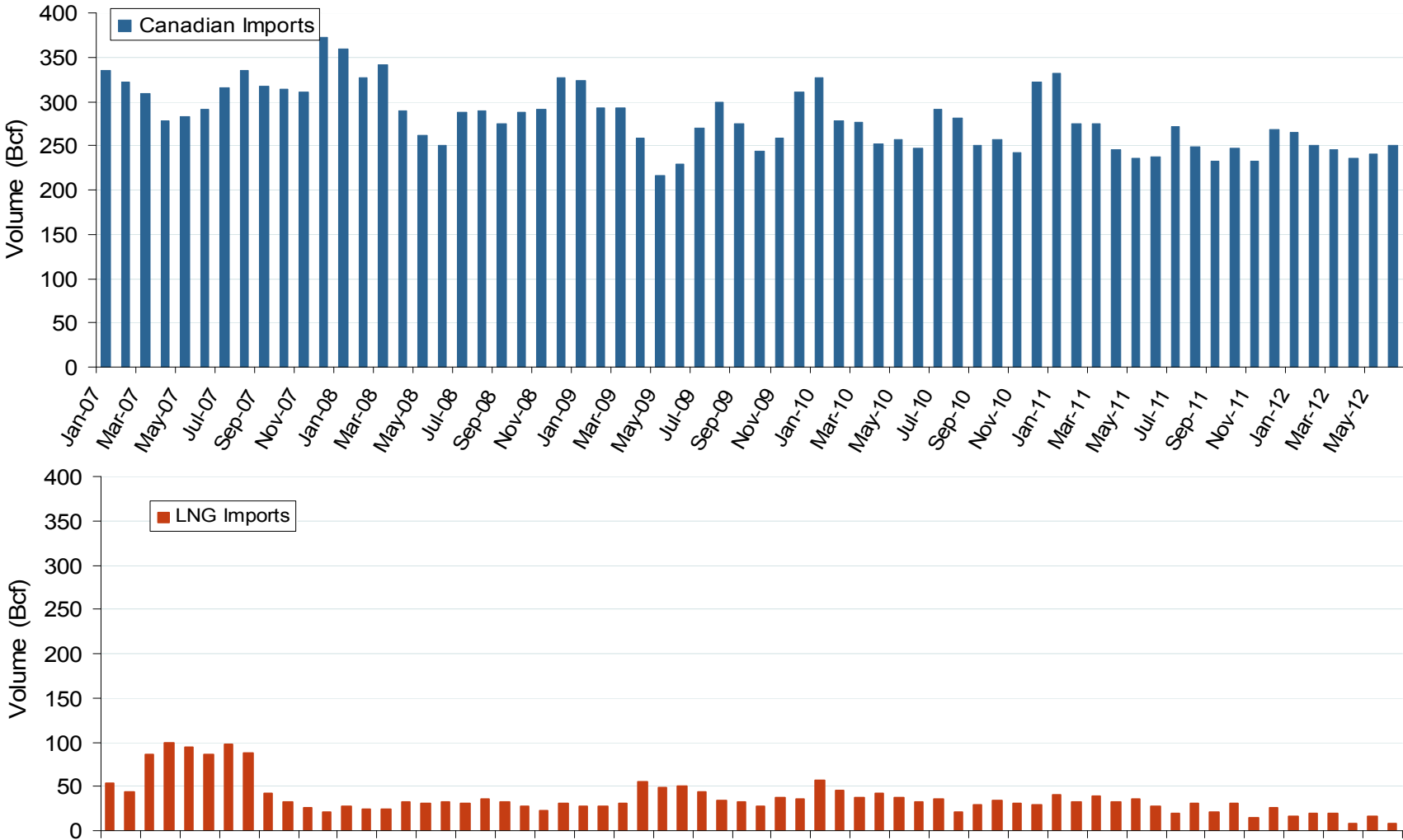
Source: Derived from *Bloomberg* and *ICE* data  
September 2012 Western Snapshot Report

Updated: September 04, 2012

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.



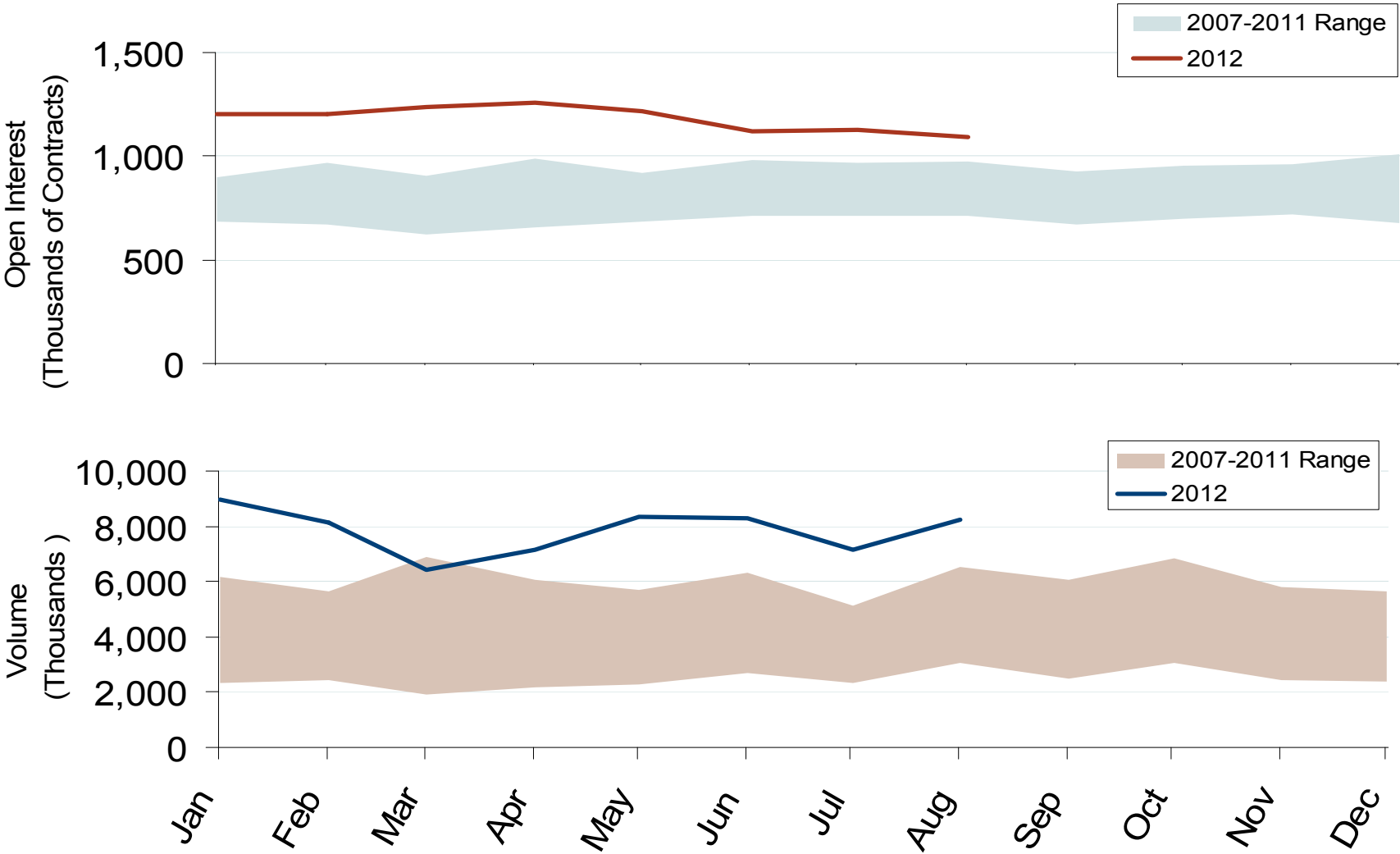
Source: EIA Natural Gas Monthly  
September 2012 Western Snapshot Report

Updated: September 06, 2012

Natural Gas Trading: Futures Open Interest and Volume

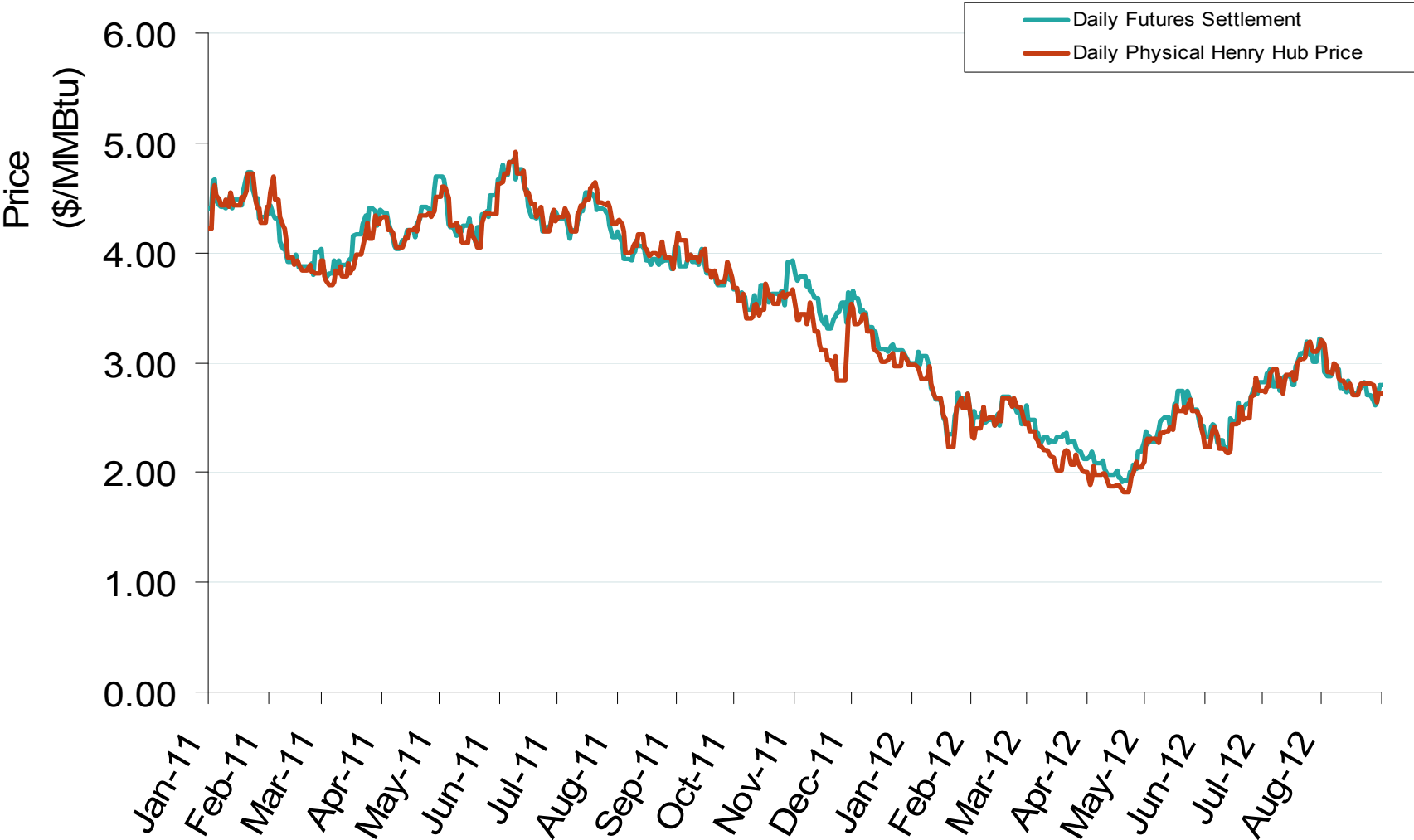
Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)

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



Source: Derived from Nymex data  
September 2012 Western Snapshot Report

# Daily Physical Index Price & Daily Futures Settlement Price

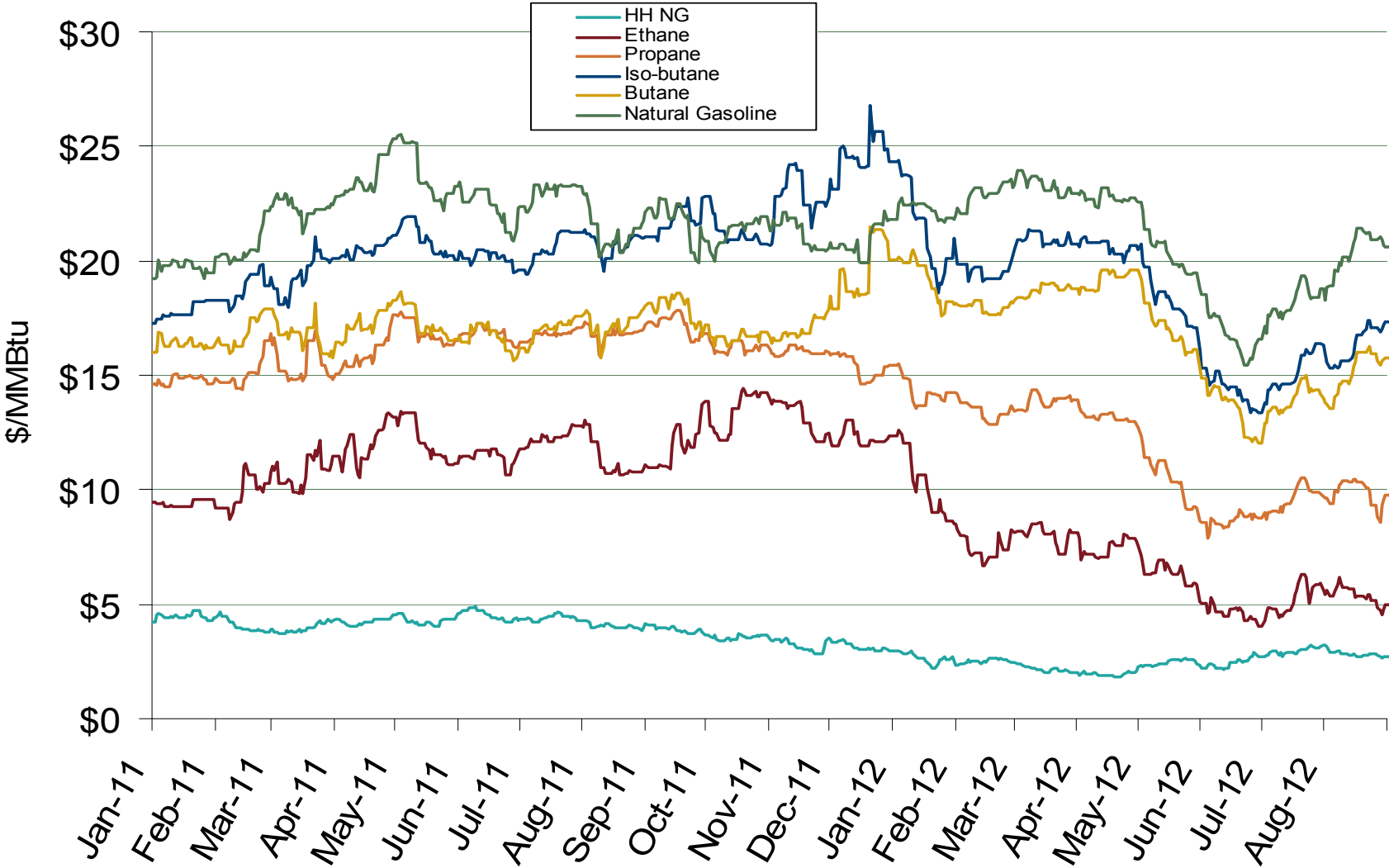


Source: Derived from *Bloomberg* data  
September 2012 Western Snapshot Report

Natural Gas Market Overview: NGL Prices

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



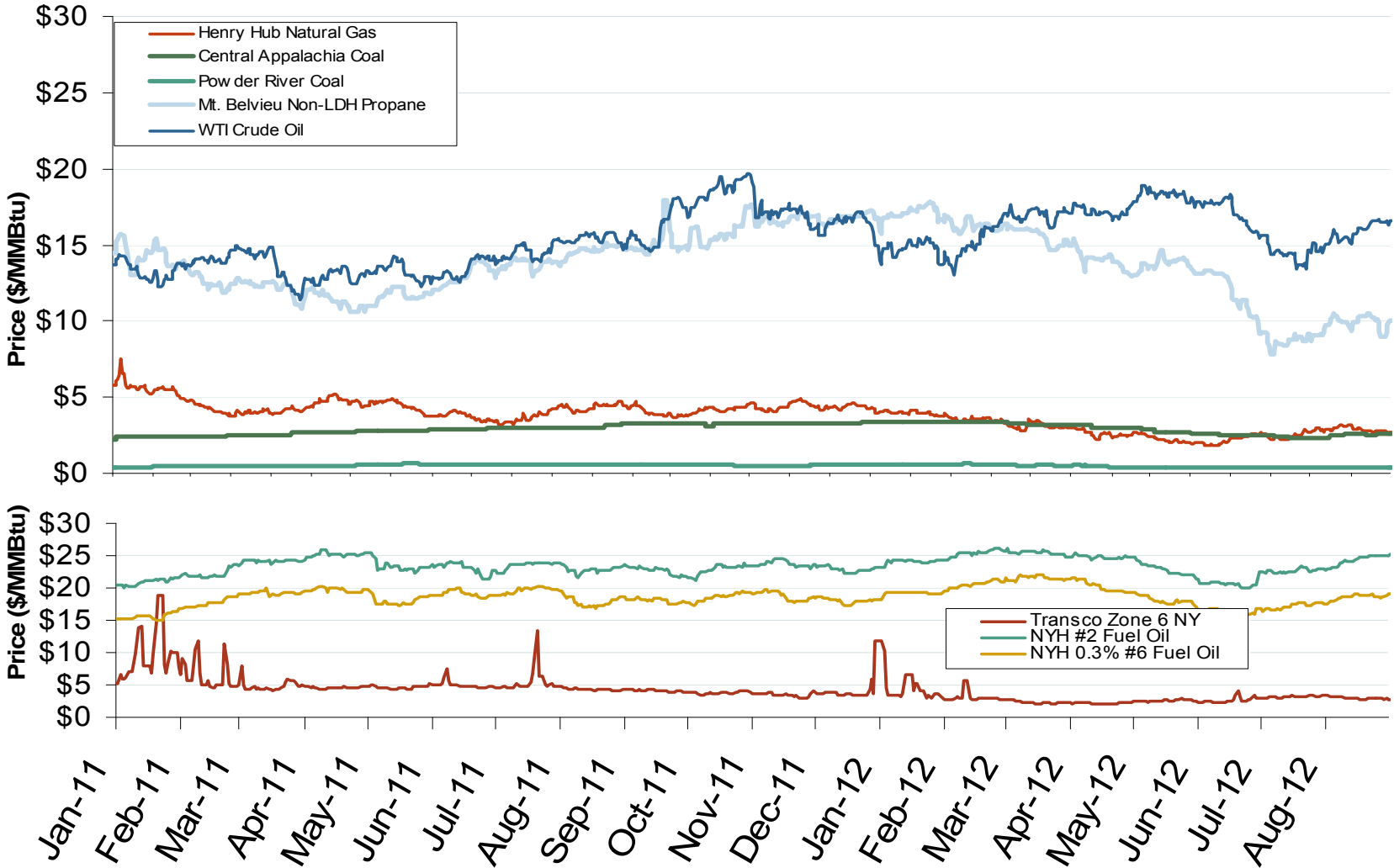
Source: Derived from Bloomberg Data  
September 2012 Western Snapshot Report

Updated: September 04, 2012

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

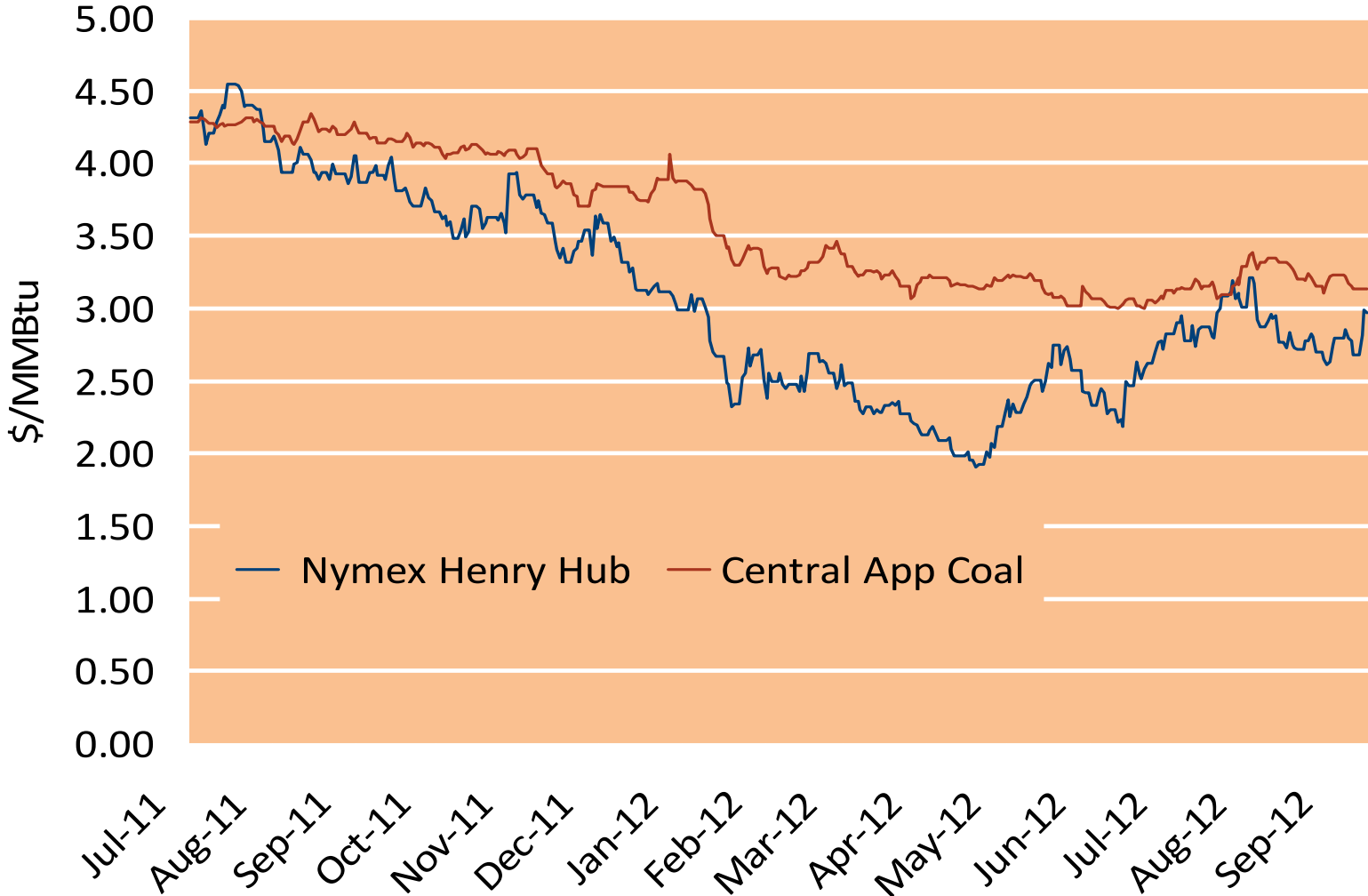


Notes: Coal prices are quoted in \$/ton. Conversion factors to \$/MMBtu are based on contract specifications of 12,000 btus/pound for Central Appalachian coal and 8800 btus/pound for Powder River Basin coal

Source: Derived from ICE and Bloomberg data



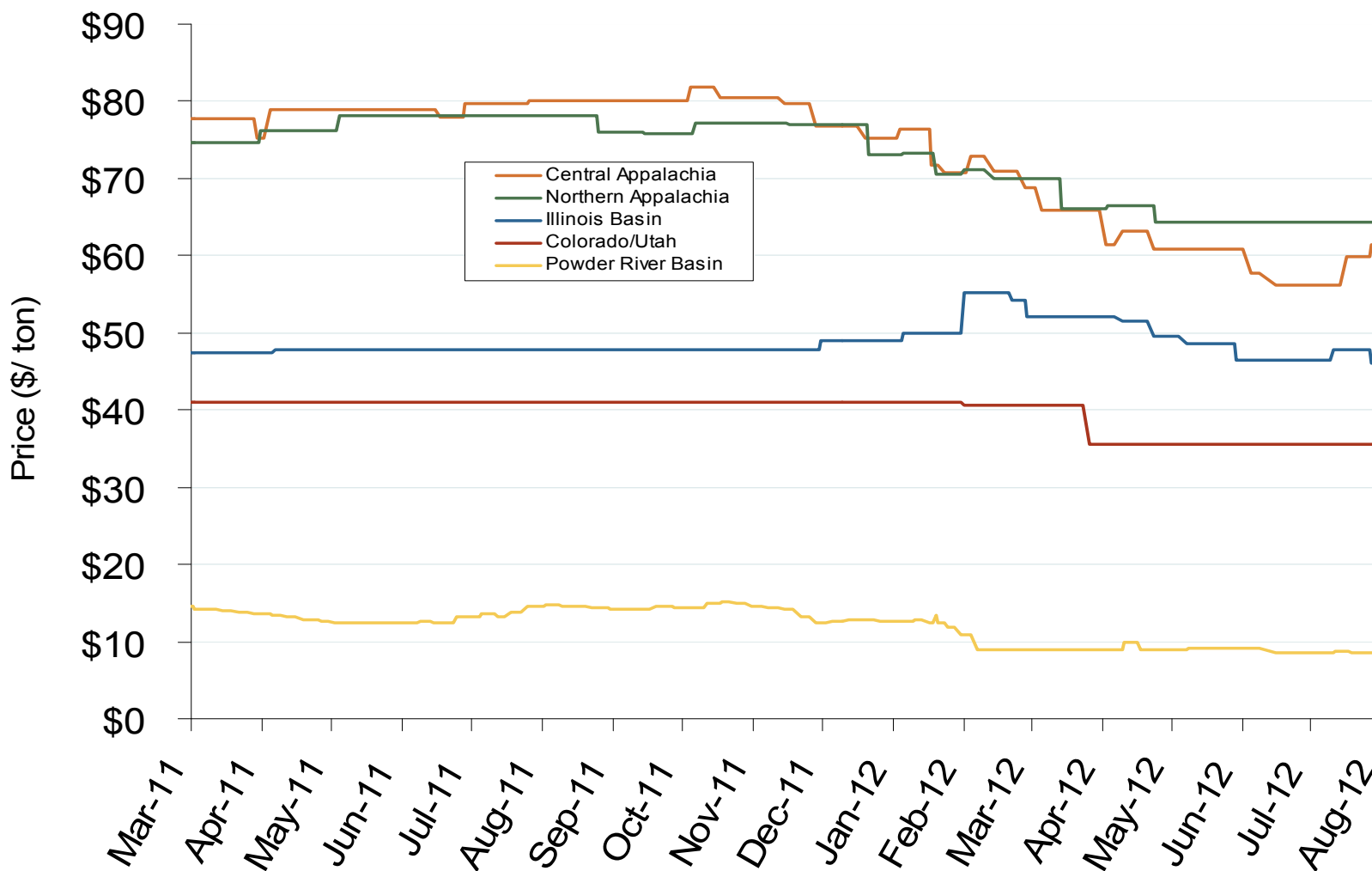
### Gas Prices Reach Parity with Coal



National Electric Market Overview: Coal Prices

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

## 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

Updated: September 04, 2012

## Other Fuels Market: U.S. Coal Stockpiles

Federal Energy Regulatory Commission • Market Oversight • [www.ferc.gov/oversight](http://www.ferc.gov/oversight)**U.S. Coal Stockpiles at Electric Power Generating Facilities**