

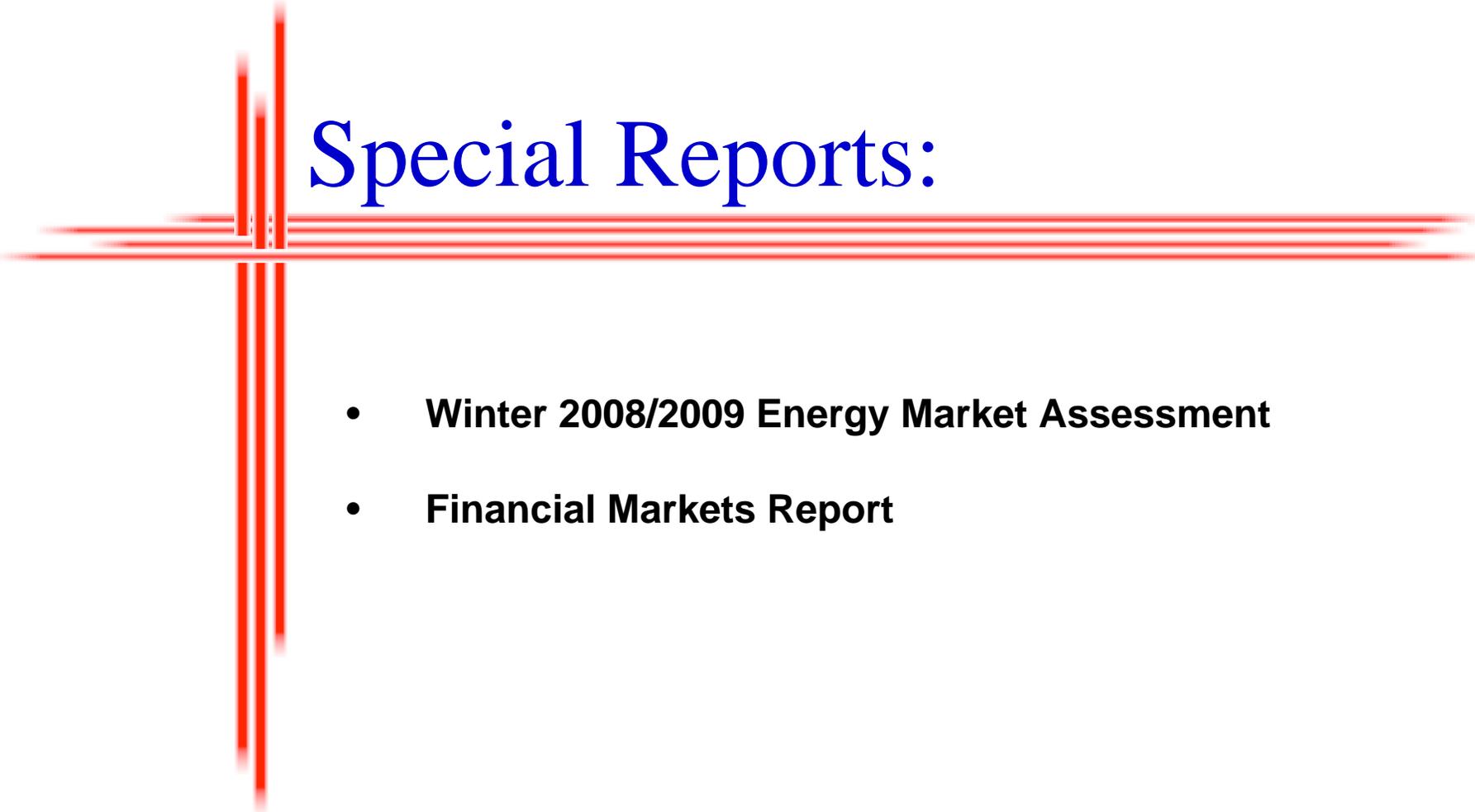
# OE ENERGY MARKET SNAPSHOT

## Western States Version – October 2008 Data

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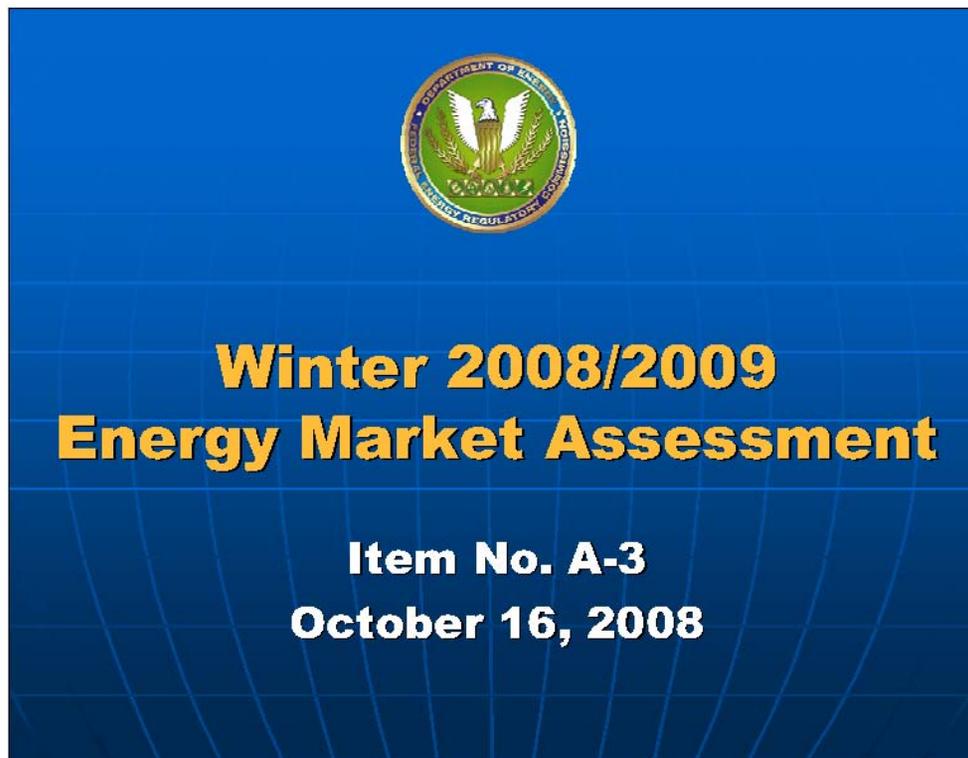
- [Special Reports](#)
- [Electricity Markets](#)
- [Natural Gas and Fuel Markets](#)

Office of Enforcement  
Federal Energy Regulatory Commission  
November 2008



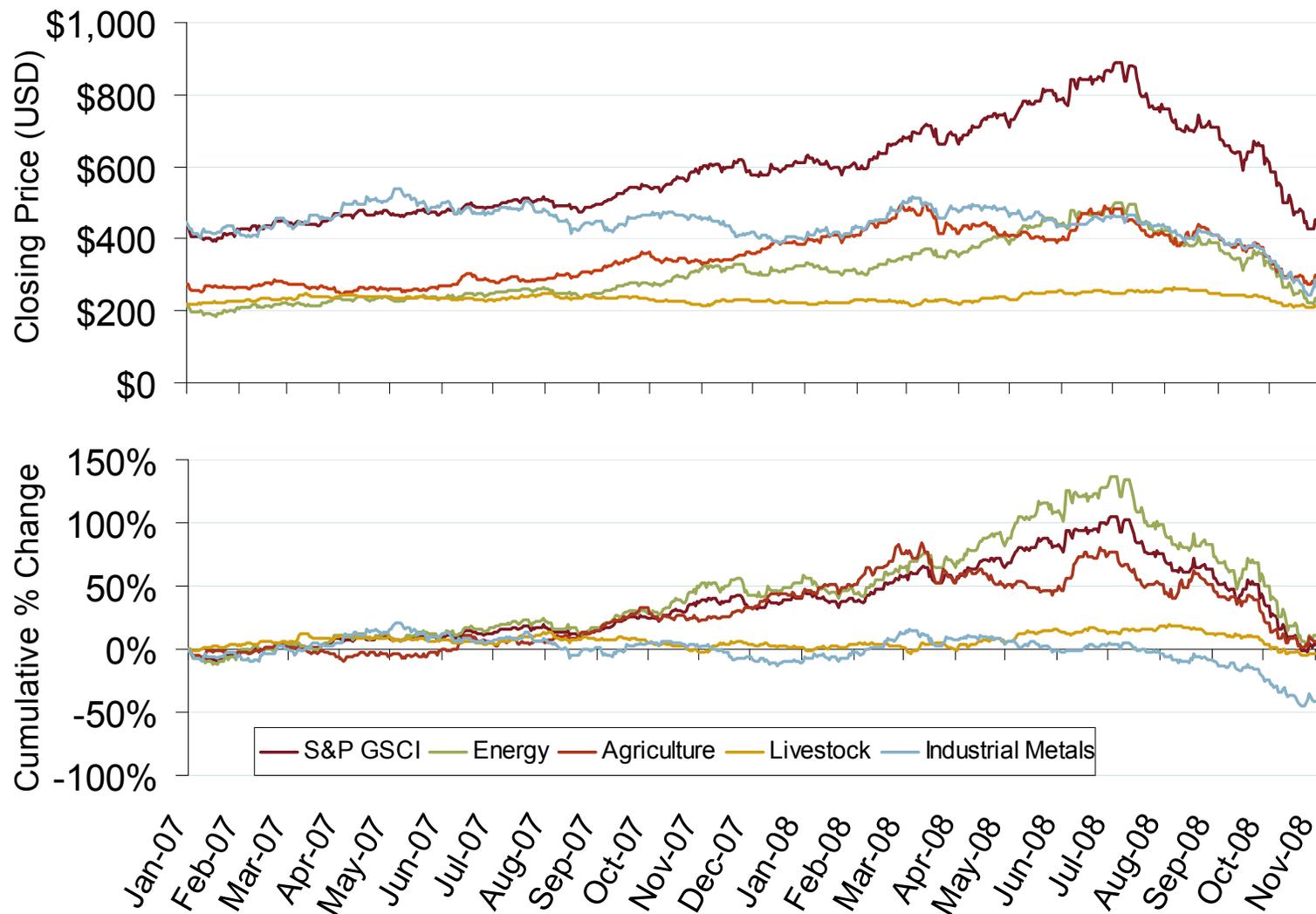
# Special Reports:

- **Winter 2008/2009 Energy Market Assessment**
- **Financial Markets Report**

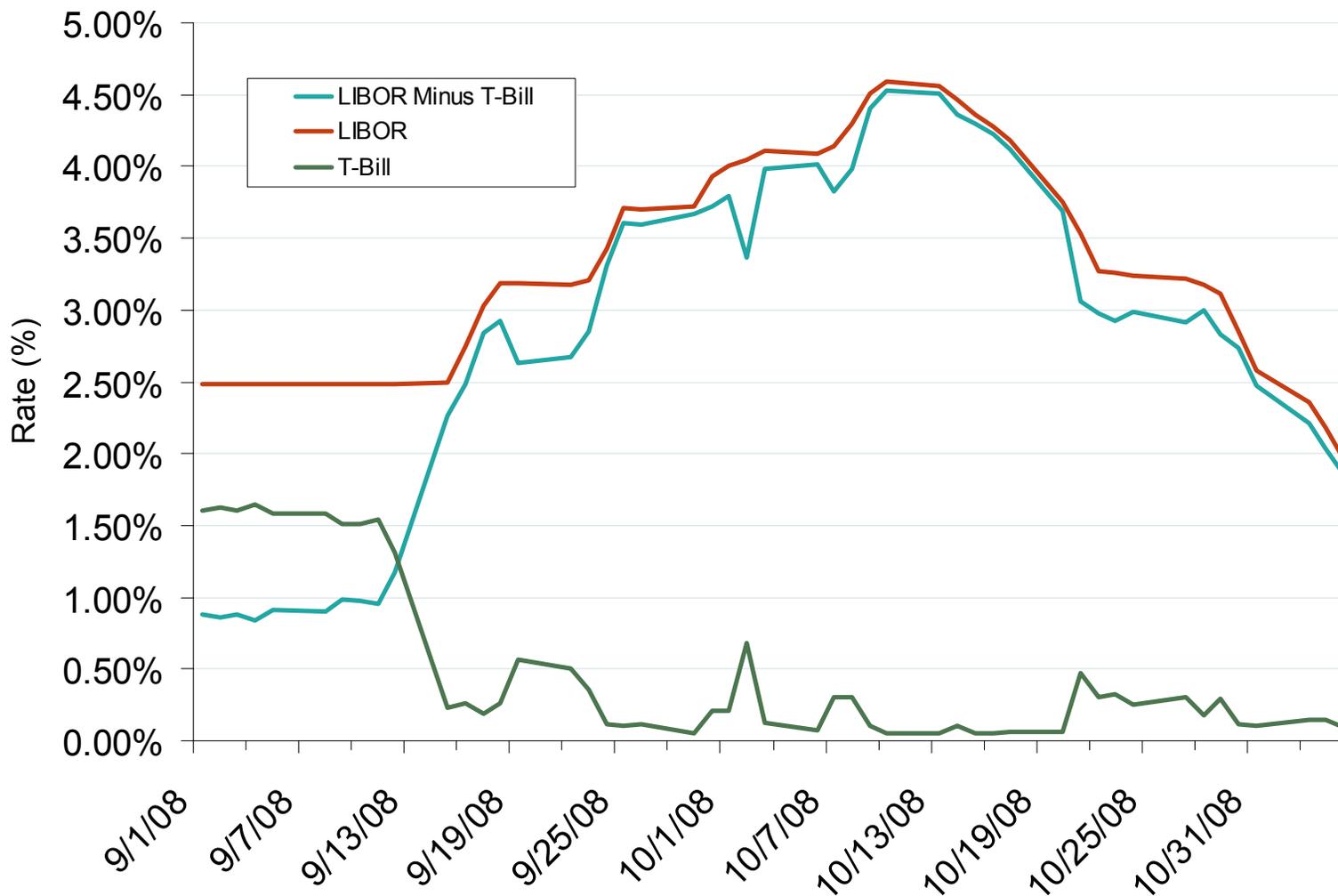


<http://www.ferc.gov/market-oversight/mkt-views/2008/10-16-08.pdf>

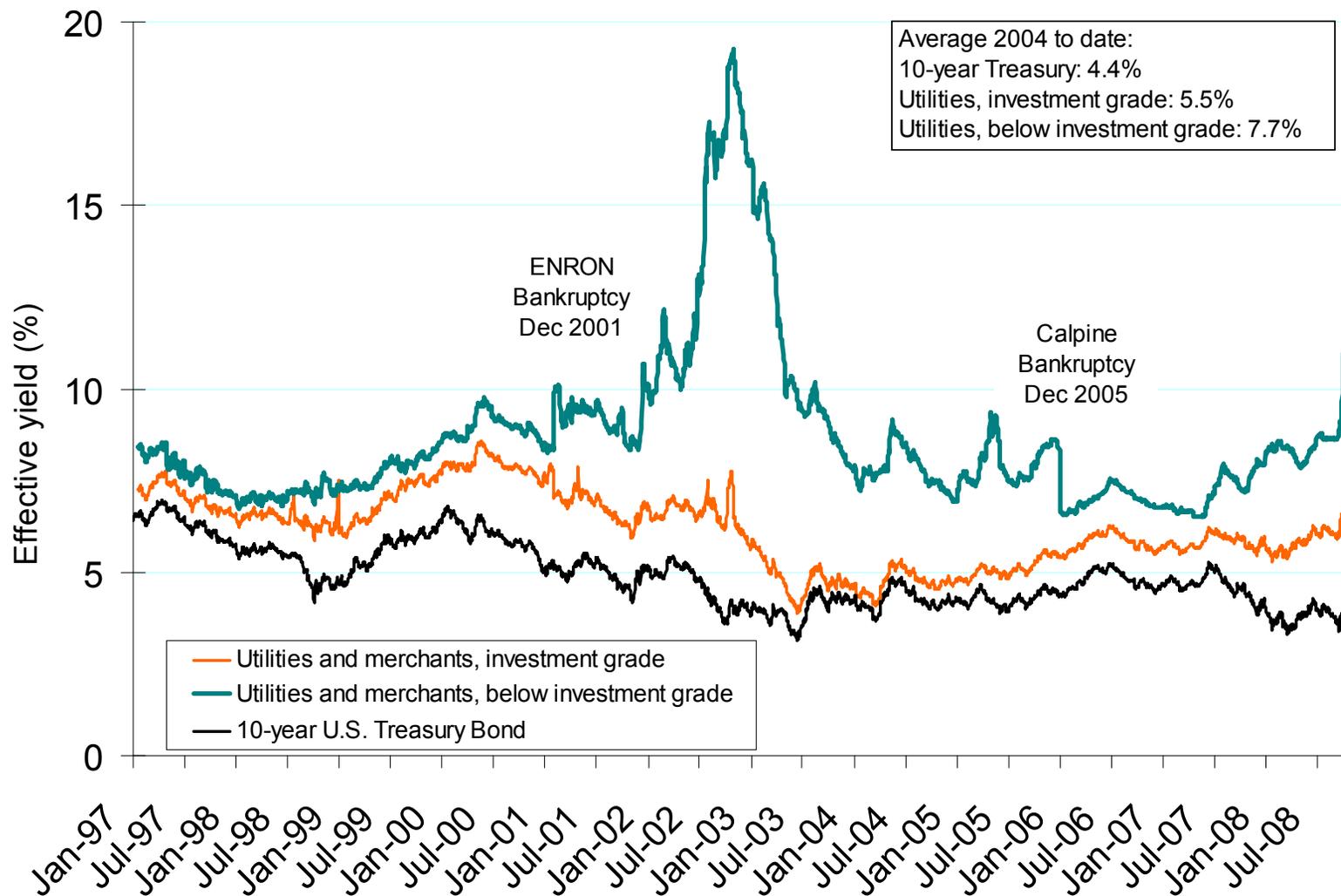
## S&P Goldman Sachs Commodity Index Official Closing Price



### One Month LIBOR and One Month US Treasury Bill Rates



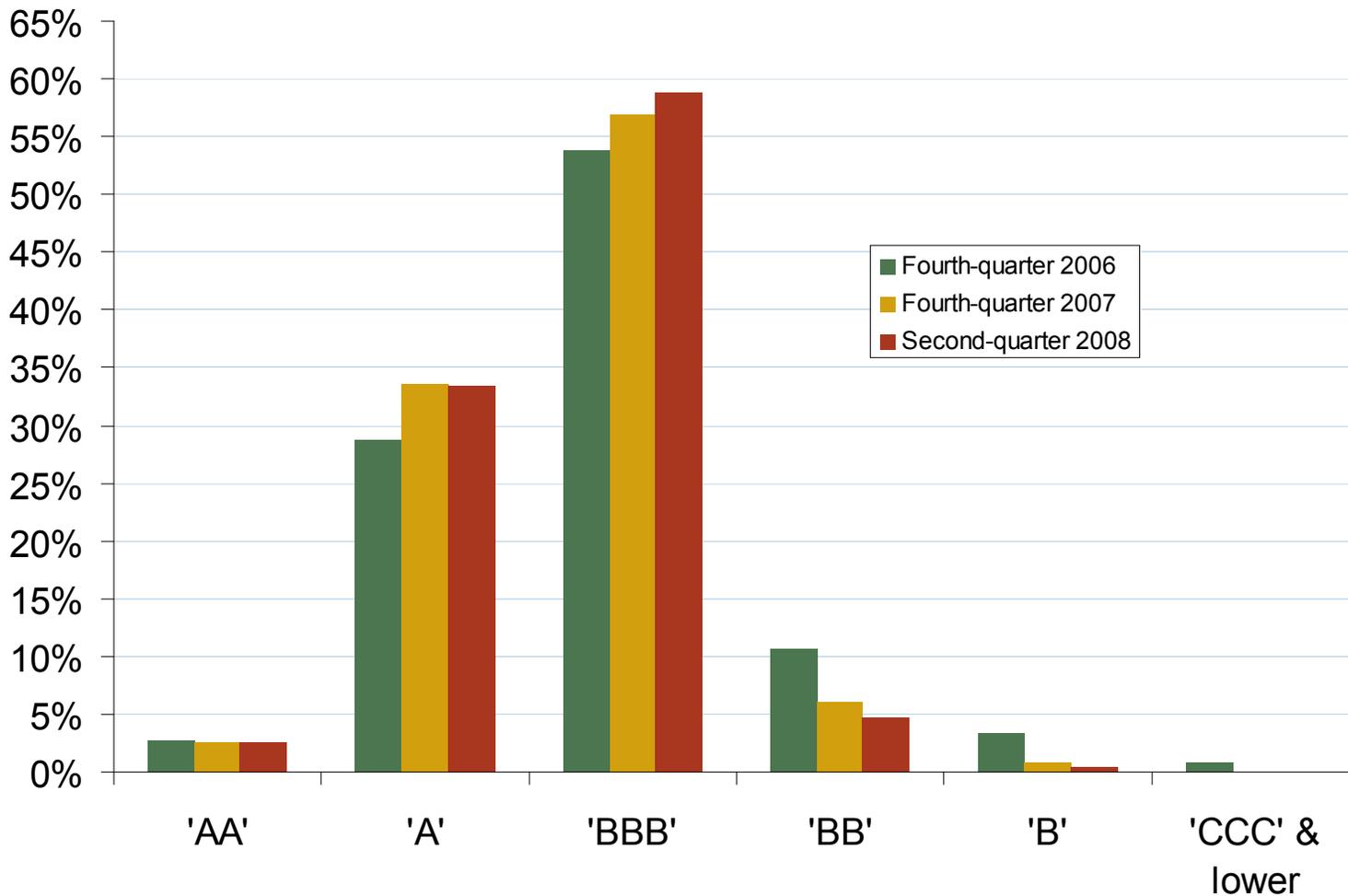
## Yields of Utilities, Merchants and Ten Year Treasury Bonds



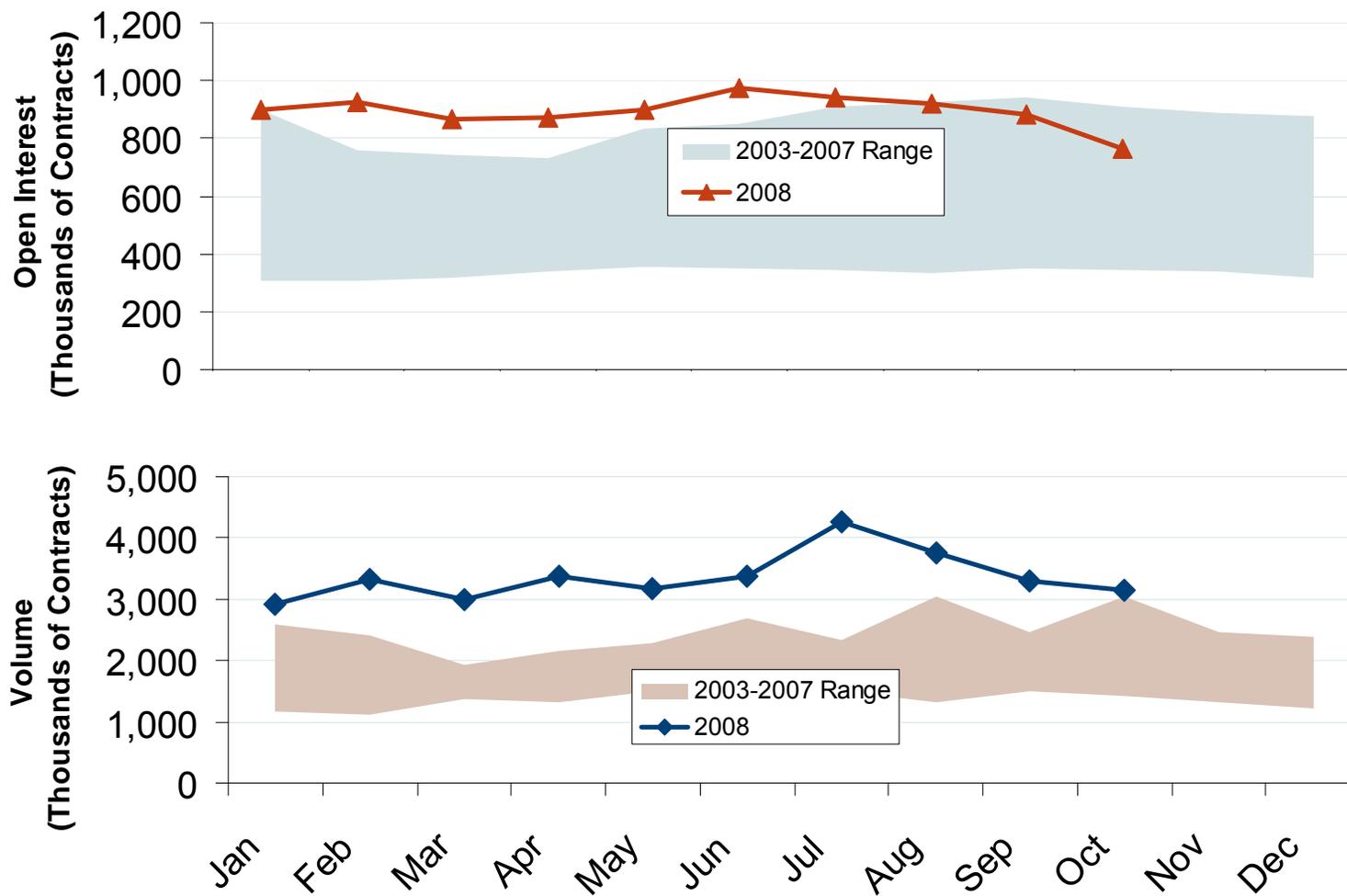
Source: Derived from Merrill Lynch Index U.S Corporates, Gas and Electric Utilities and Bloomberg data.  
 November 2008 Western Snapshot Report

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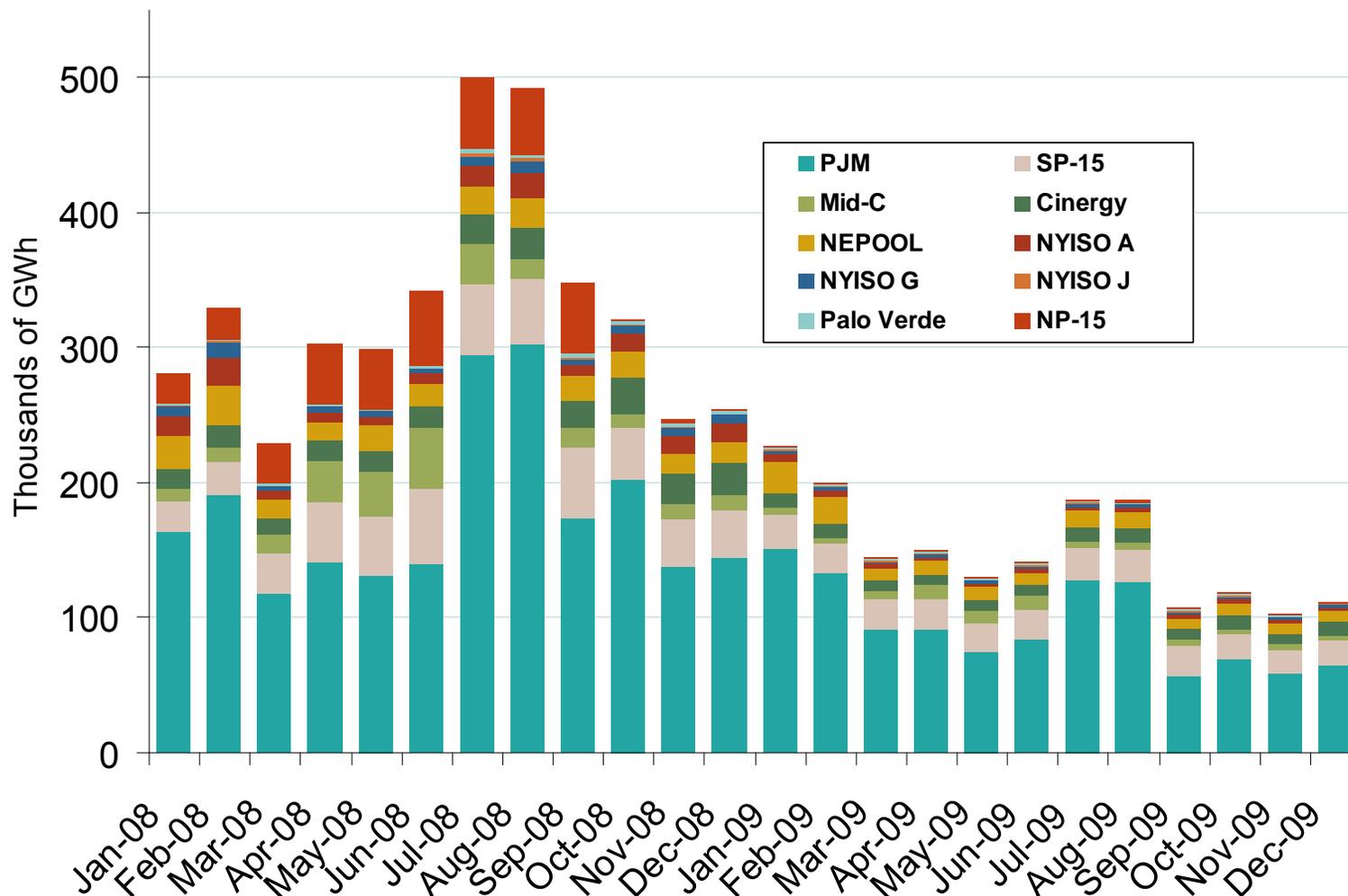
## U.S. Electric and Gas Utility Ratings Distribution



## NYMEX Natural Gas Futures Month-End Open Interest and Total Monthly Volume

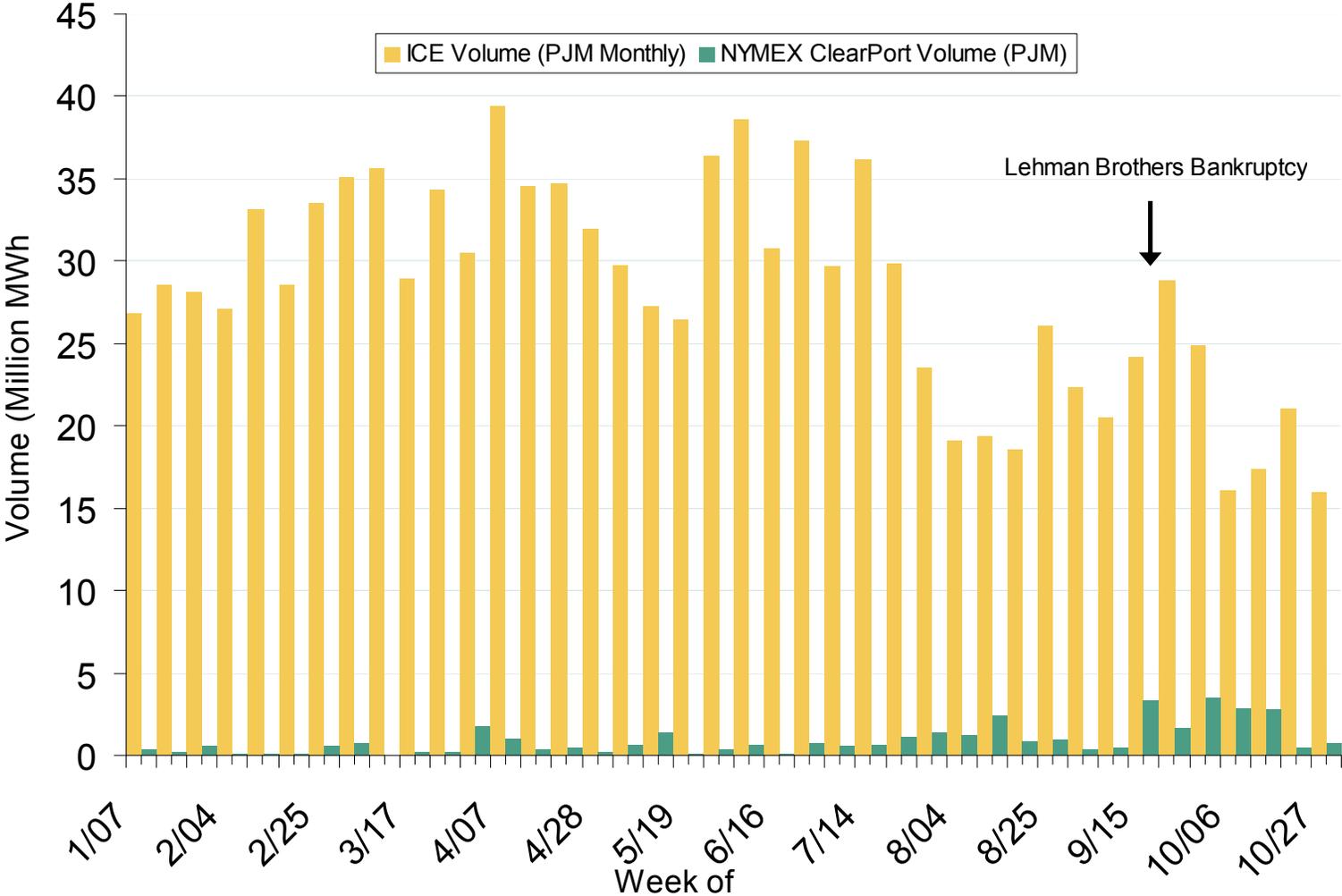


## Financial Trading on ICE by Contract Month



Source: Derived from ICE data. ICE on-peak swaps (financial) volume include monthly, dual monthly, quarterly, and calendar year contracts traded for each month.  
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# PJM Financial Trading Volumes on ICE and Nymex Monthly Contracts by Trade Week

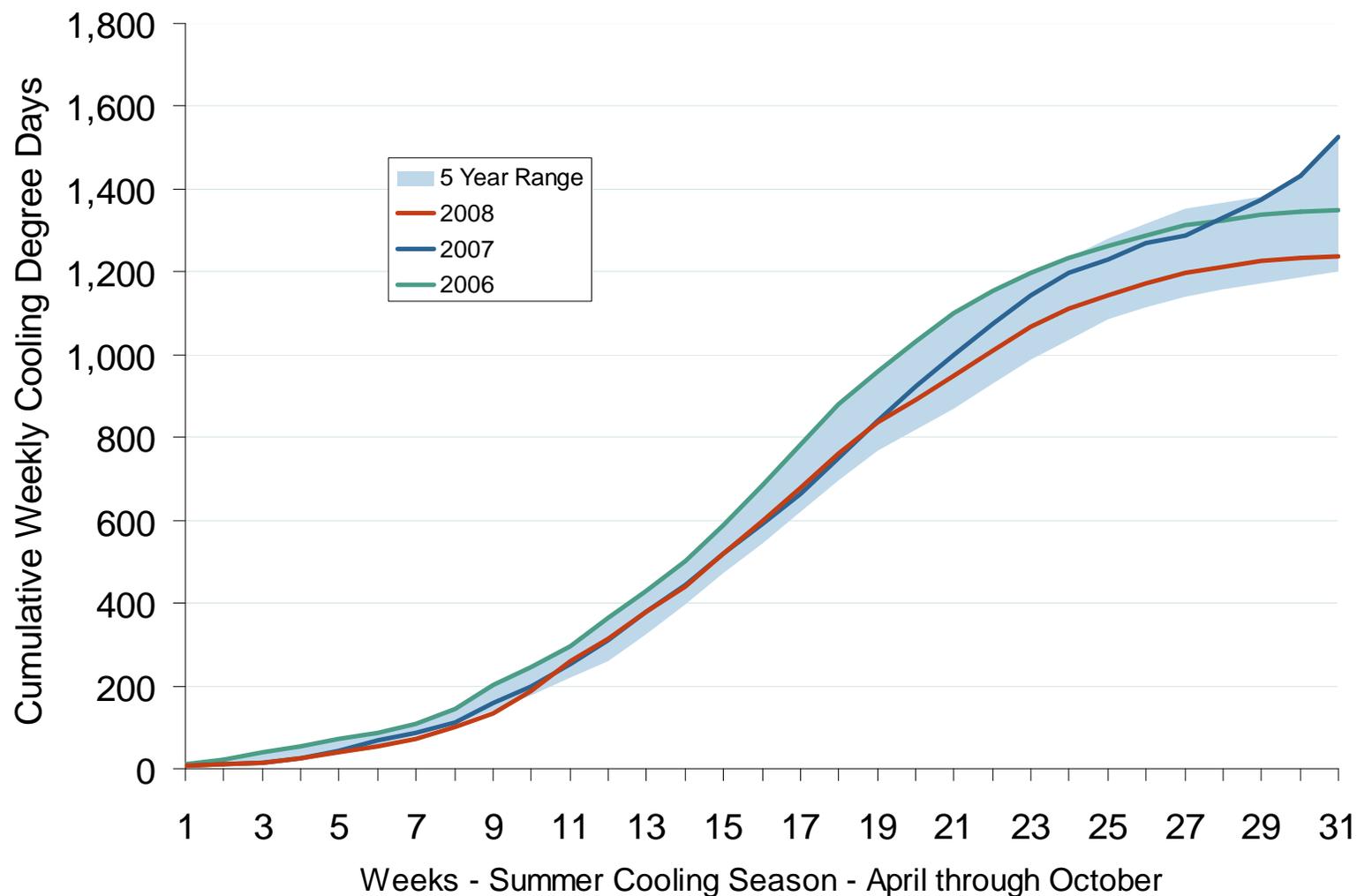


Source: Derived from ICE and NYMEX ClearPort data. Volumes are Weekly Totals of Month Long Term Products Only, Excluding Holiday Weeks and Off-Peak Hour Deliveries.  
November 2008 Western Snapshot Report



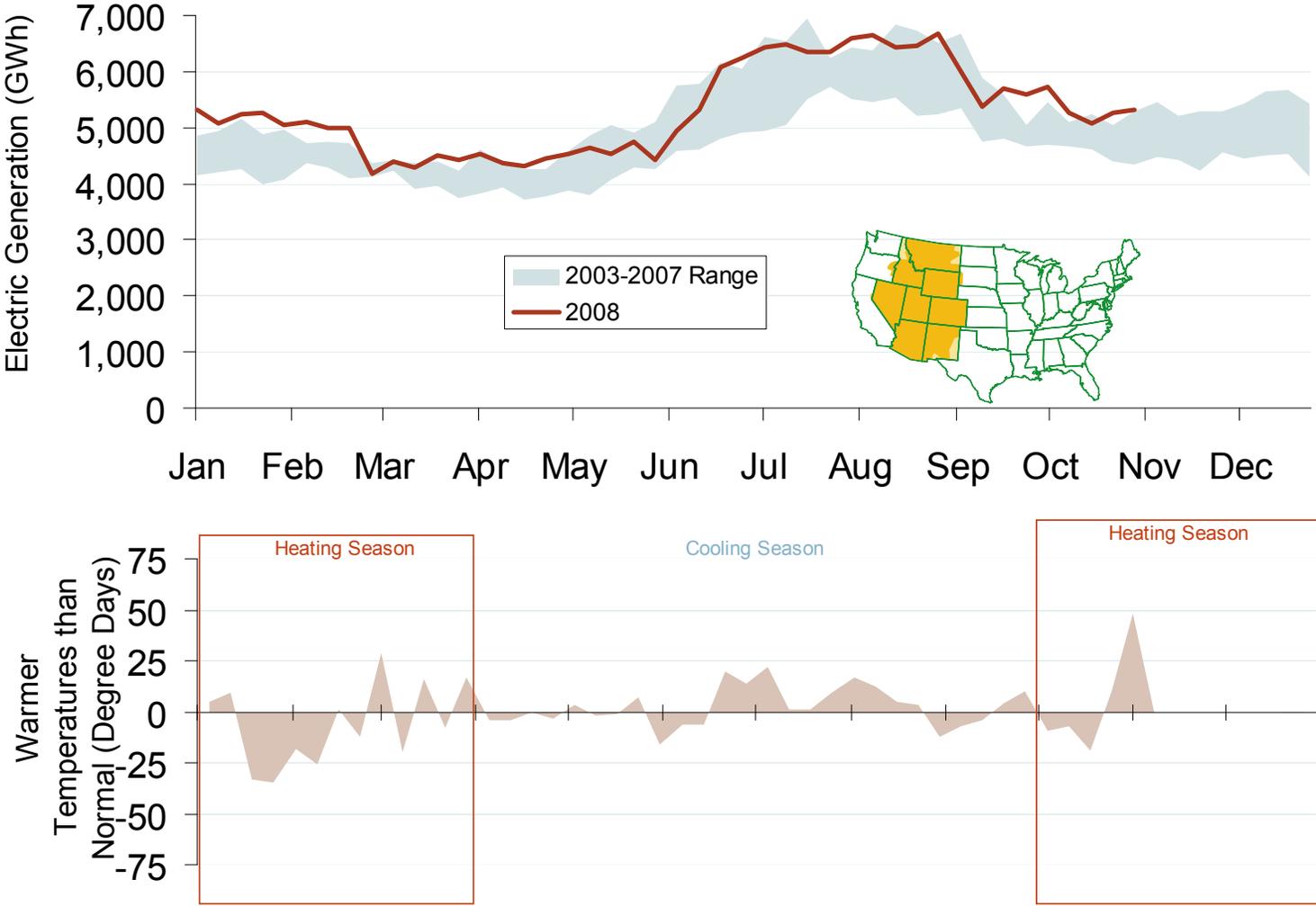
# Electricity Markets

## U. S. Summer Cumulative Cooling Degree Days



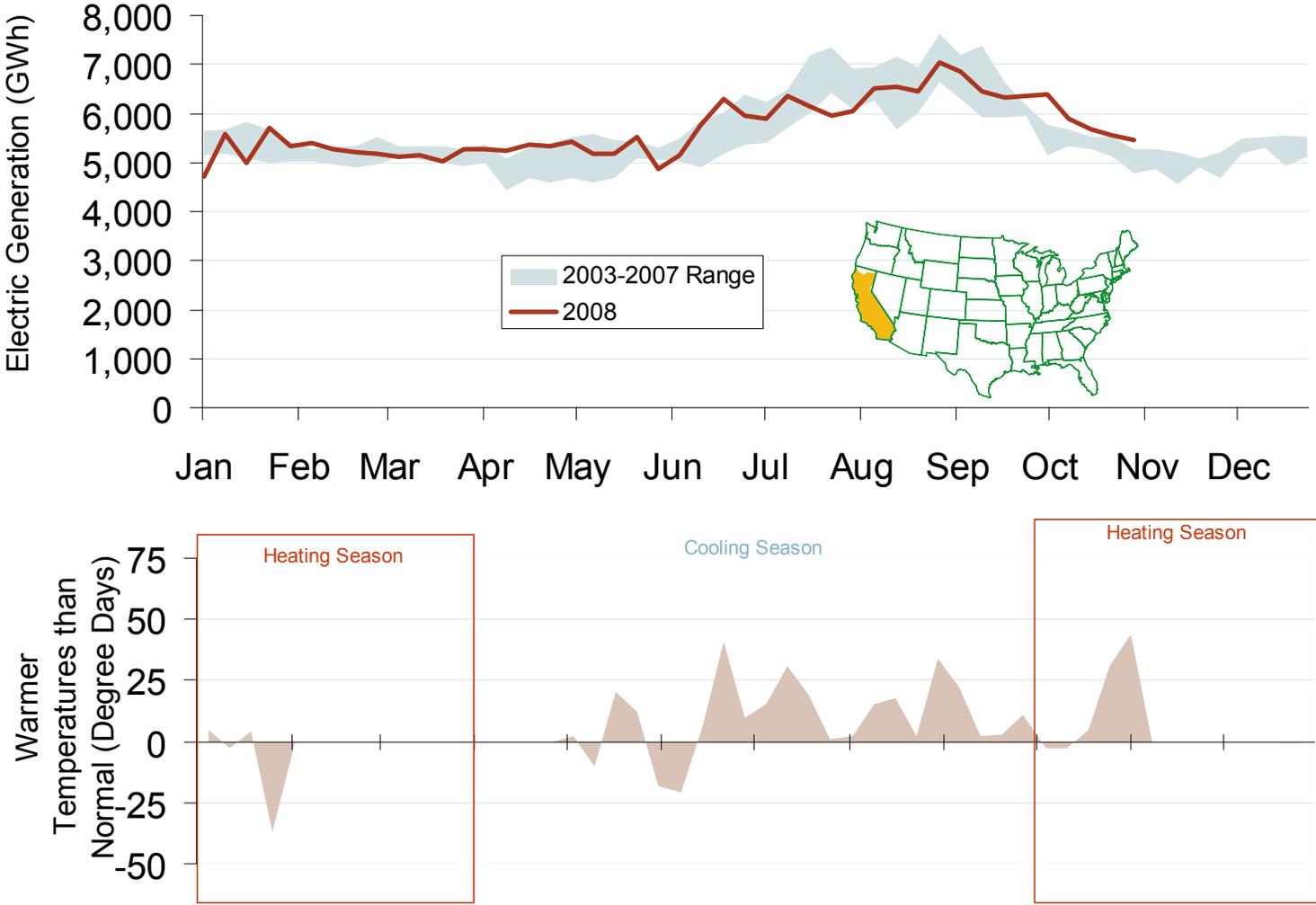
Source: Derived from NOAA data.

# Weekly Electric Generation Output and Temperatures Rocky Mountains Region



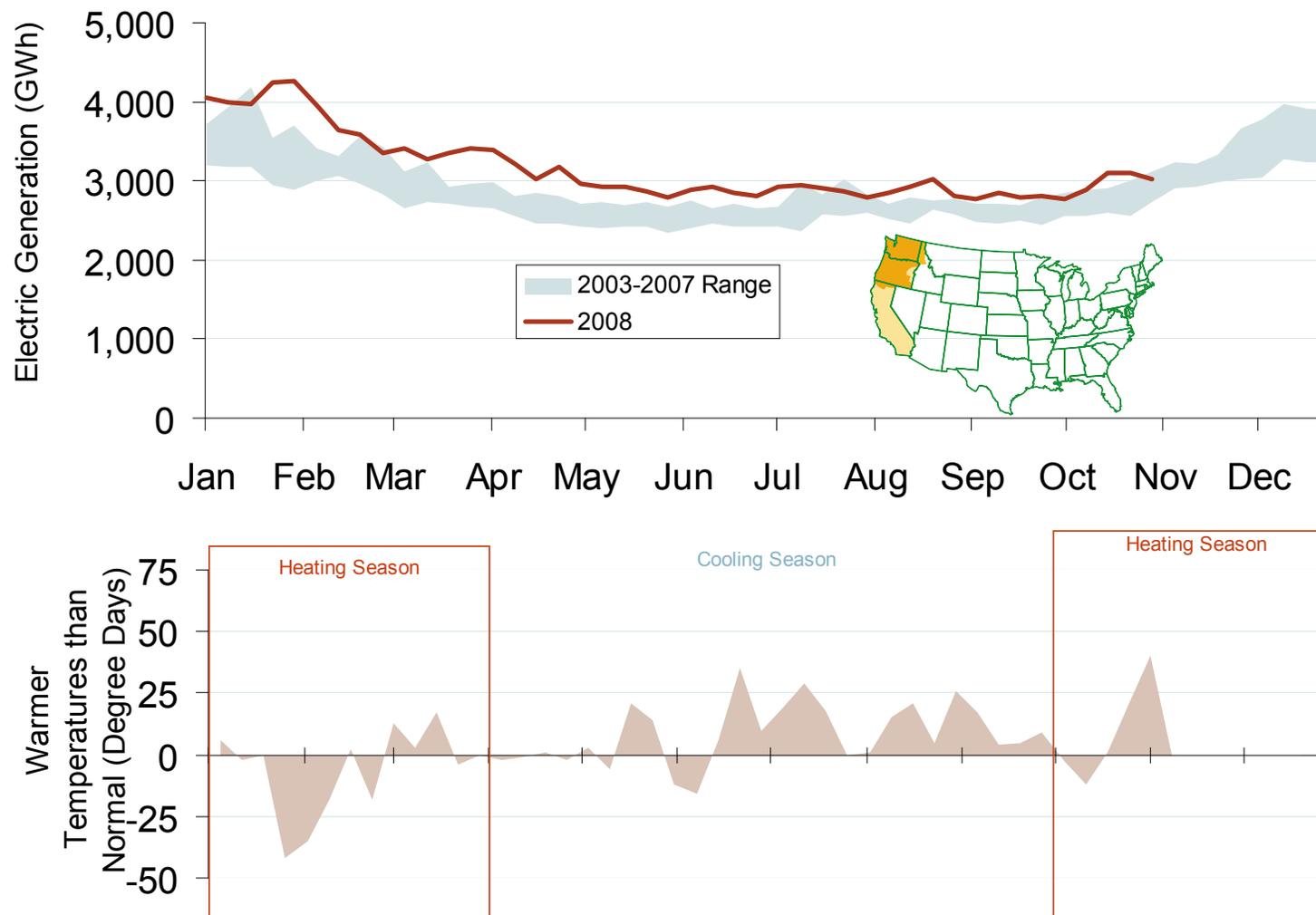
Source: Derived from *EEl* and *NOAA* data.  
November 2008 Western Snapshot Report

# Weekly Electric Generation Output and Temperatures California

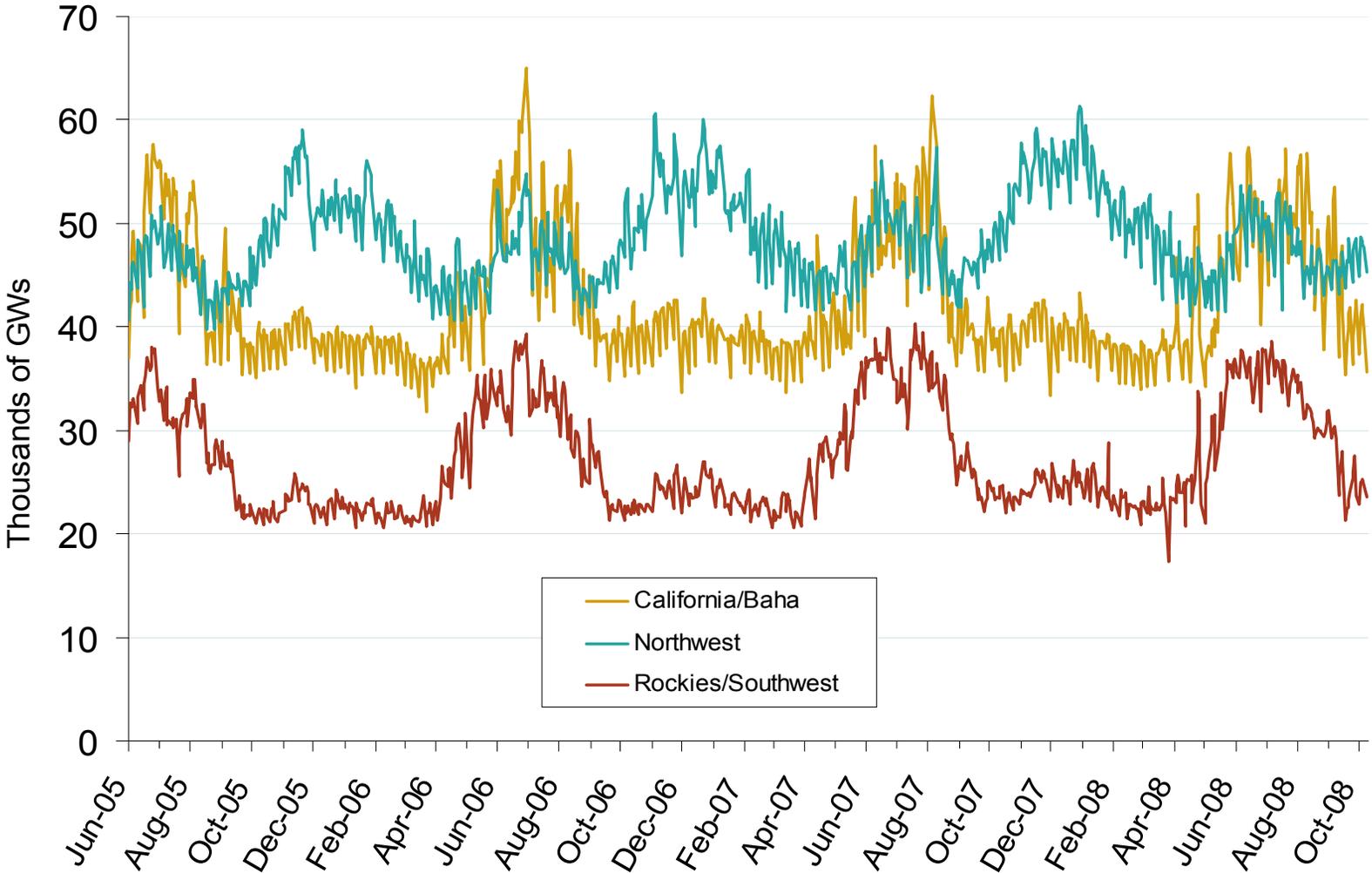


Source: Derived from *EEl* and *NOAA* data.  
November 2008 Western Snapshot Report

# Weekly Electric Generation Output and Temperatures Pacific Northwest Region

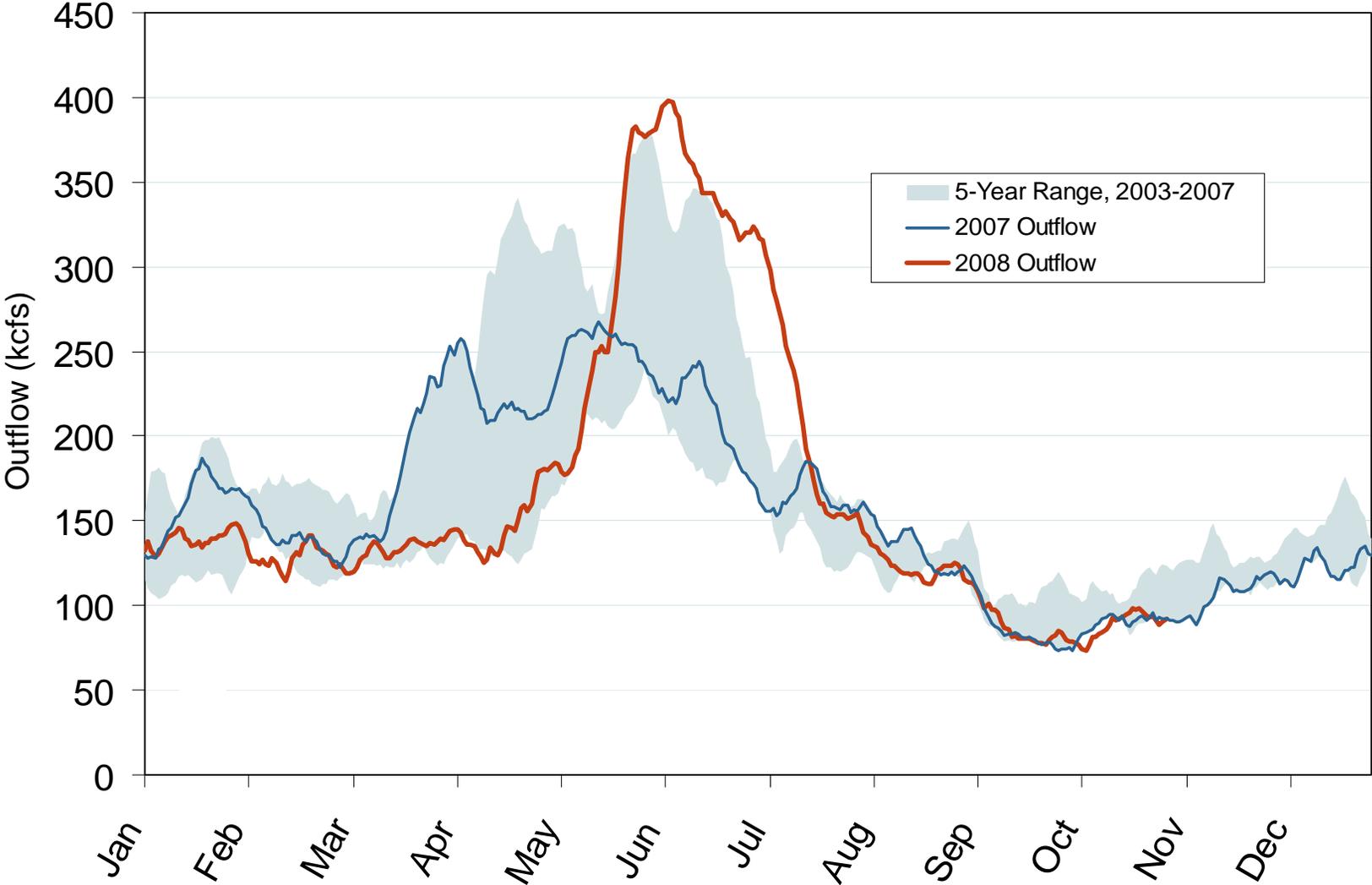


# Western Daily Actual Peak Demand



Source: Derived from WECC Daily Report data available at <http://wecc.biz>. Data shown is generally Sunday through Thursday due to limitations of daily reports.

# Stream Flow at The Dalles Dam



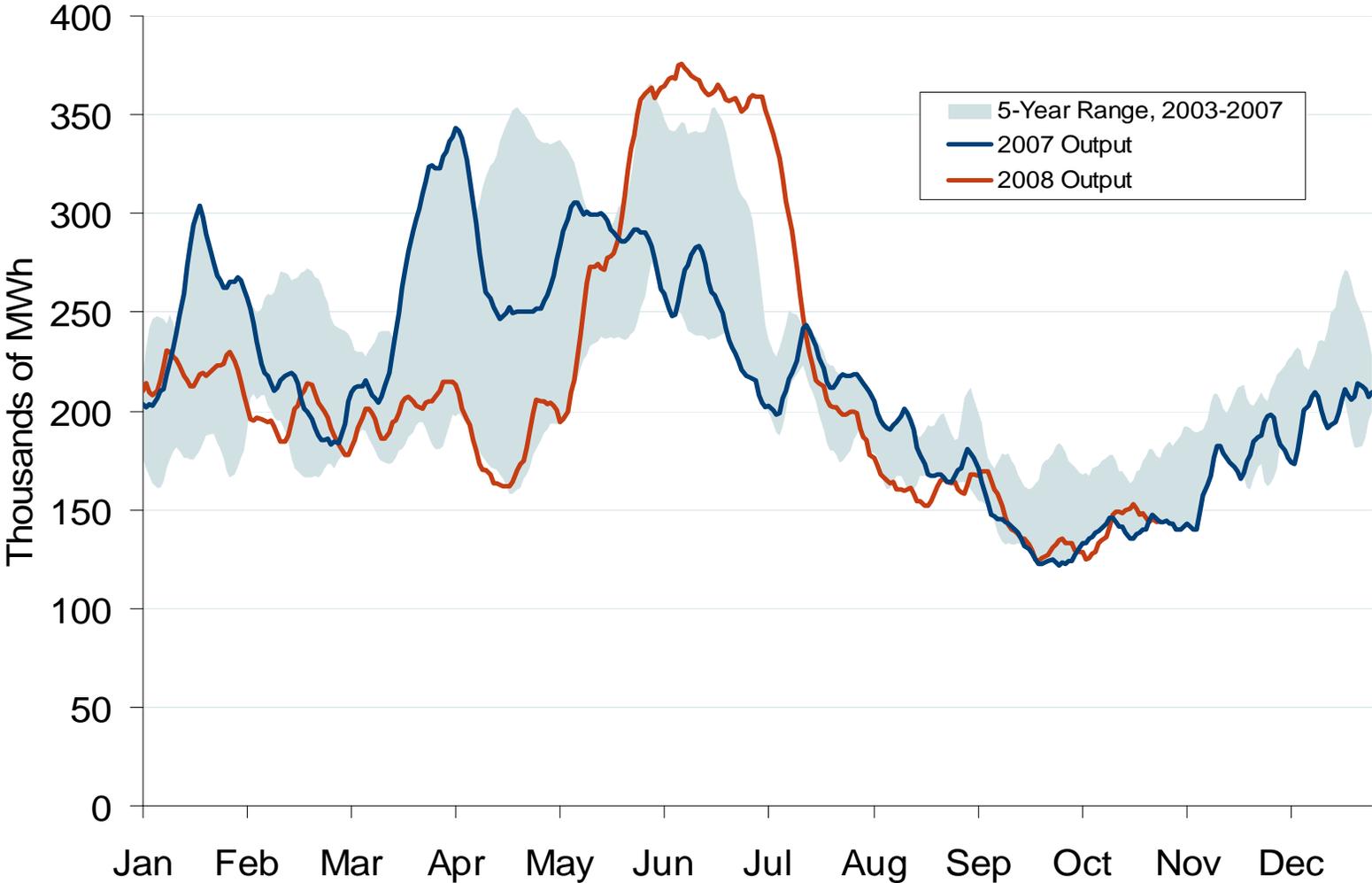
Source: Derived from USACE data.

Trend lines are 7-day moving averages.

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# Pacific Northwest Hydroelectric Production



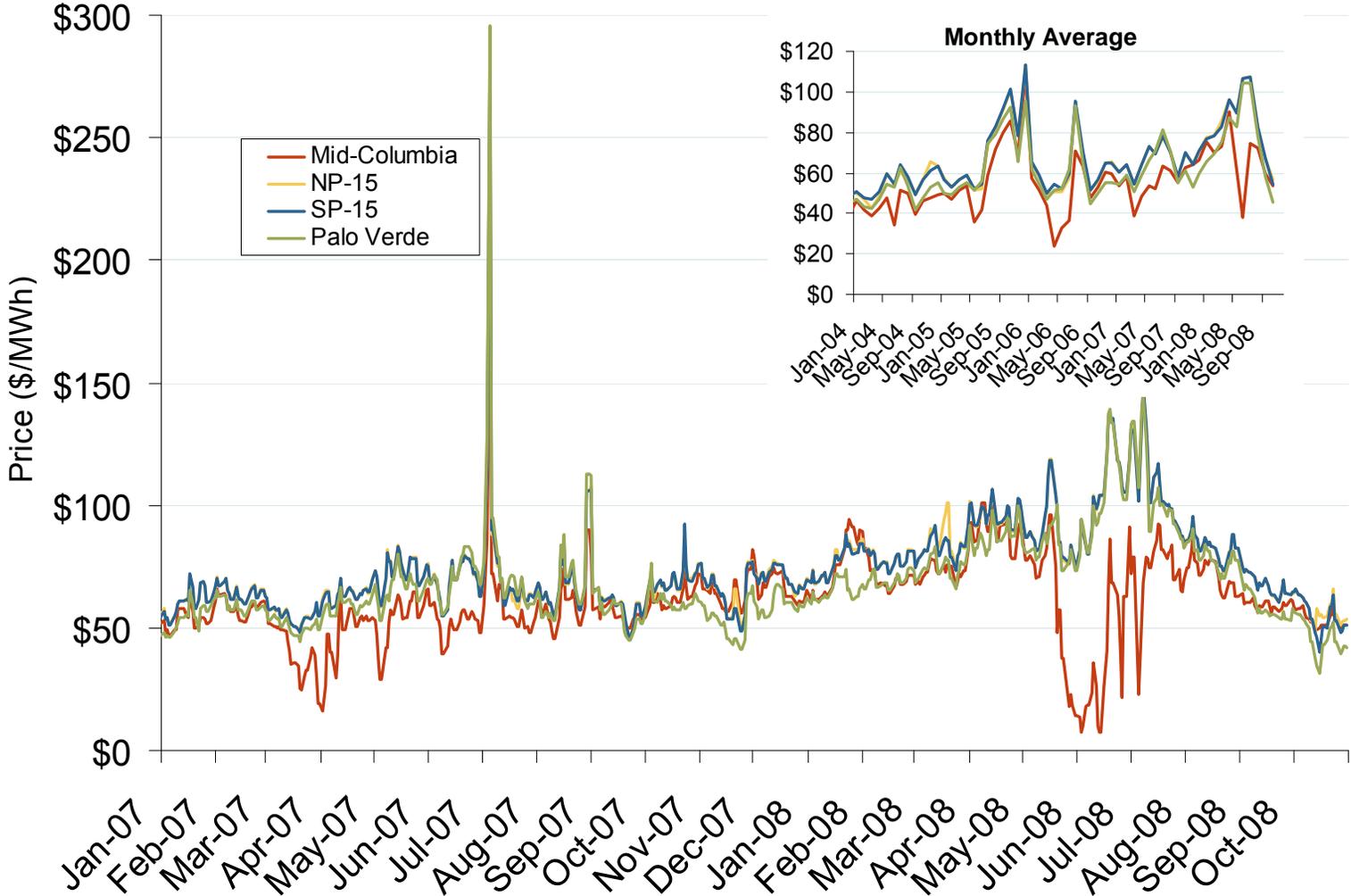
Source: Derived from USACE data reflecting the output of the 24 largest facilities.

Trend lines are 7-day moving averages.

November 2008 Western Snapshot Report

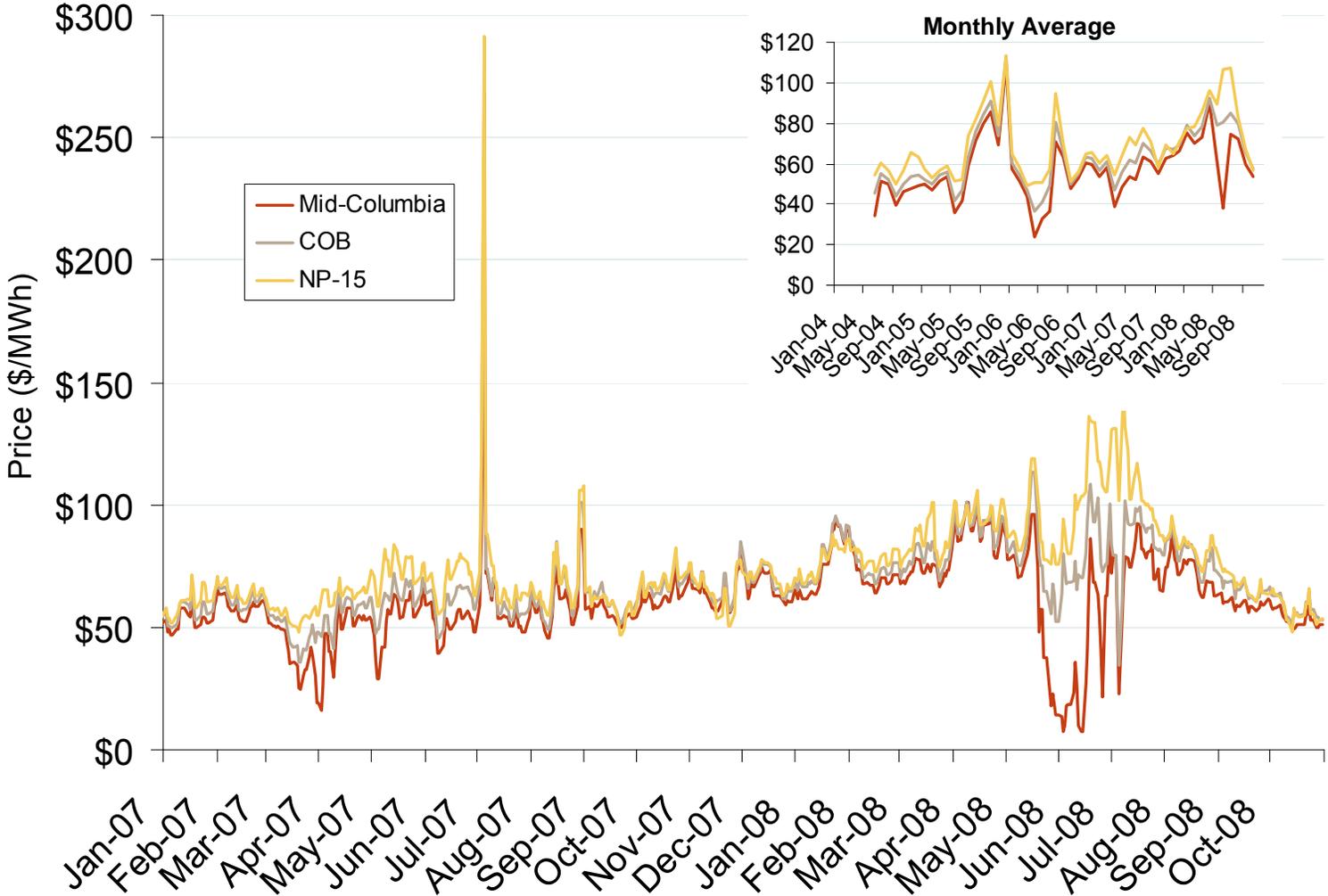
Updated November 7, 2008

# Western Daily Bilateral Day-Ahead On-Peak Prices



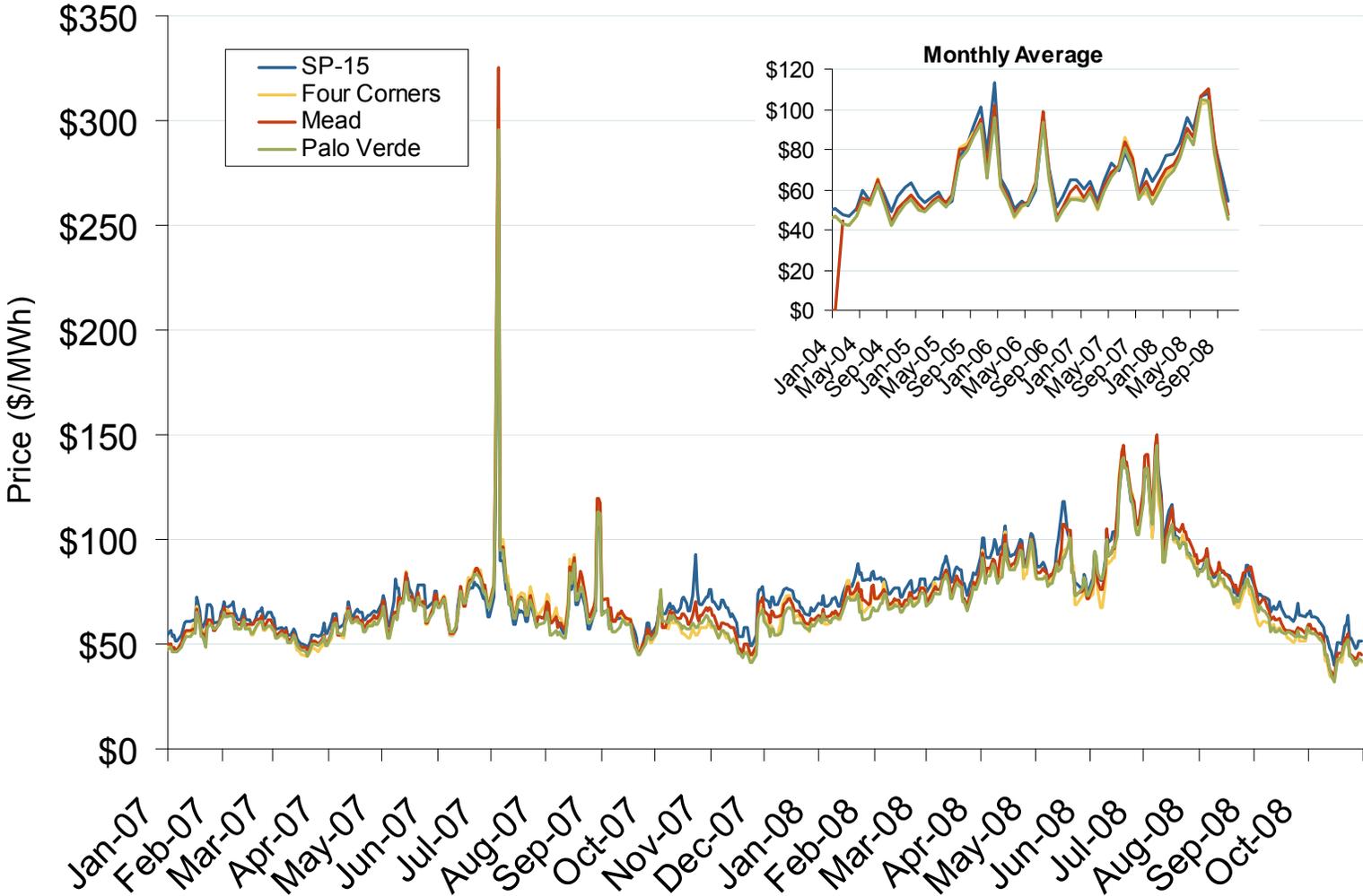
Source: Derived from *Platts* data.  
November 2008 Western Snapshot Report

# Northwestern Daily Bilateral Day-Ahead On-Peak Prices



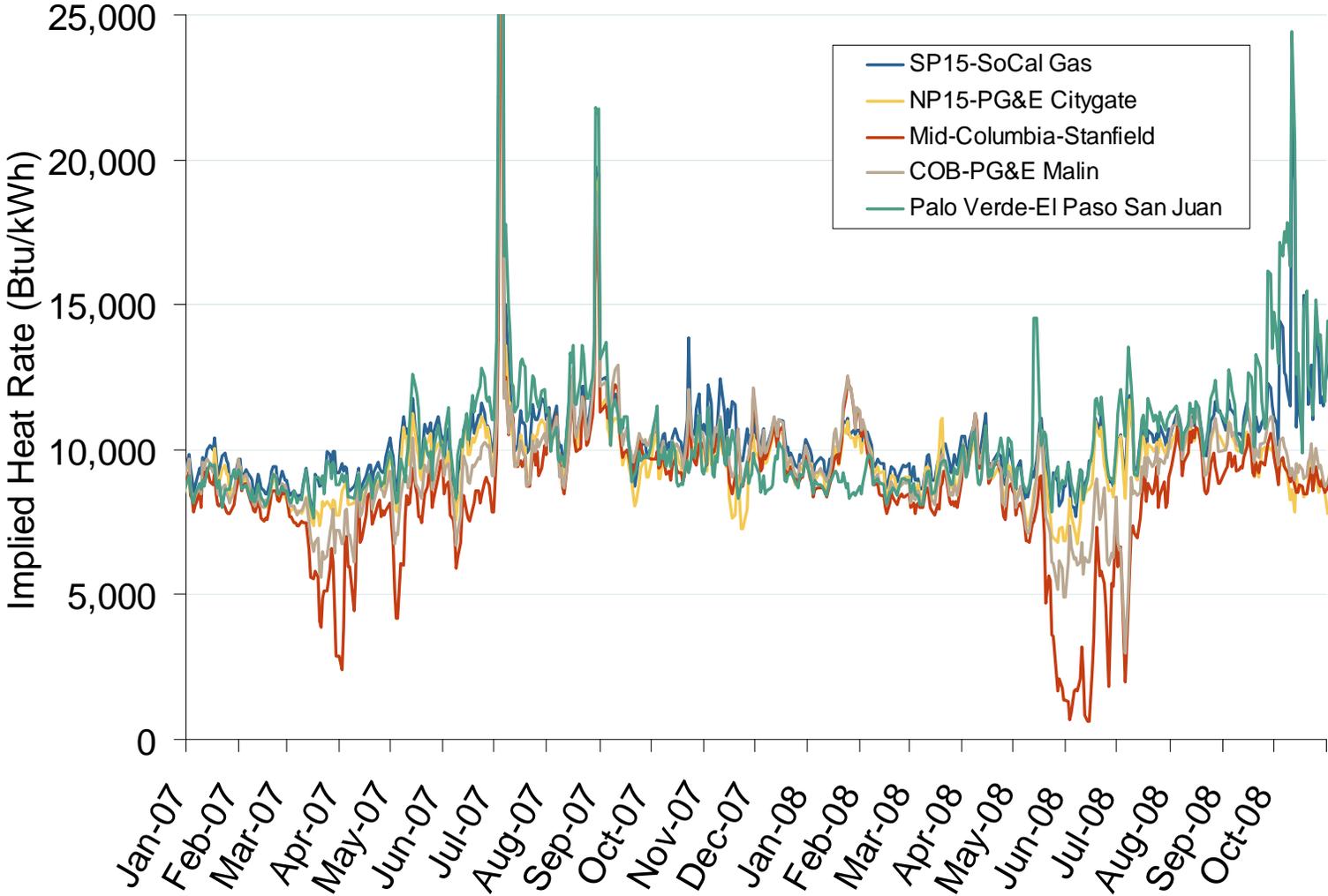
Source: Derived from *Platts* data.  
November 2008 Western Snapshot Report

# Southwestern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.  
November 2008 Western Snapshot Report

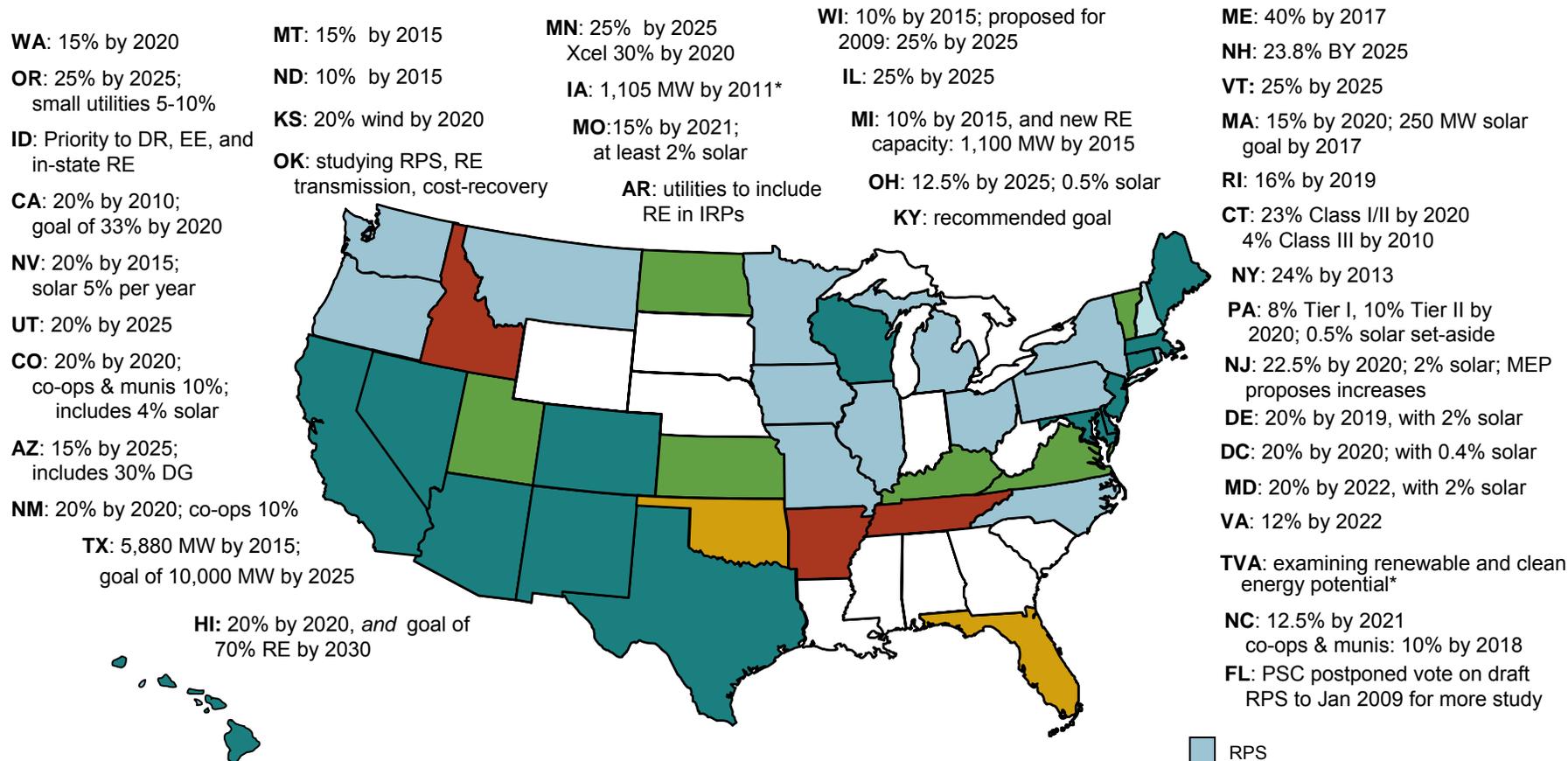
# Implied Heat Rates at Western Trading Points



Source: Derived from *Platts* data  
November 2008 Western Snapshot Report

# Renewable Energy Portfolio Standards (RPS)

## 28 states plus D.C. have an RPS



Updates at: <http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-rps.pdf>

**Notes:** Alaska has no RPS; \* Iowa has a goal of 1,000 MW of wind by 2010; TVA’s “Renewable Energy and Clean Energy Assessment” is from the Public Power Authority; it is not a state policy.

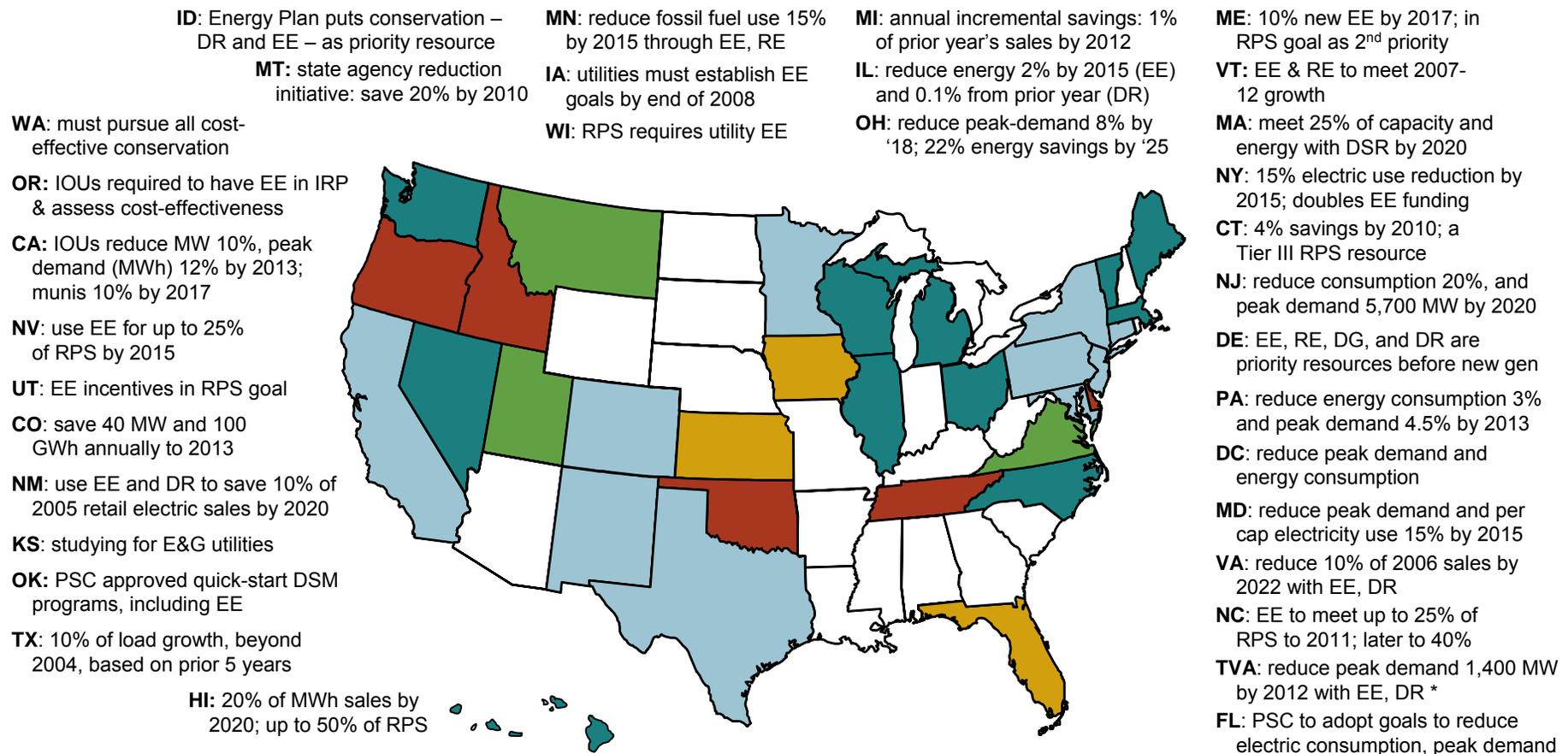
**Abbreviations:** DG: distributed generation; DR: demand response; EE: energy efficiency; IRP: integrated resource plan.

**Sources:** Derived from data in: EEI, EIA, LBNL, PUCs, State legislative tracking services, Database of State Incentives for Renewables and Efficiency, and the Union of Concerned Scientists.

- RPS
- Strengthened/ amended RPS
- Voluntary standards or goals
- Proposed RPS or studying RPS
- Other renewable energy goal

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## Energy Efficiency Resource Standards (EERS)



Updates at: <http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-eeps.pdf>

\* TVA's "EE and DR Plan" is from the Public Power Authority, and is not a state policy.

**Abbreviations:** CHP – Combined heat & power; DG – distributed generation; DR - demand response; DSM - demand side management; DSR – demand-side resources; EE - energy efficiency; E&G: electric and gas utilities; IRP – integrated resource plan; RPS: Renewable Portfolio Standard

**Sources:** ACEEE, EPA, Regulatory Assistance Project, Union of Concerned Scientists, State regulatory and legislative sites, trade press

- EERS by regulation or law (stand-alone)
- Energy efficiency part of an RPS law, rule, or goal
- Voluntary standards (in or out of RPS)
- Energy efficiency goal proposed / being studied
- Other energy efficiency or demand-side rule or goal

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## Collaborative Greenhouse Gas (GHG) Programs

### Collaborative Regional GHG Programs:

- Three North American groups with goals to lower regional GHG emissions were initiated by state Governors.
- 32 U.S. states, D.C., eight Canadian provinces, and six Mexican states are Participants or Observers.
- Observer jurisdictions do not commit to group GHG reduction goals, but participate in proceedings should they opt to join later.

### Western Climate Initiative (WCI):

- Created February 2007
- Partners: 7 states, 4 provinces; Observers: 5 states, 1 province\*
- WCI announced its design for a market-based, *multi-sector* cap-and-trade program, Sept 2008:
  - 15% CO<sub>2</sub> reduction below 2005 levels by 2020
  - Phase I to take effect Jan 2012

### Midwest Greenhouse Gas Reduction Accord:

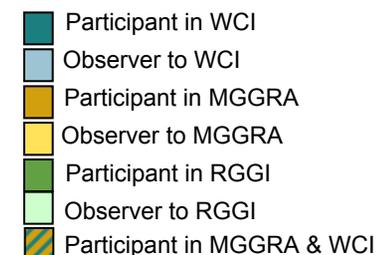
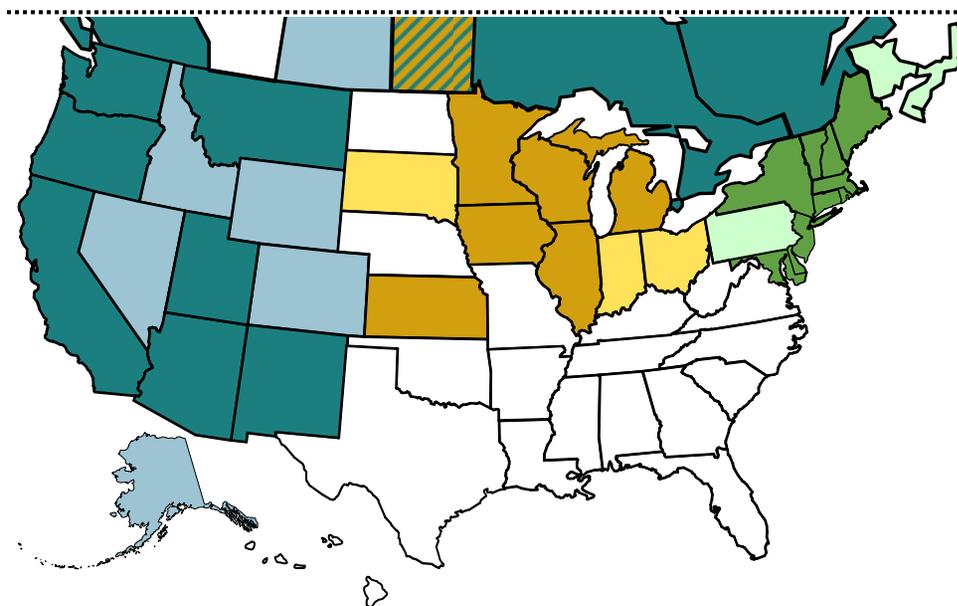
- Established November 2007
- Participants: 6 states, 1 province; 3 Observer states, 1 province
- *Preliminary* GHG policy recommendation: 15 – 25% reductions by 2020, 60 – 80% by 2050

### Regional Greenhouse Gas Initiative (RGGI):

- Takes effect Jan 2009
- 10 Participant states; Observers: 1 state, D.C., 3 provinces.
- Market-based cap-and-trade effort to reduce *power-sector* CO<sub>2</sub> emissions.
- 10% CO<sub>2</sub> reduction by 2018 covers over 200 plants
- 188 million allowances to be sold in 6 auctions

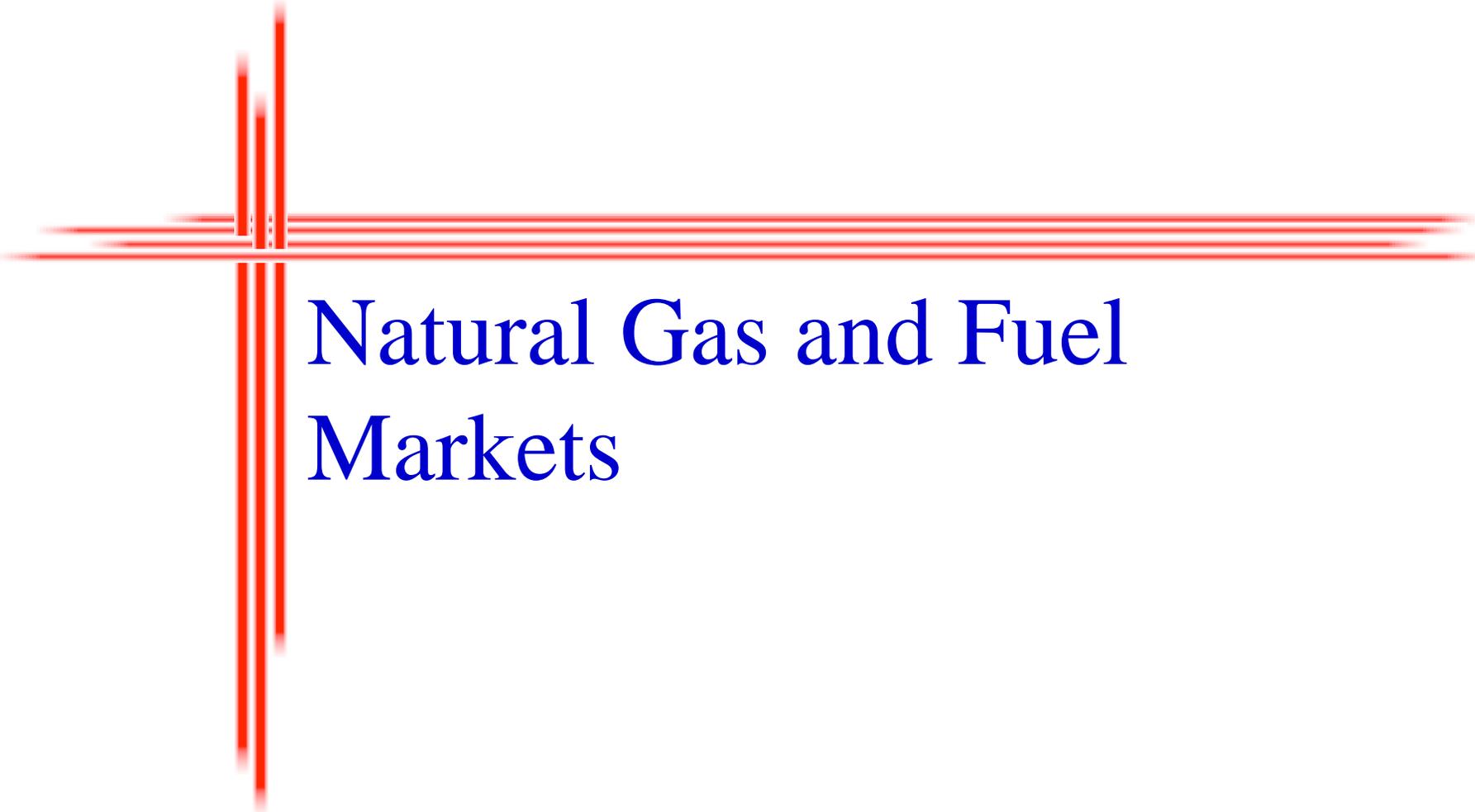
#### Auctions:

- 1. 9/25/08:** 12.5 million allowances cleared at \$3.07/allowance, raising \$38.5 million.
  - 6 states participated: CT, MA, ME, MD, RI, VT; these 6 will offer 1/6 of allowances at next 5 auctions
- 2. 12/17/08:** first 6 states plus NY, NJ, NH, DE to participate
  - 31.5 million allowances
- 3 to 6:** All ten states on same percent basis as prior auctions.
  - 2009 dates: 3/18, 6/17, 9/16, 12/16



Updates at: <http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-ghg.pdf>

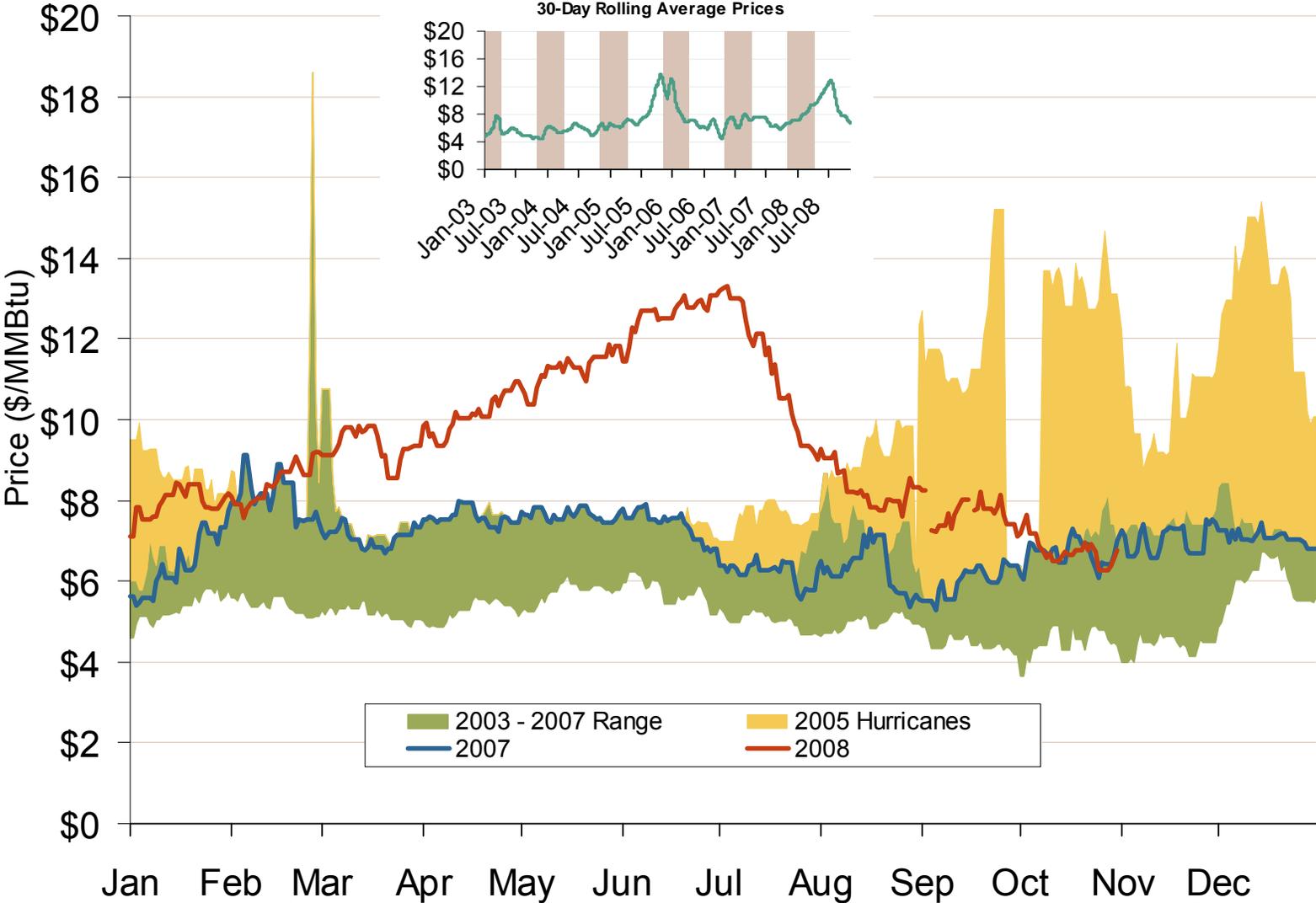
Notes: Kansas is a MGGRA participant and WCI observer. Ontario is a Partner to WCI and MGGRA Observer.  
Sources: Regional initiatives: [www.rggi.org](http://www.rggi.org), [www.midwesternaccord.org](http://www.midwesternaccord.org), [www.westernclimateinitiative.org](http://www.westernclimateinitiative.org), trade press, Pew Center.



# Natural Gas and Fuel Markets

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

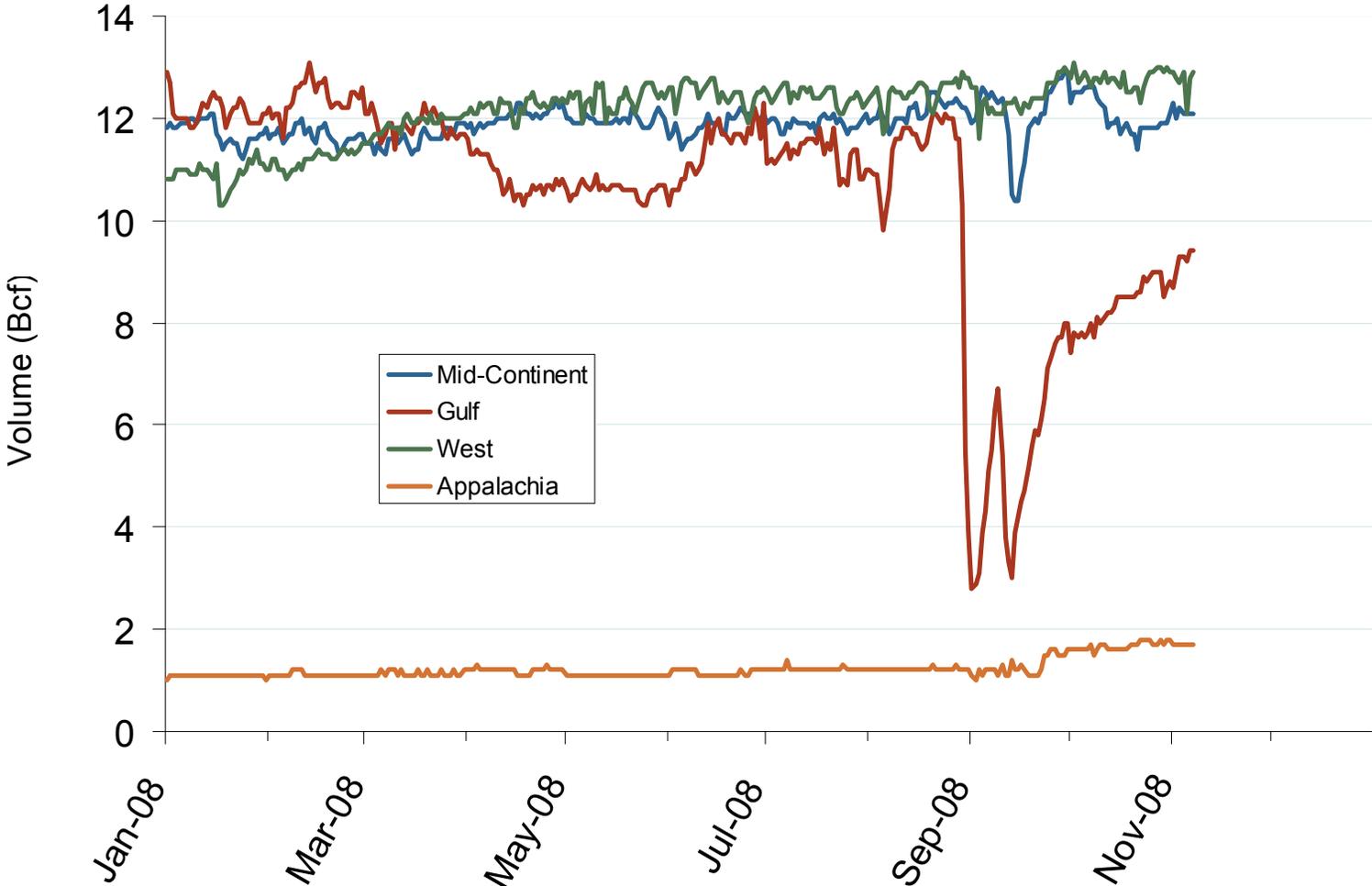
# Henry Hub Natural Gas Daily Spot Prices 2007, 2008 and 2003-2007 Year Range



Source: Derived from *Platts* data.  
November 2008 Western Snapshot Report

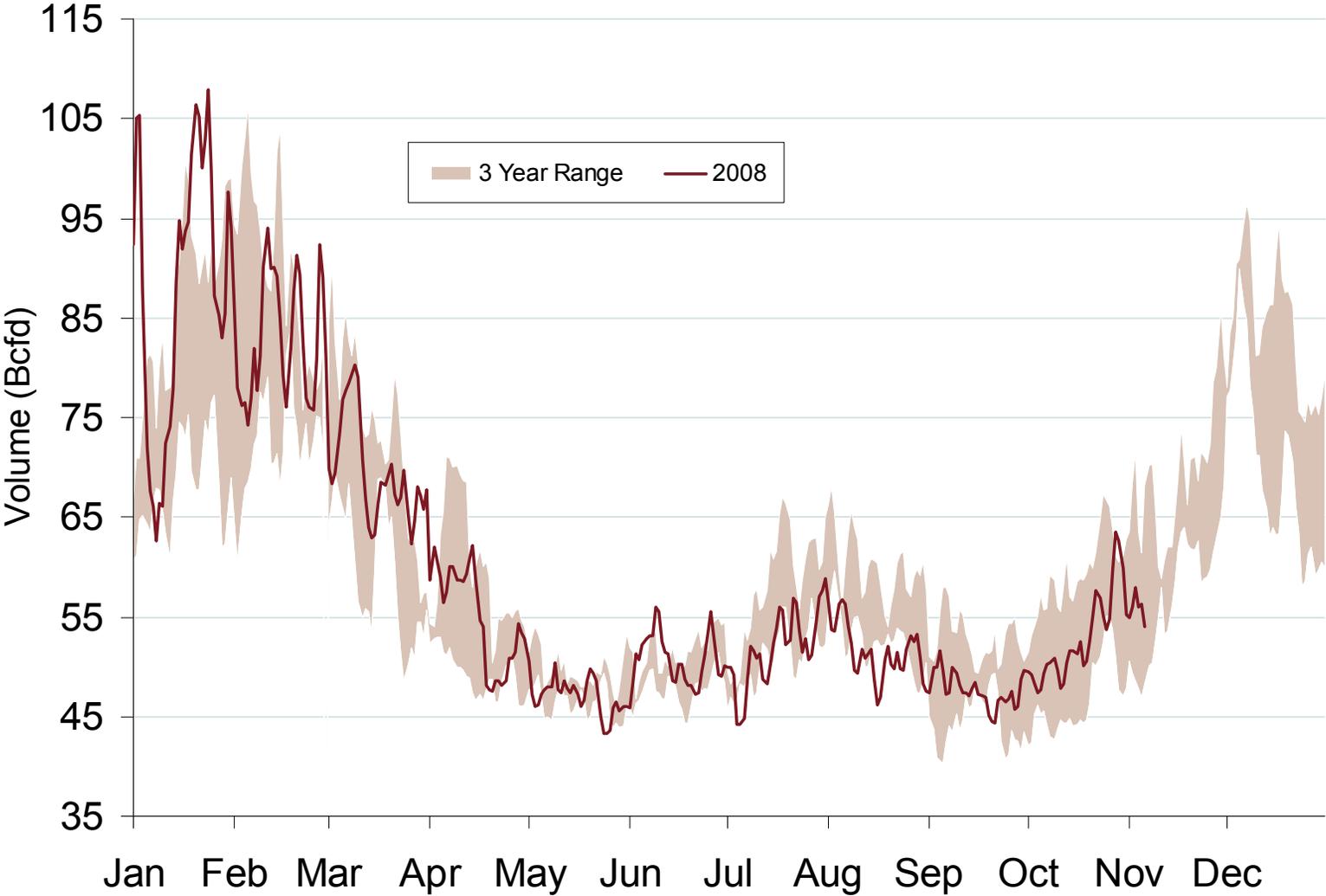
Updated November 7, 2008

# Regional Natural Gas Production for 2008



Source: Derived from *Bentek* data.  
November 2008 Western Snapshot Report

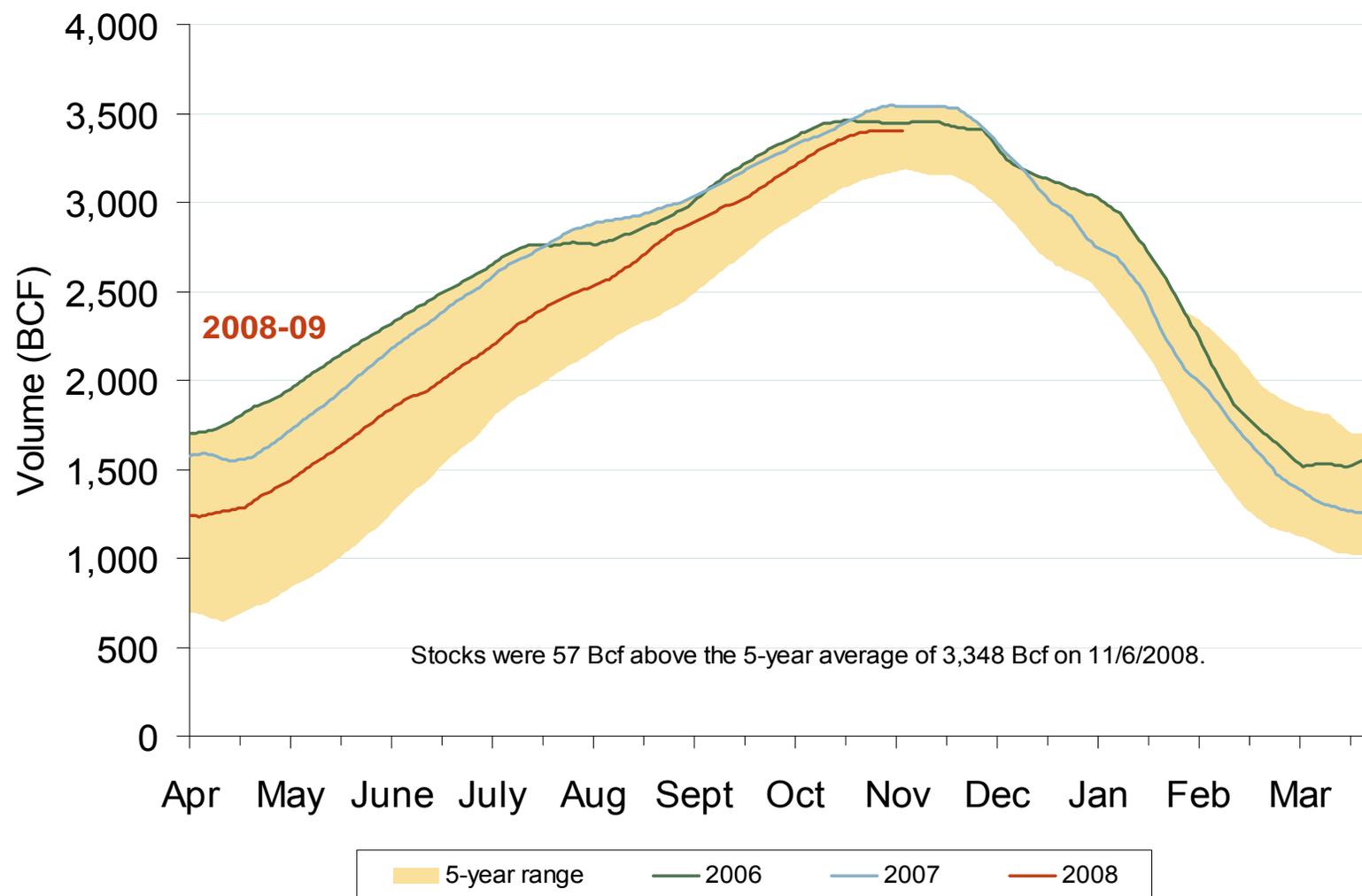
# Total U.S. Natural Gas Demand (All Sectors)



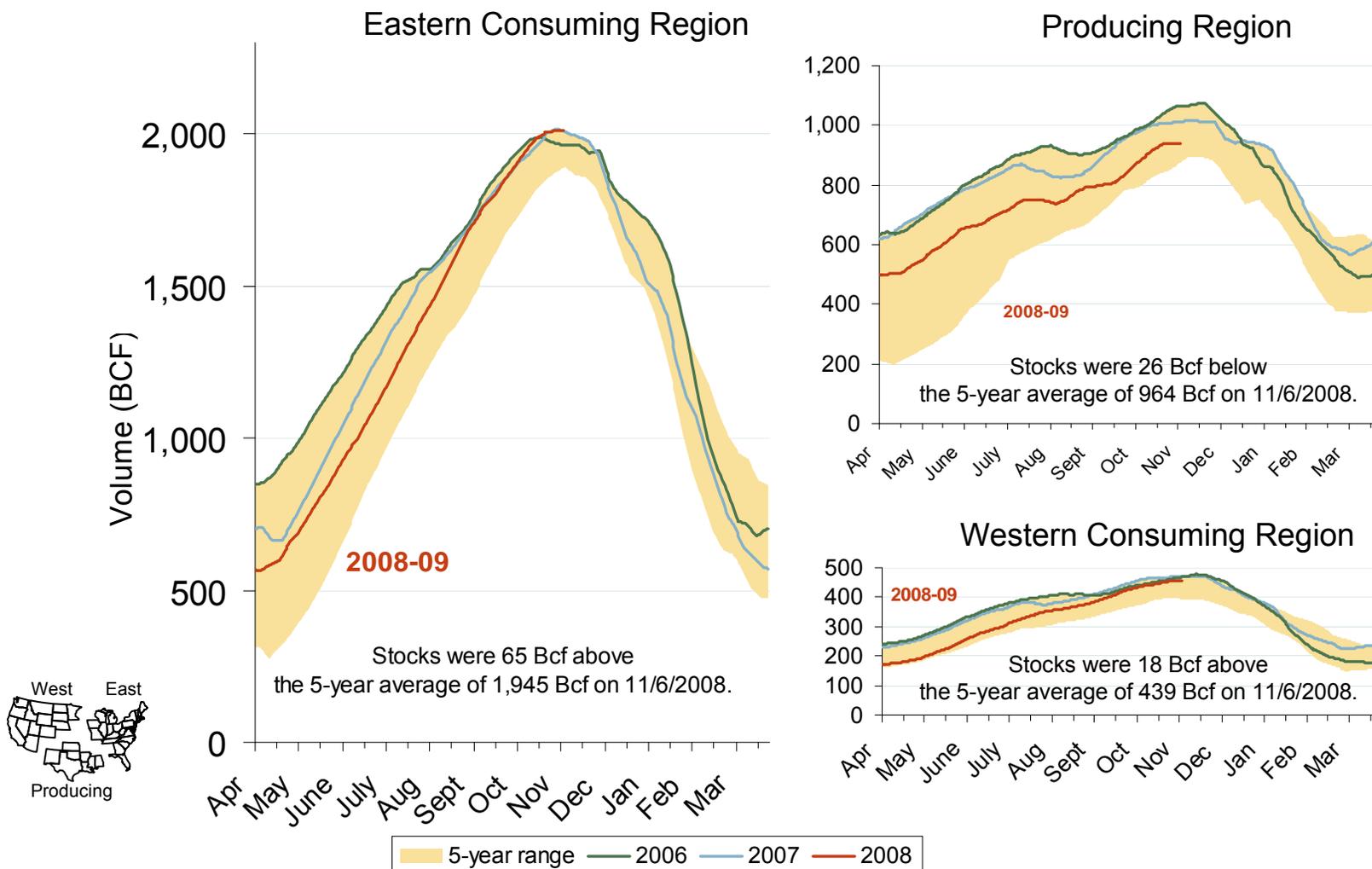
Source: Derived from *Bentek Energy* data.  
November 2008 Western Snapshot Report

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## Total U.S. Working Gas in Storage

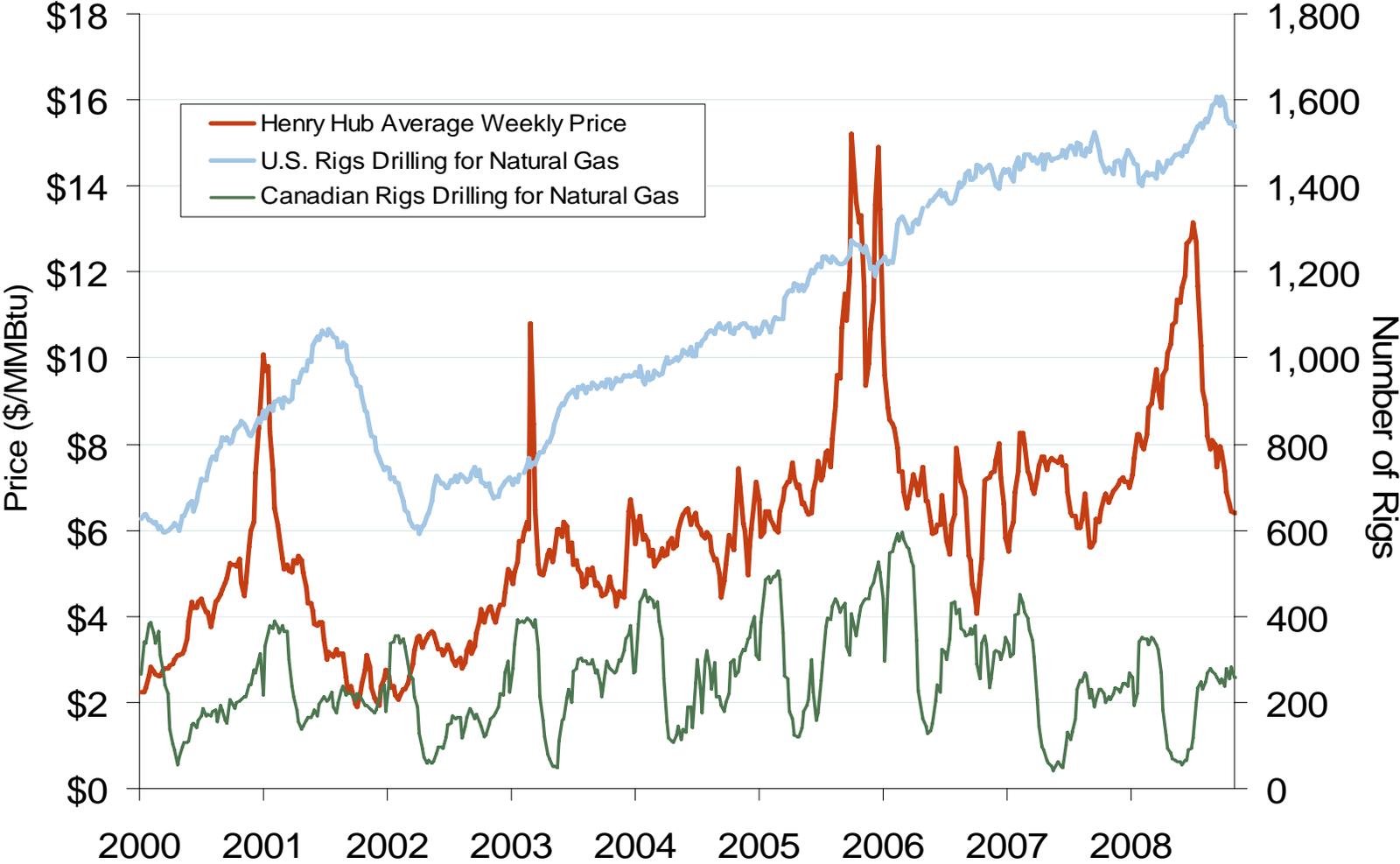


# Regional Totals of Working Gas in Storage



Source: Derived from EIA data.  
November 2008 Western Snapshot Report

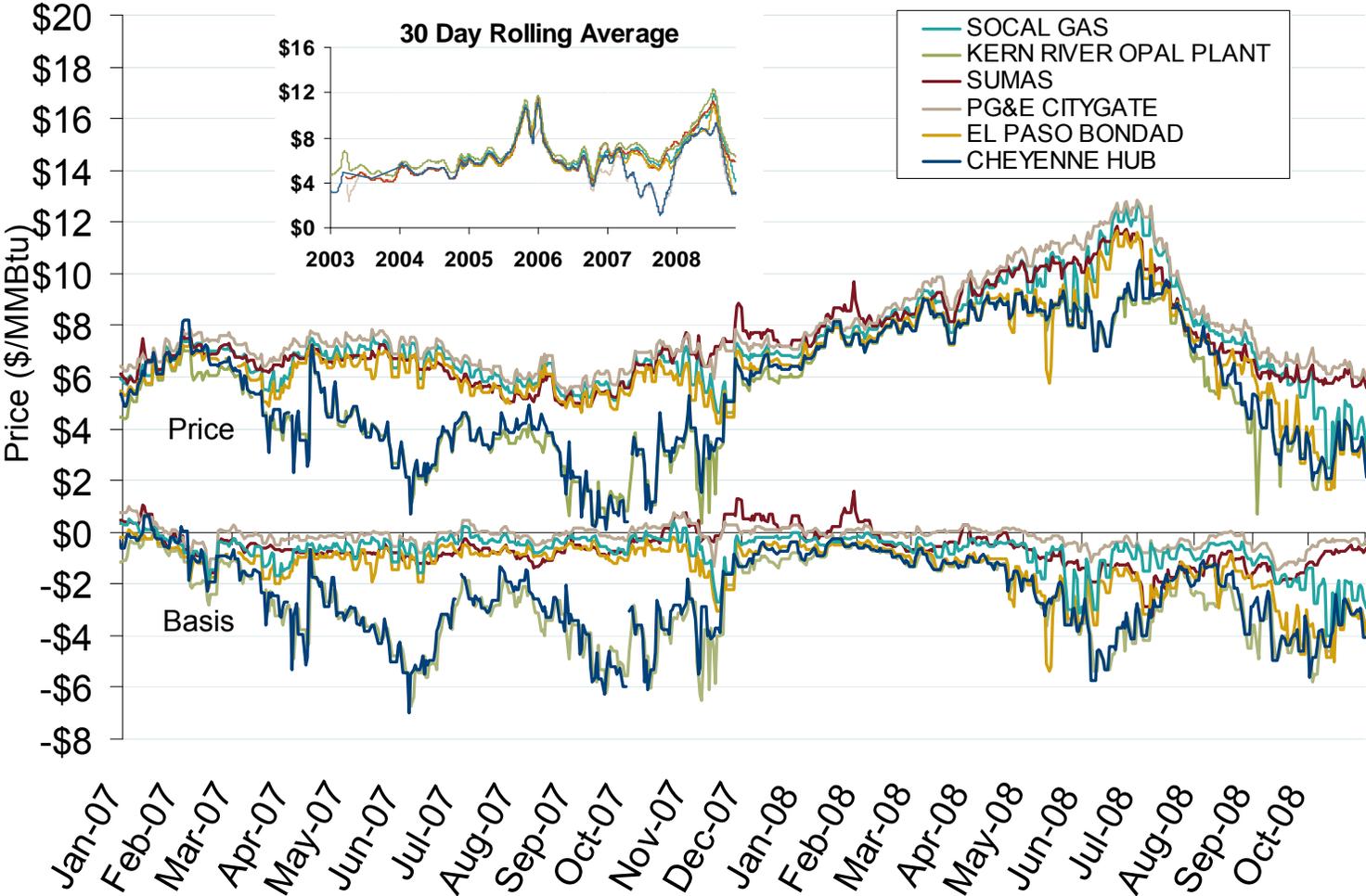
# U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



Source: Derived from *Platts* and *Baker Hughes* data.  
November 2008 Western Snapshot Report

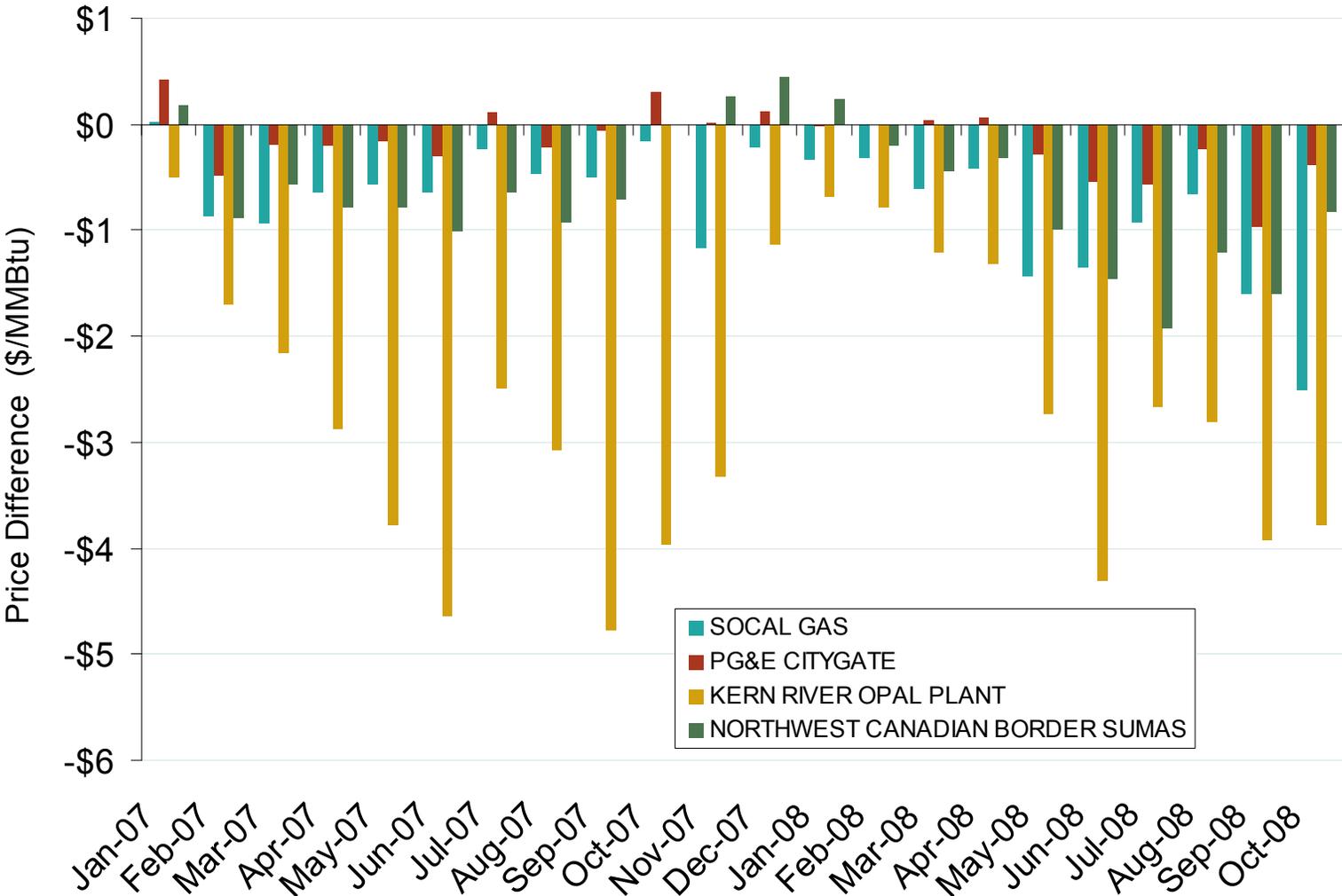
Updated November 7, 2008

# Western Day-Ahead Hub Spot Prices and Basis



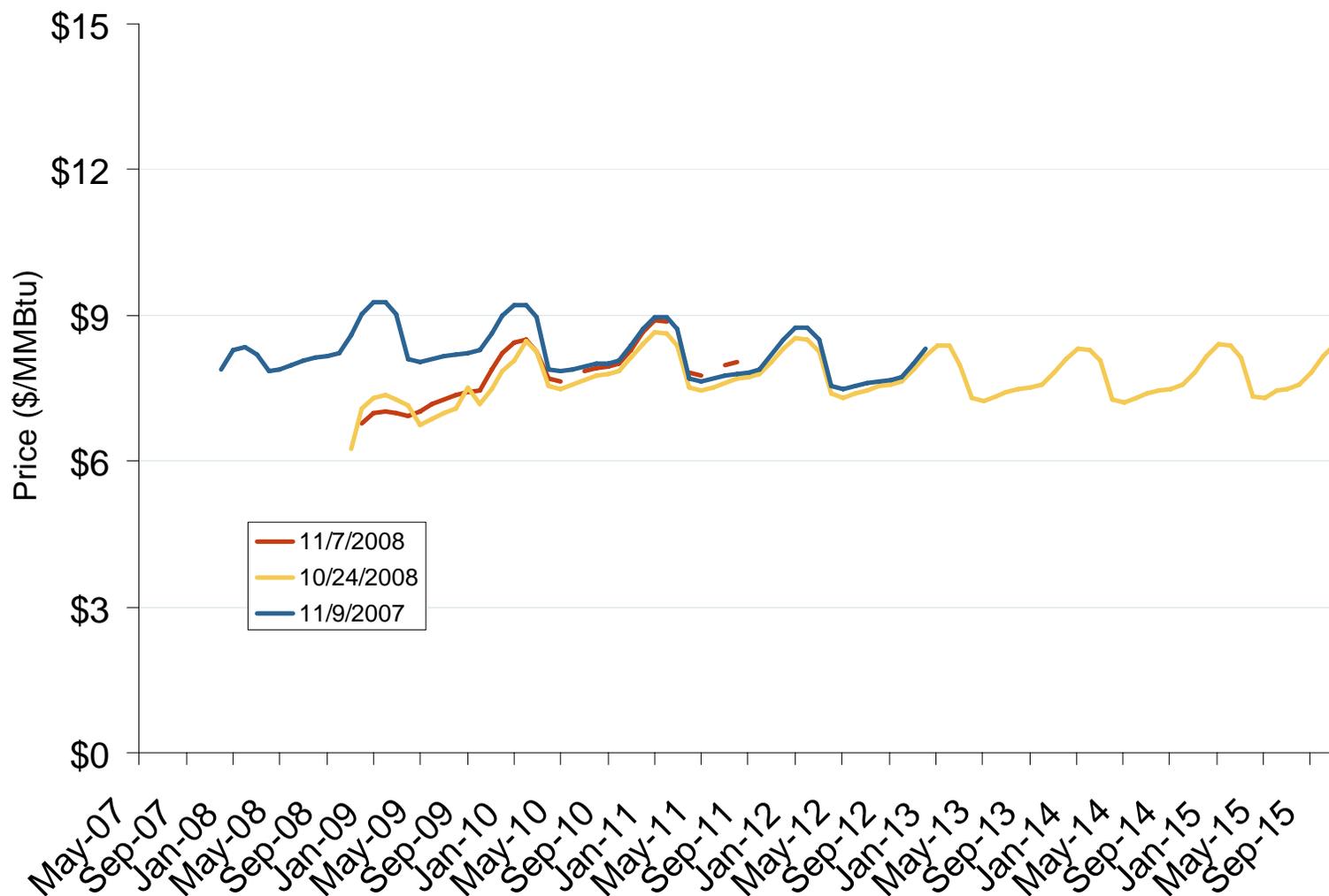
Source: Derived from Platts data.  
November 2008 Western Snapshot Report

# Western Monthly Average Basis Value to Henry Hub



Source: Derived from *Platts* data.  
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## NYMEX Natural Gas Forward Price Curve

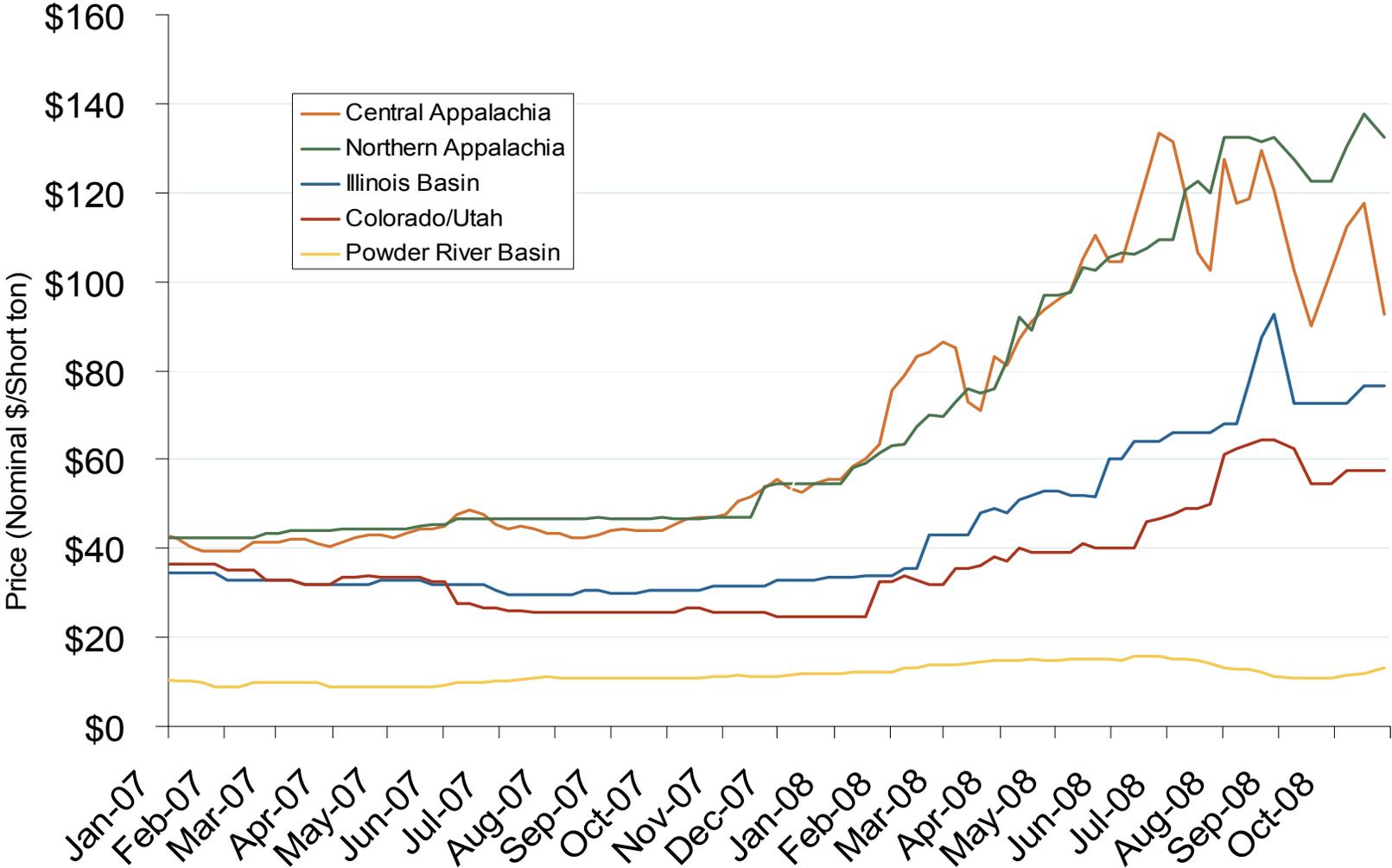


# Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices



Source: Derived from *Platts* and *Nymex* data.  
November 2008 Western Snapshot Report

# Regional Coal Spot Prices

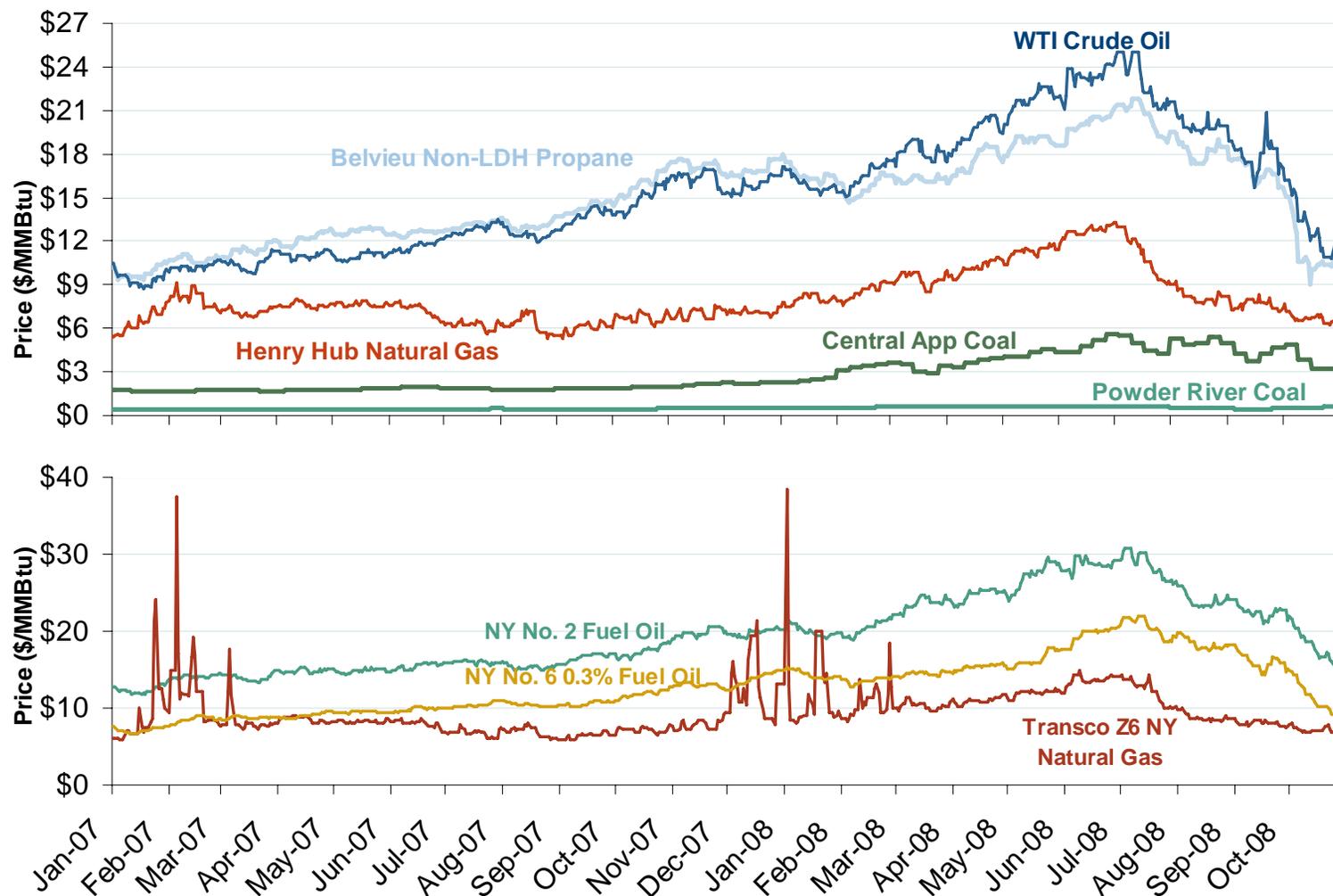


Note: Does not reflect the delivered price of coal; excludes incremental cost of emissions allowances.

Source: Derived from *Bloomberg* data.  
November 2008 Western Snapshot Report

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

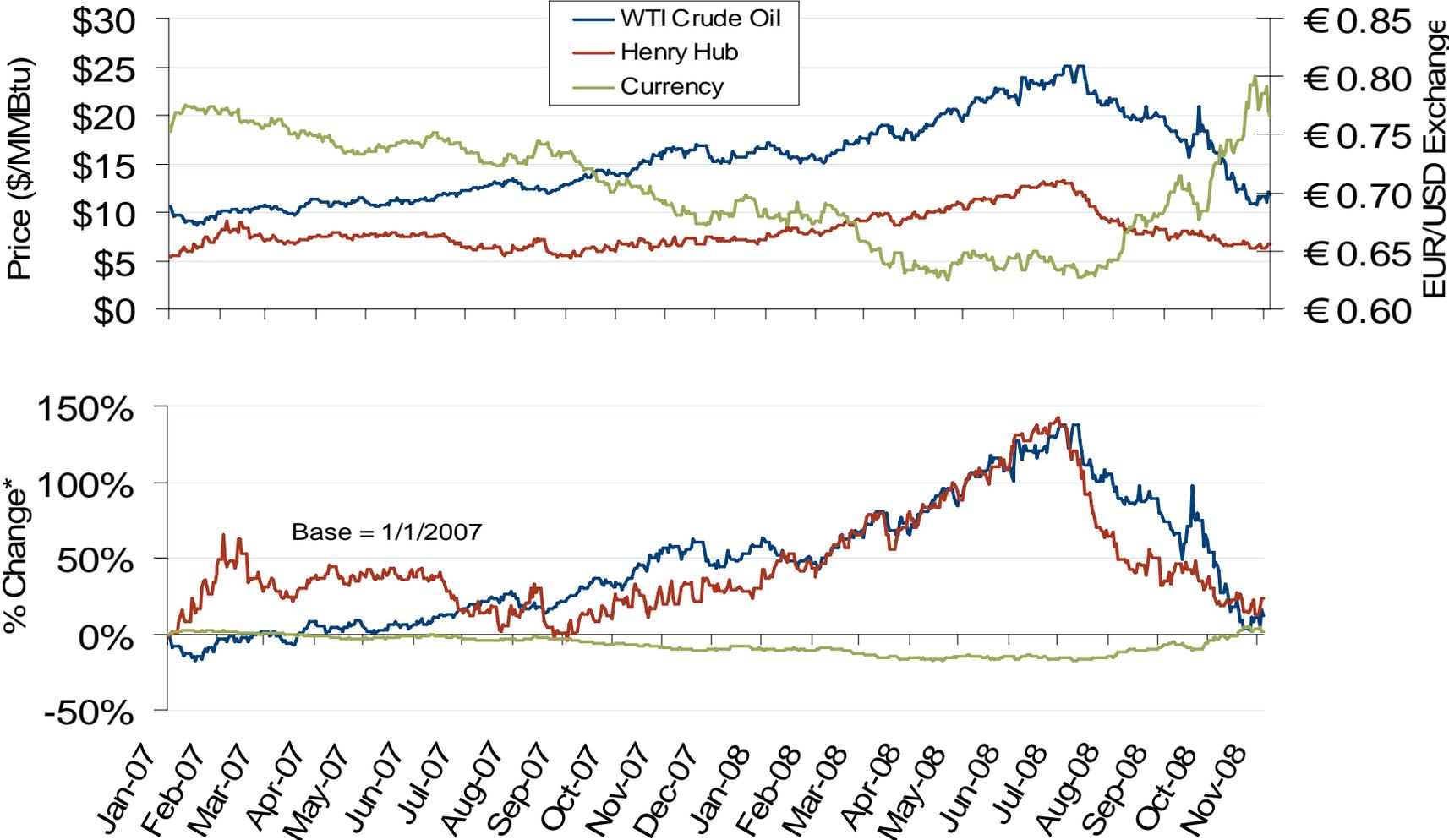


Source: Derived from ICE and Bloomberg data.

Note: 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.

Updated November 7, 2009

# Oil, Natural Gas and Currency Spot Prices



Source: Derived from Bloomberg data.

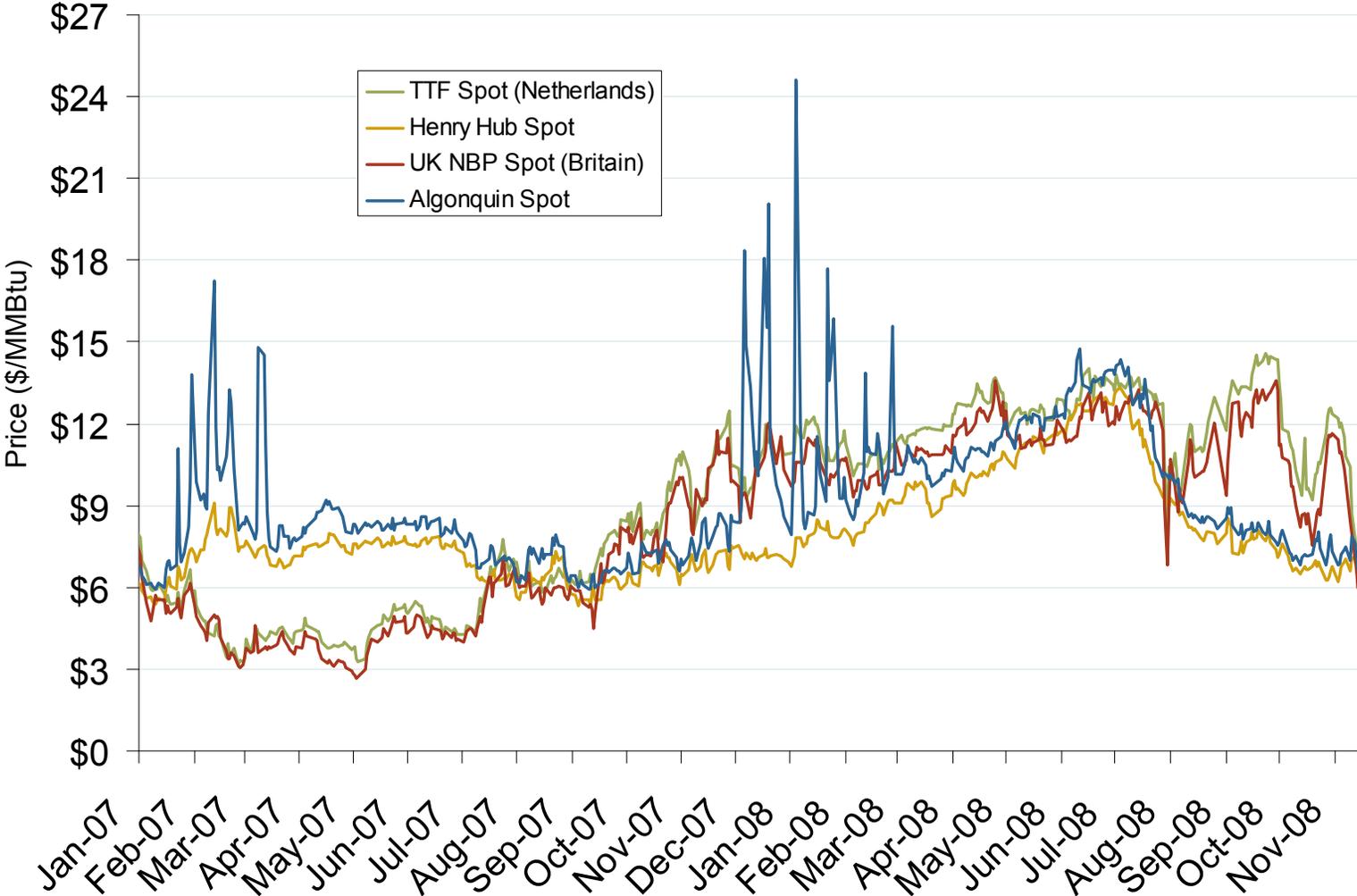
# World LNG Estimated November 2008 Landed Prices



Source: Waterborne Energy, Inc. Data in \$US/MMBtu.  
November 2008 Western Snapshot Report

Updated November 7, 2008

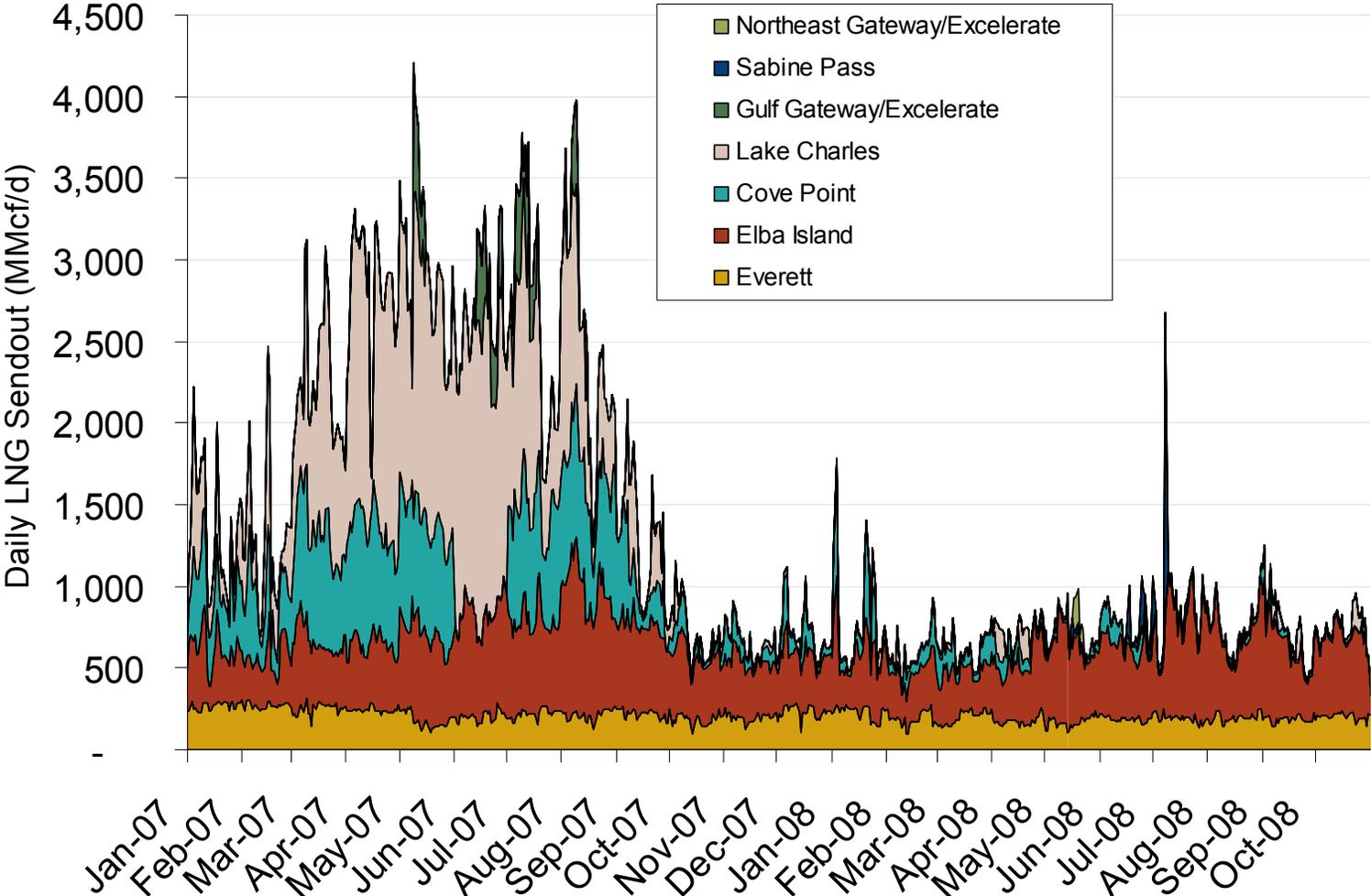
# Atlantic Basin European and US Spot Natural Gas Prices



Source: Derived from *Bloomberg* and *ICE* data.  
November 2008 Western Snapshot Report

Updated November 7, 2008

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



Source: Derived from *Bentek* data. Excludes Everett LNG delivered via truck and consumed by the Mystic plant as well as Freeport LNG which flows via intrastate pipelines.