

# OE ENERGY MARKET SNAPSHOT

## Western States Version – August 2008 Data

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- **Special Report**
- **Market Fundamentals**
- **Prices and Market Analysis**

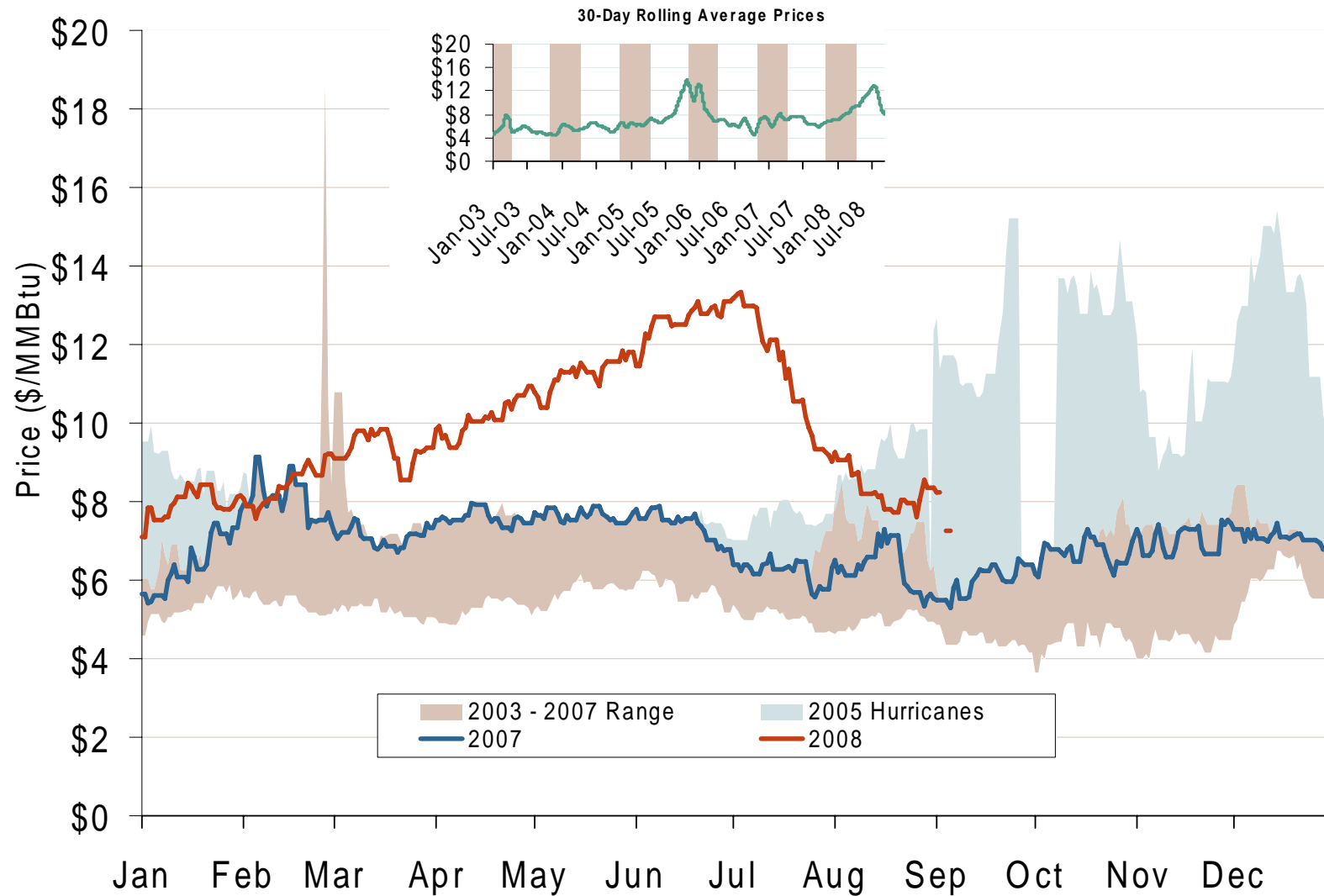
Office of Enforcement  
Federal Energy Regulatory Commission  
September 2008



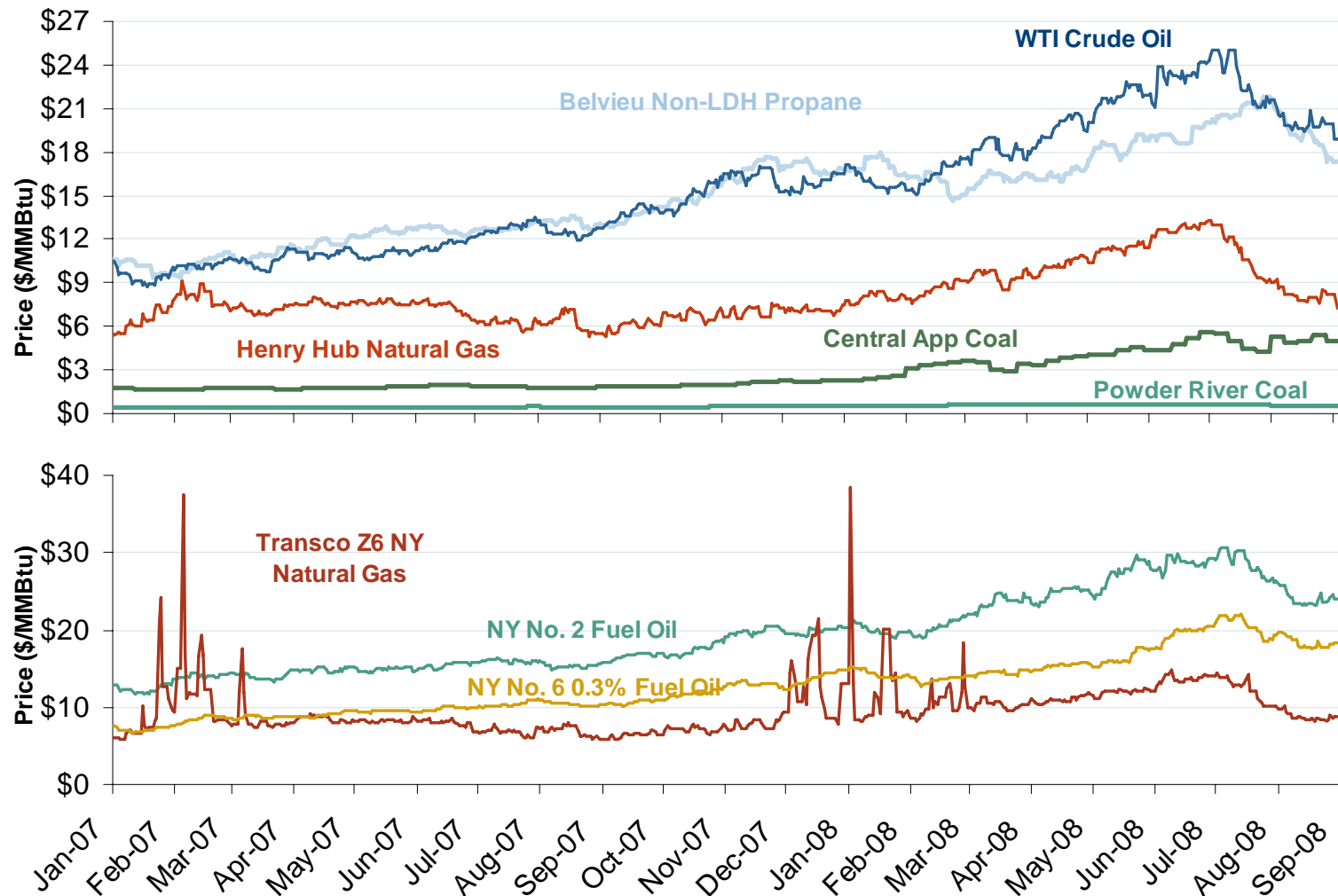
# Special Report:

## Natural Gas Price Decline II

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



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

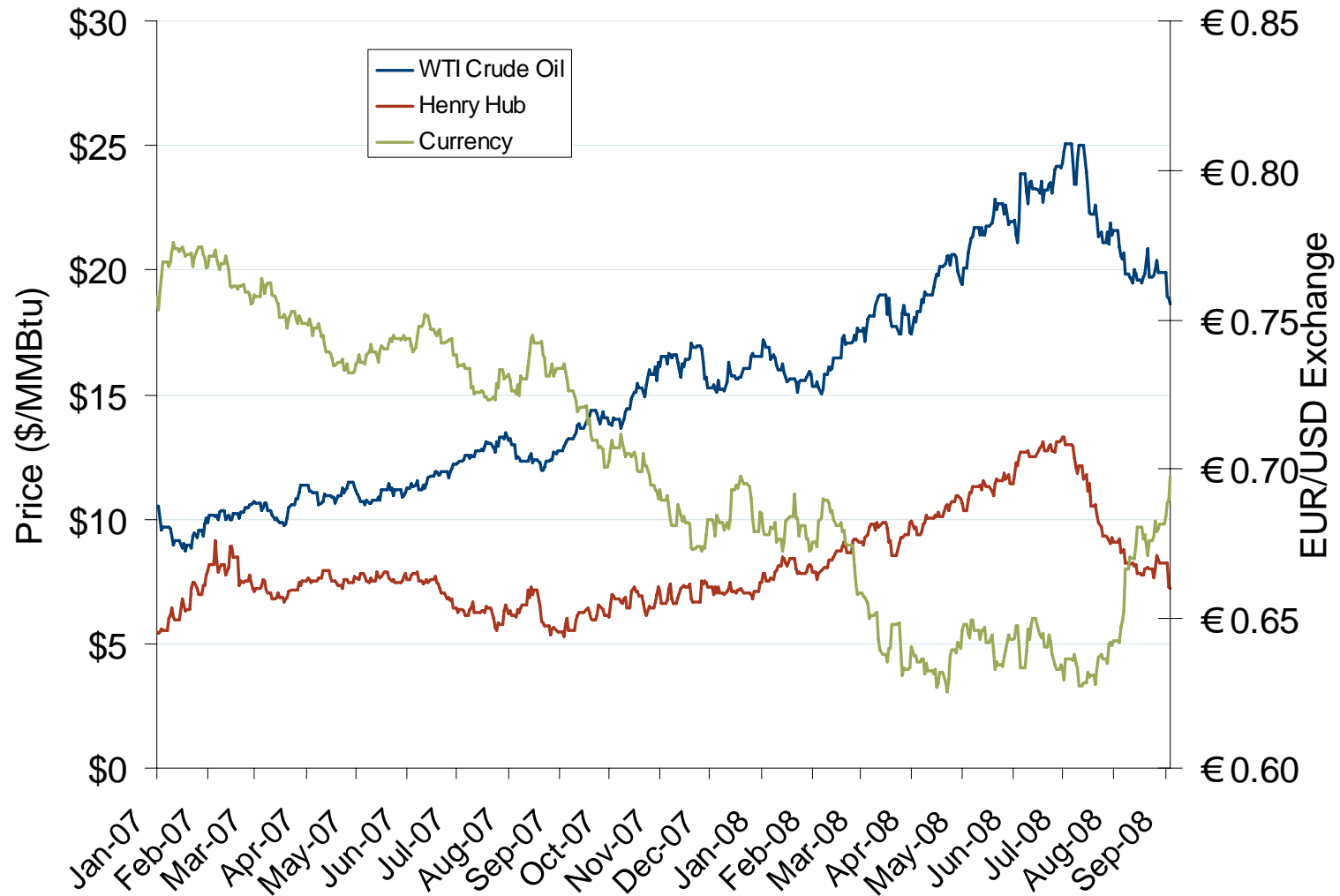


Source: Derived from ICE and Bloomberg data.

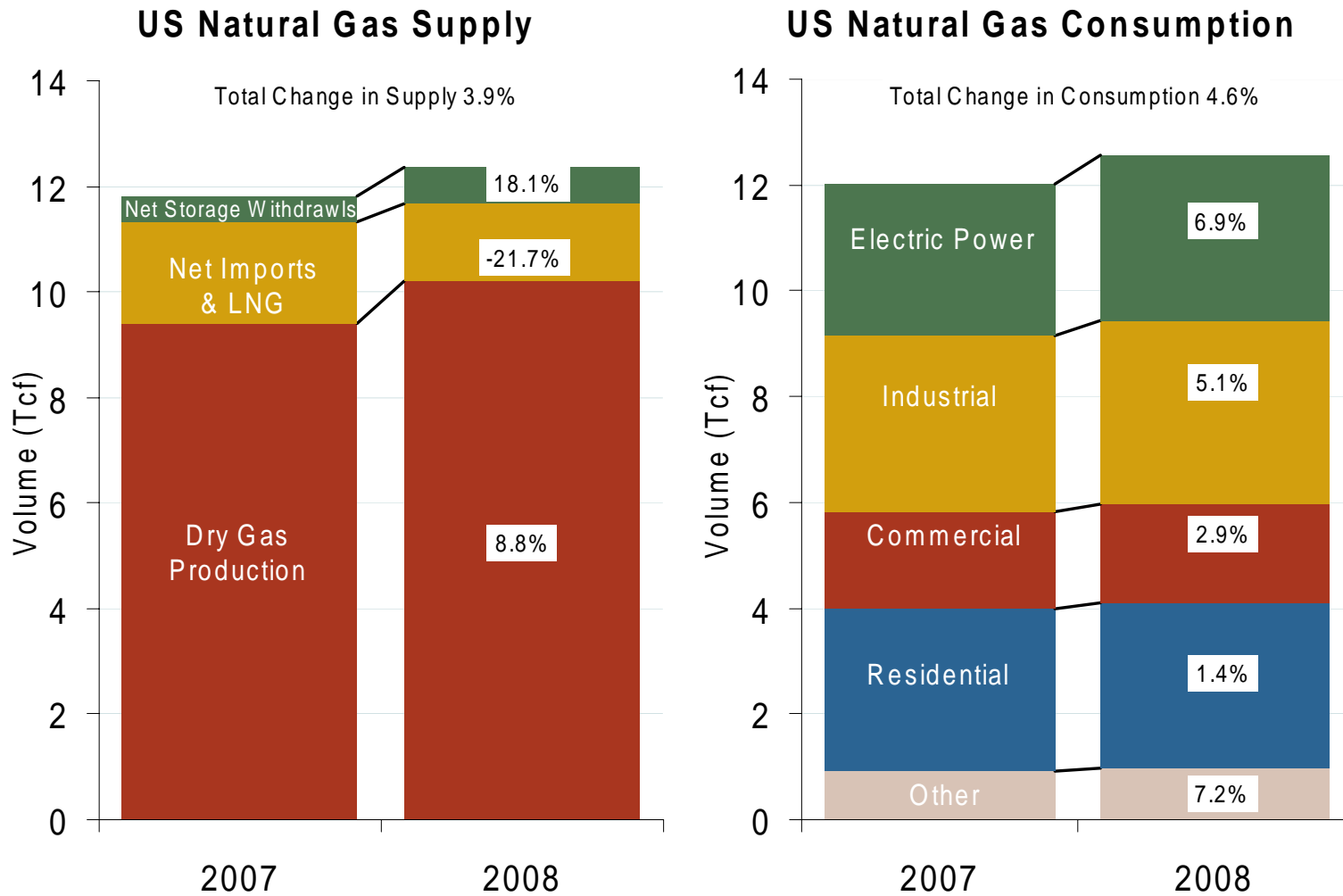
Note: Coal prices are quoted in \$/ton. Conversion factors to \$/MMBtu are based on contract specifications of 12,000 btus/pound for Central Appalachian coal and 8800 btus/pound for Powder River Basin coal.

Updated September 5, 2008

## Oil, Natural Gas and Currency Spot Prices



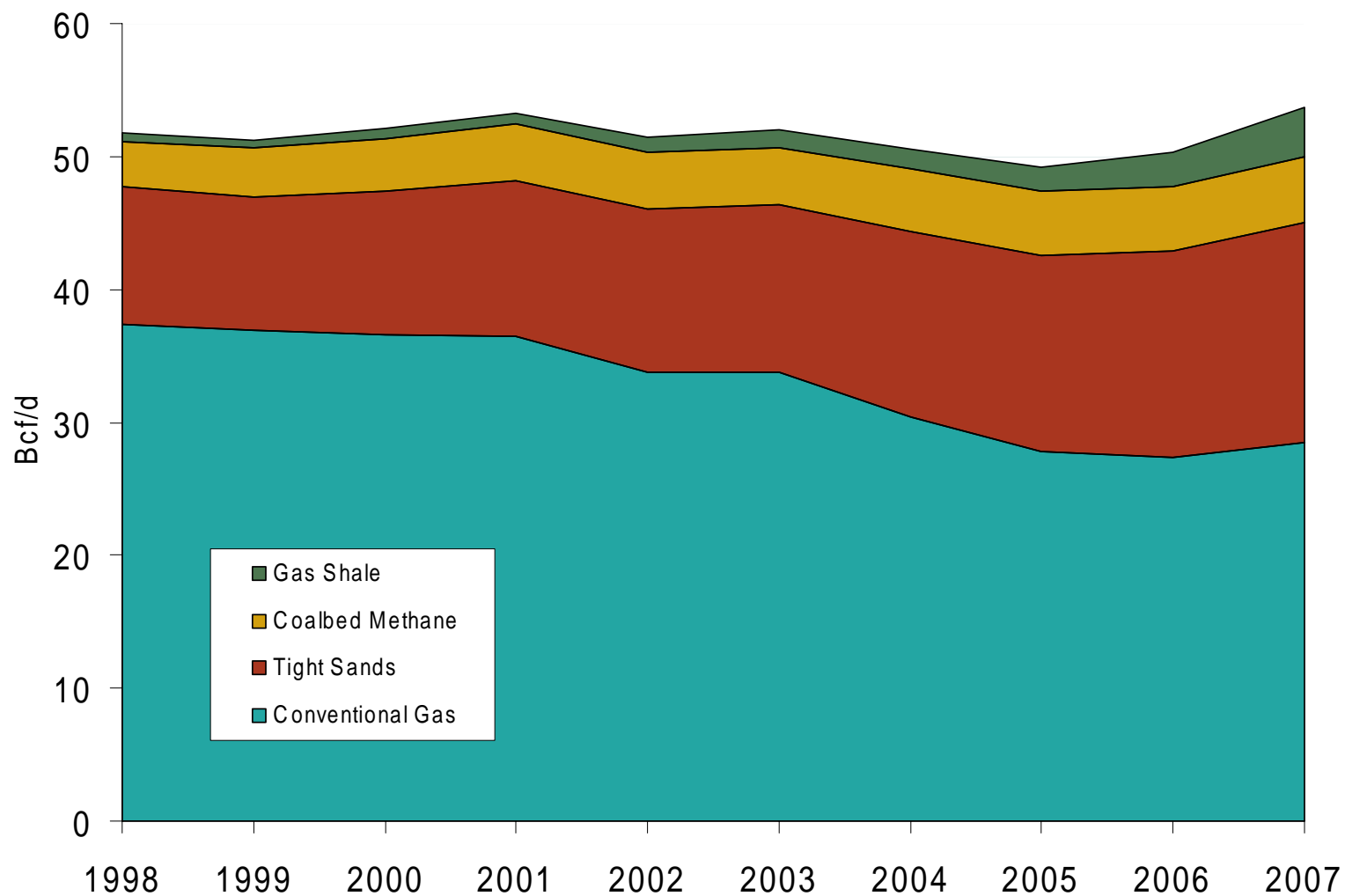
# U.S. Natural Gas Supply and Consumption Jan-Jun



## Major US Shale Basins

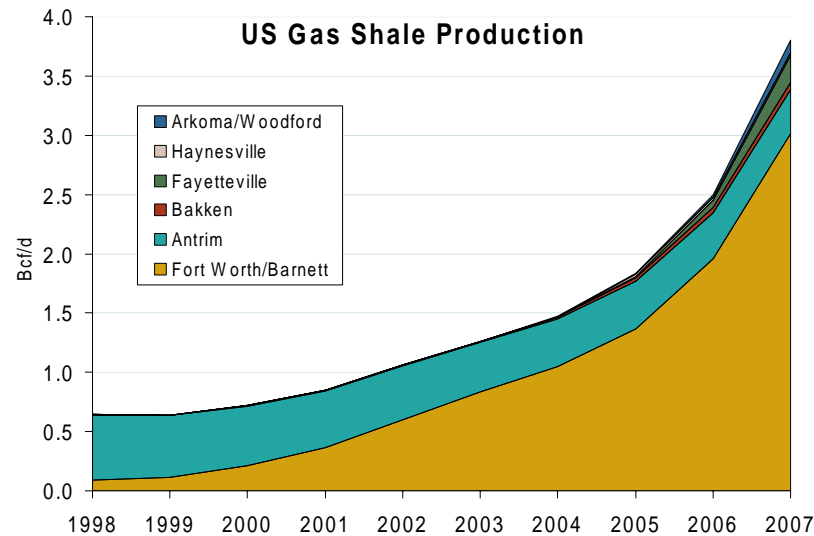
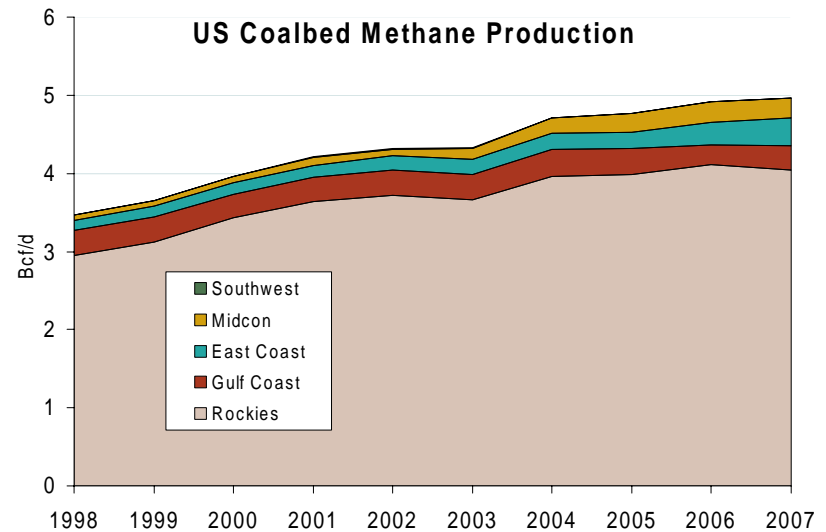
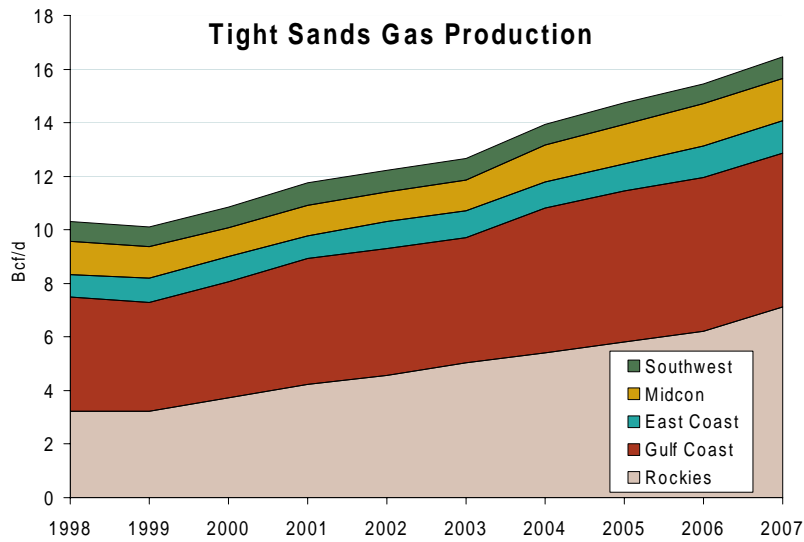


## US Natural Gas Production



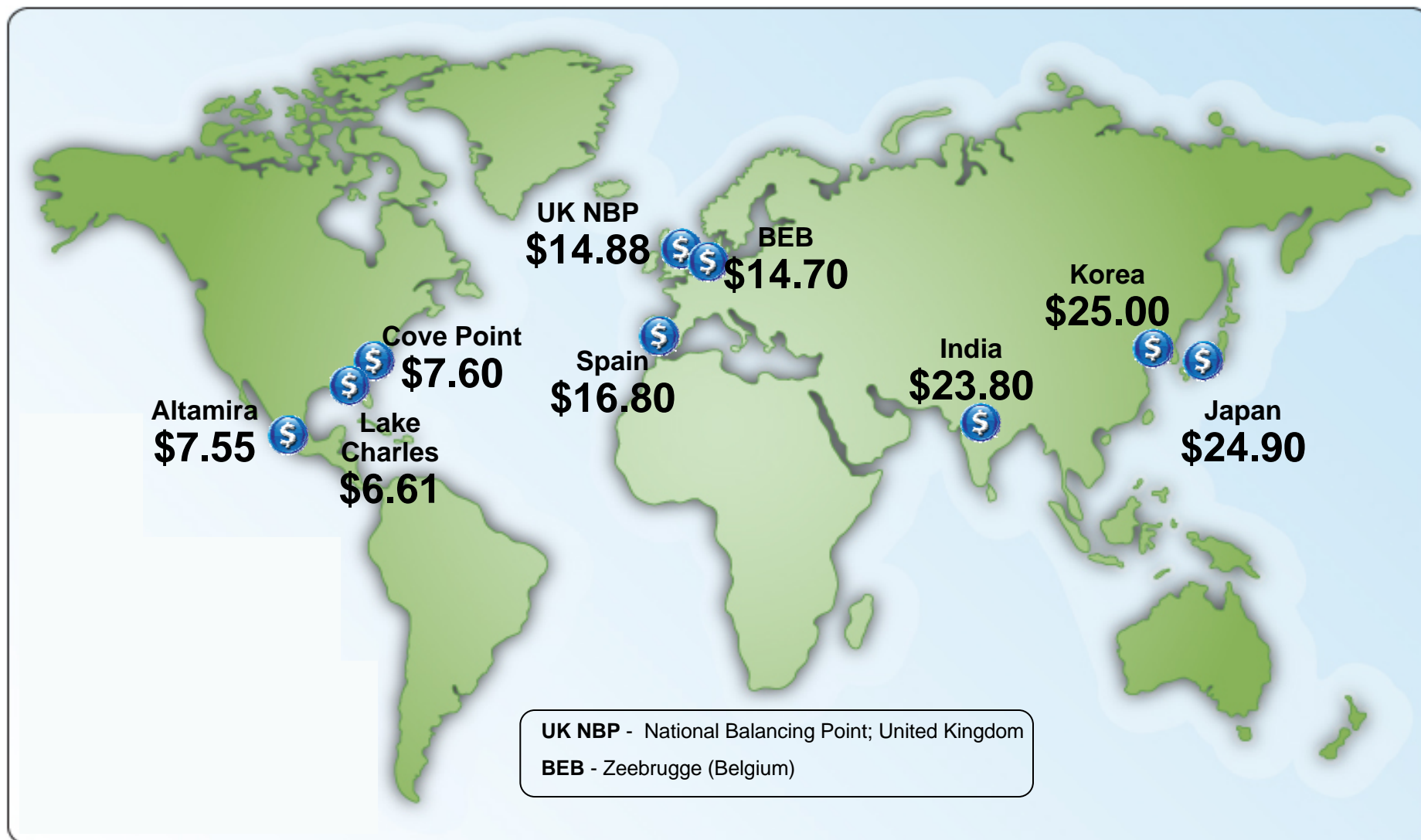


# “Unconventional” Natural Gas Production



Source: Derived from EIA data.  
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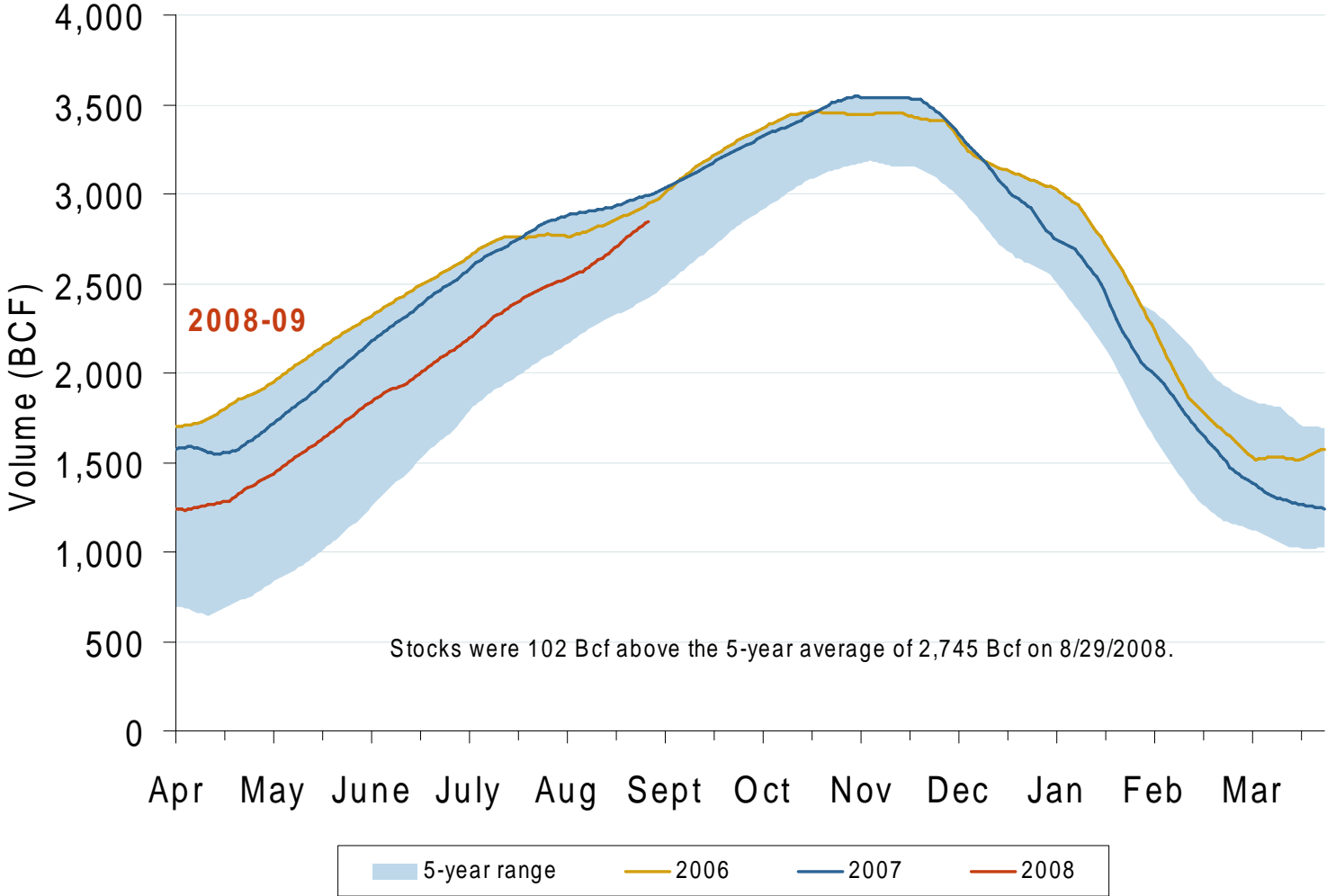
## World LNG Landed Price Estimates for October 2008



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

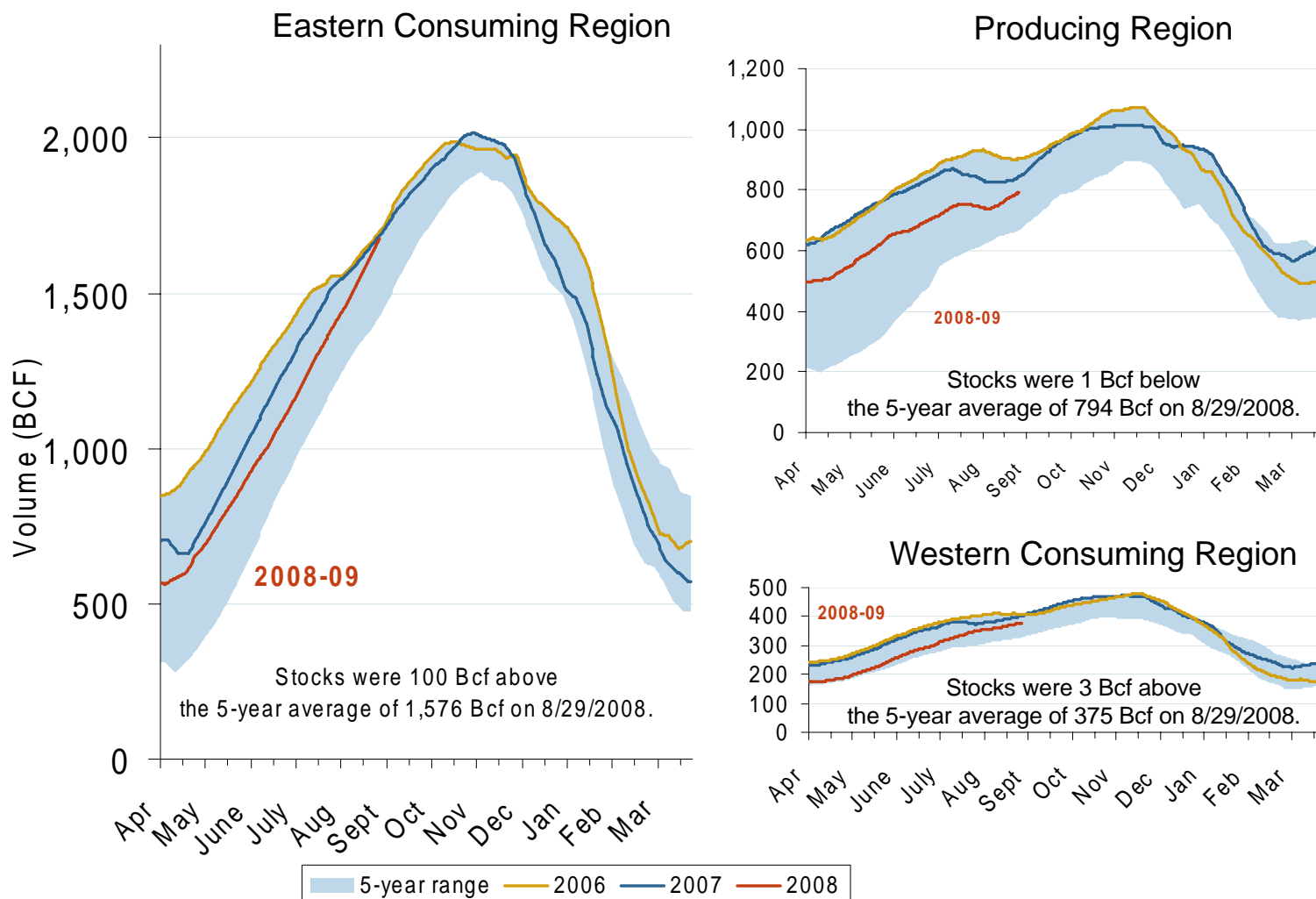
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# Total U.S. Working Gas in Storage

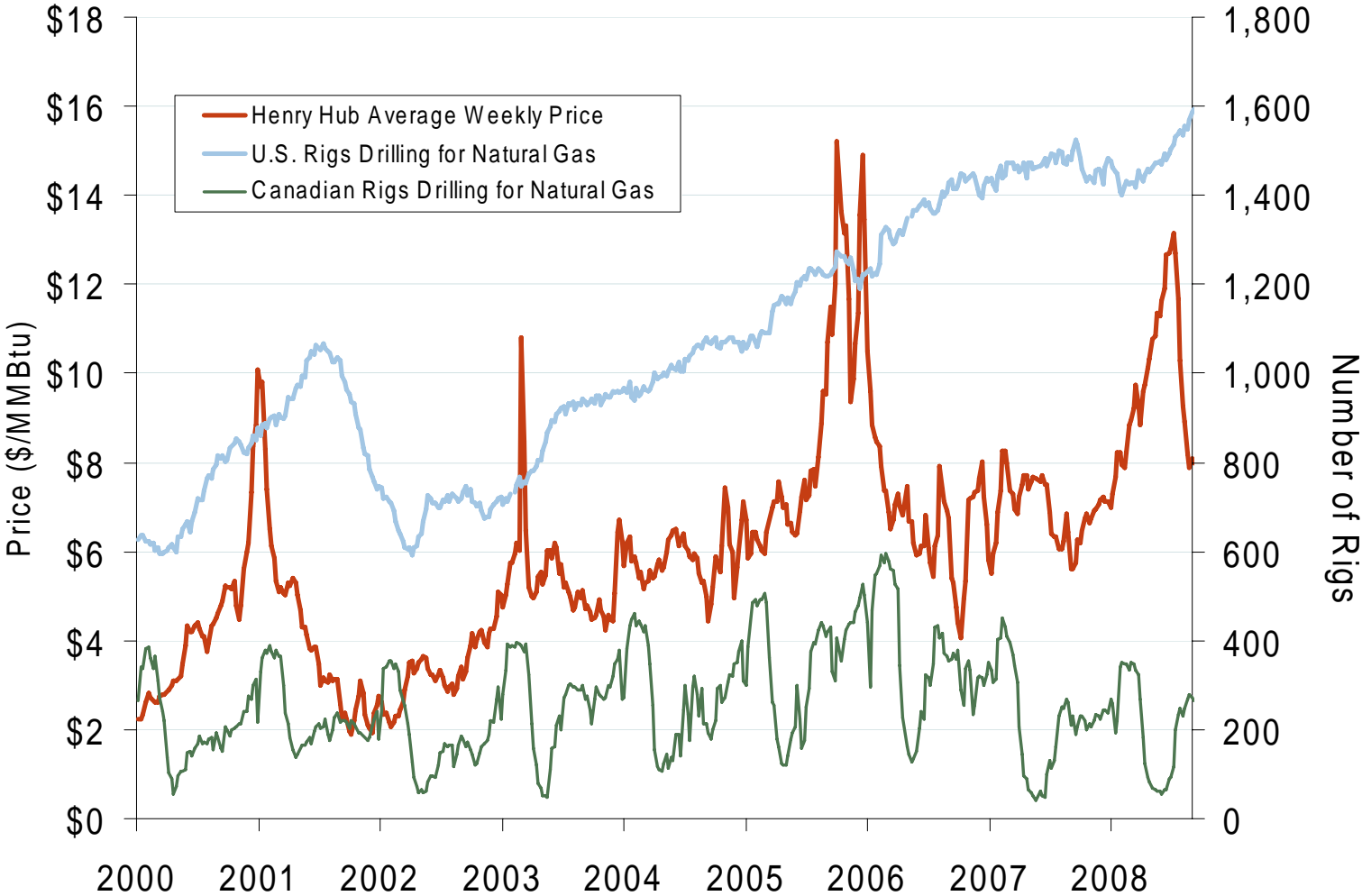


Source: Derived from EIA data.  
September 2008 Western Snapshot Report

## Regional Totals of Working Gas in Storage



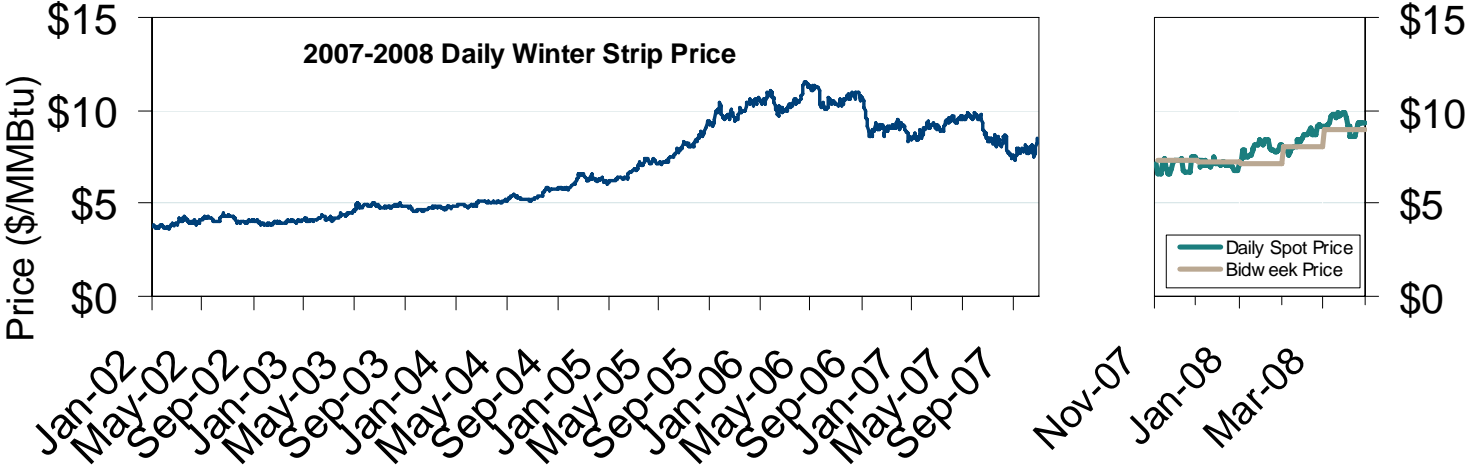
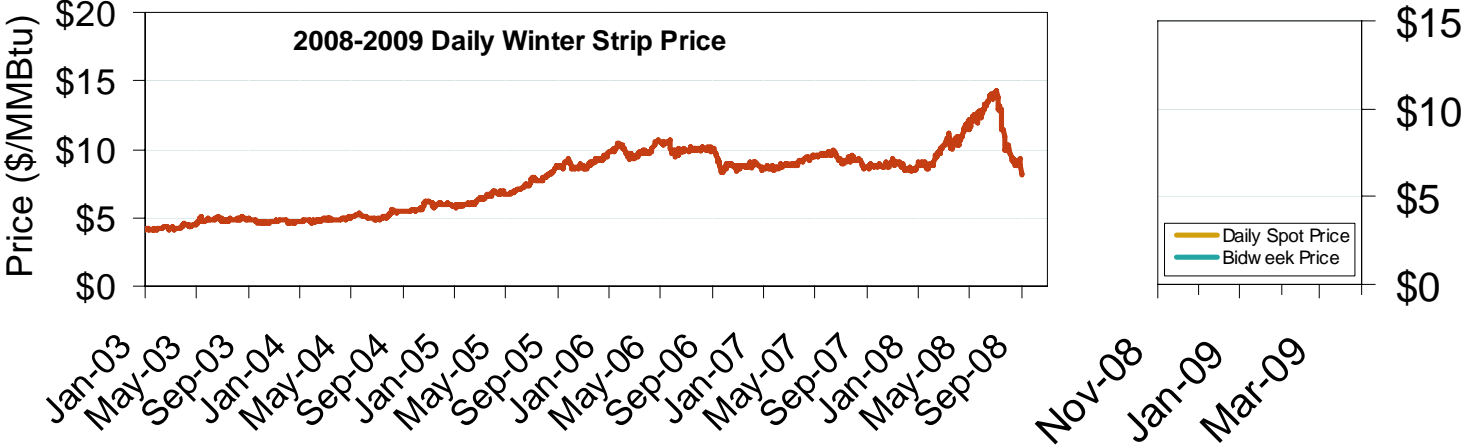
# U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



Source: Derived from *Platts* and *Baker Hughes* data.  
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# Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices

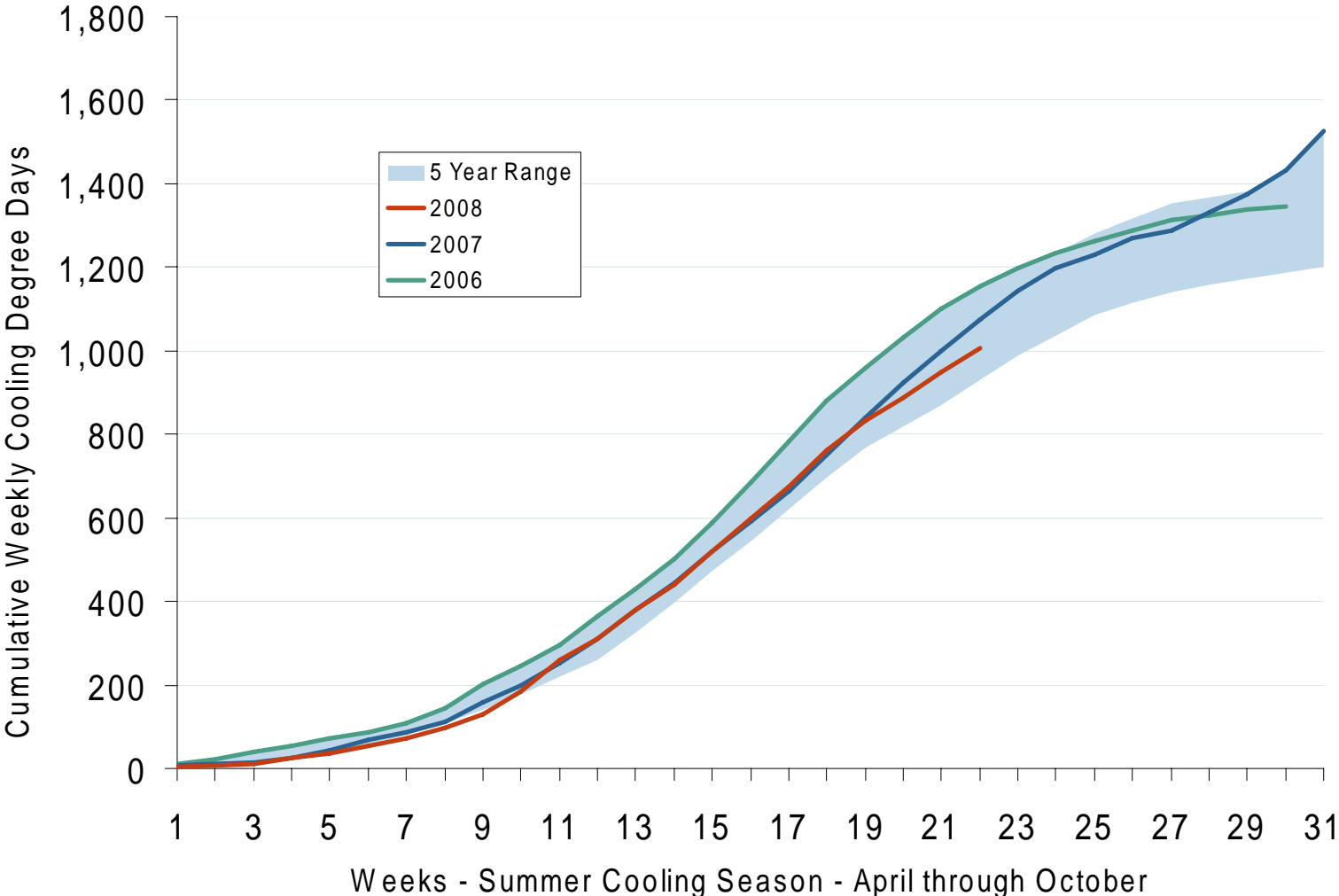


Source: Derived from *Platts* and *Nymex* data.  
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# Market Fundamentals

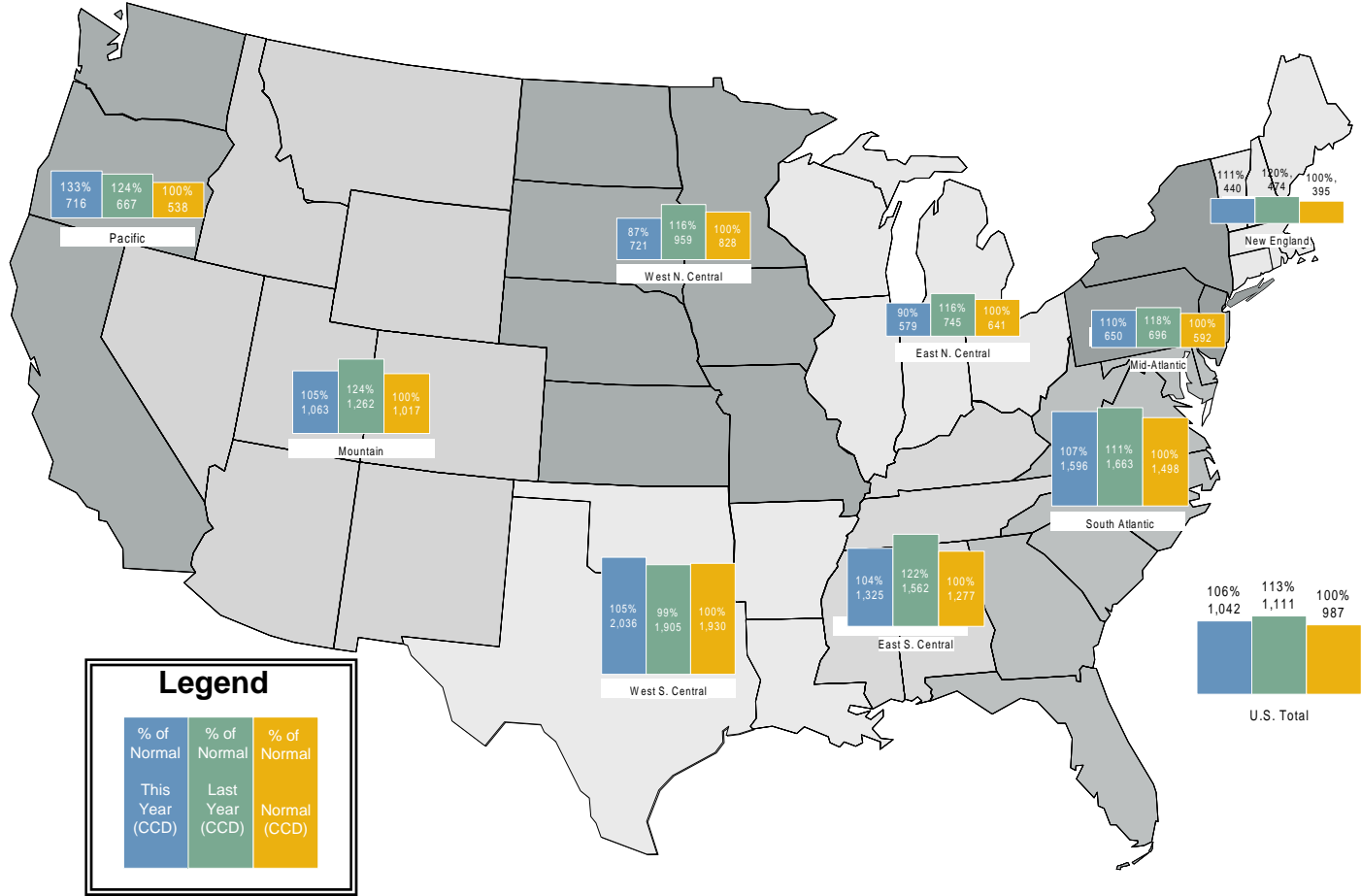
# U. S. Summer Cumulative Cooling Degree Days



Source: Derived from NOAA data.



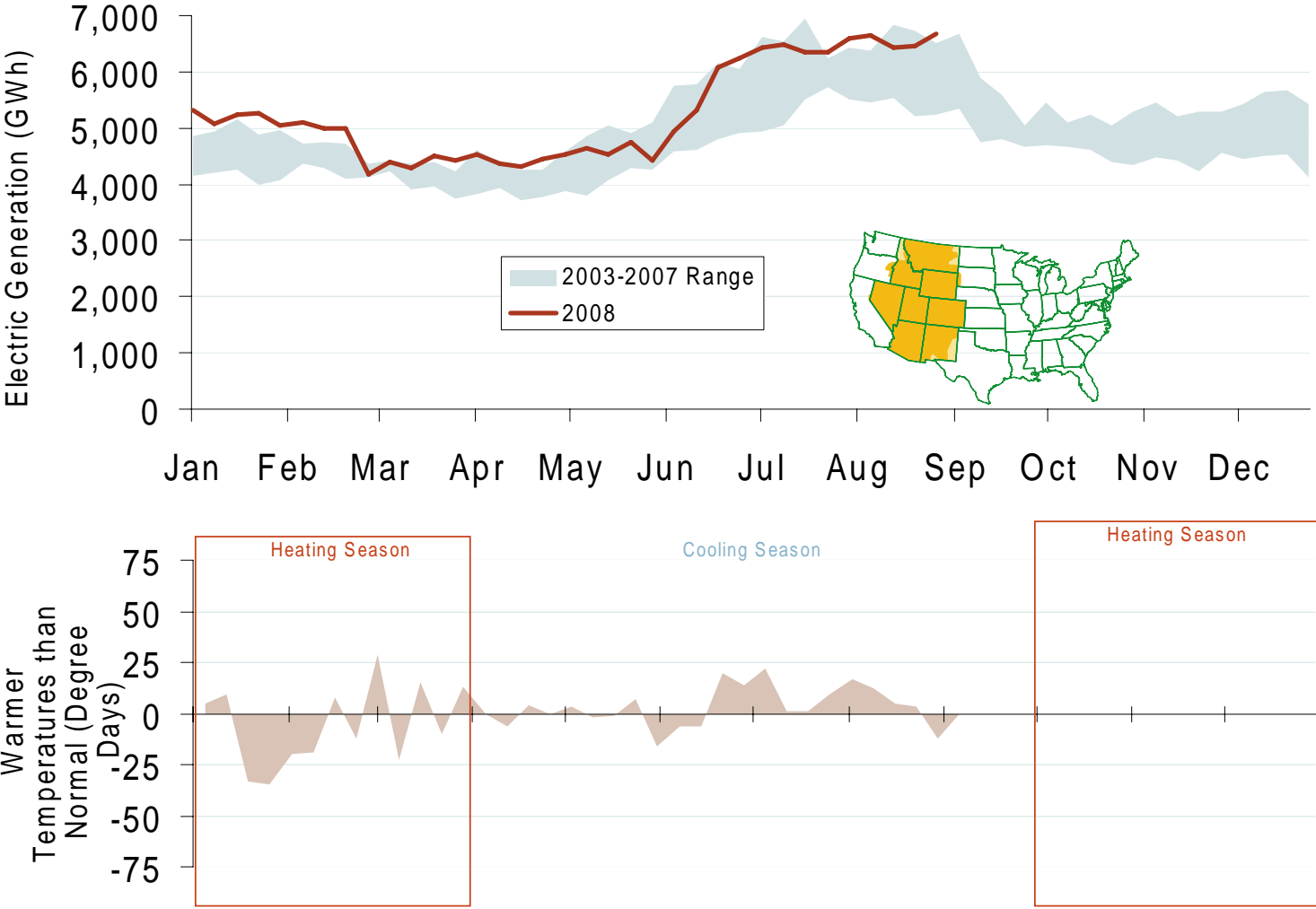
# Regional Cooling Degree Days 2008 Through August



Source: Derived from NOAA data. Normal is based on a 30-year average of cooling degree days. September 2008 Western Snapshot Report

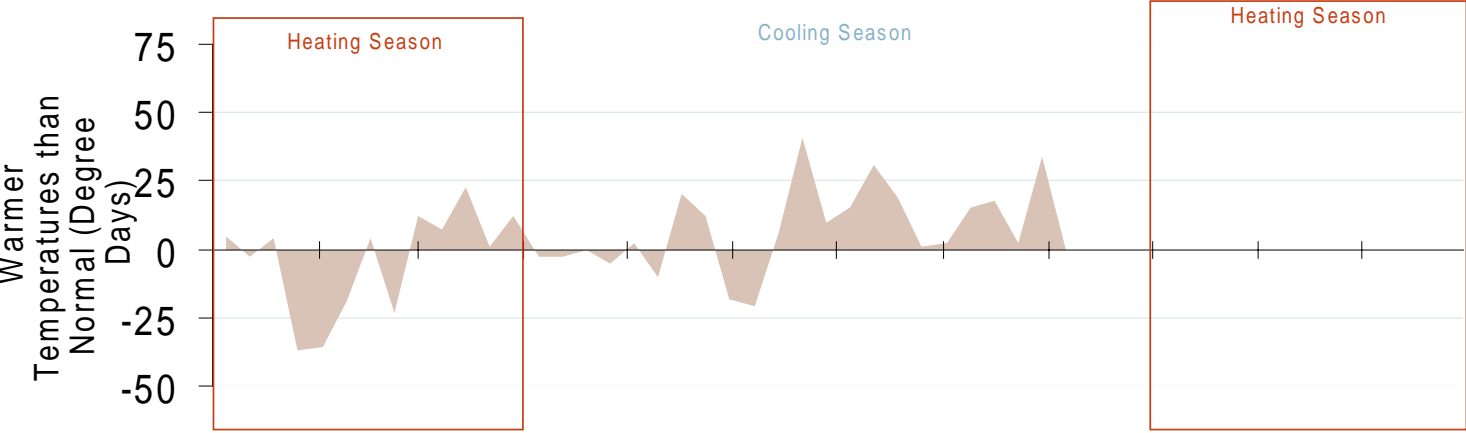
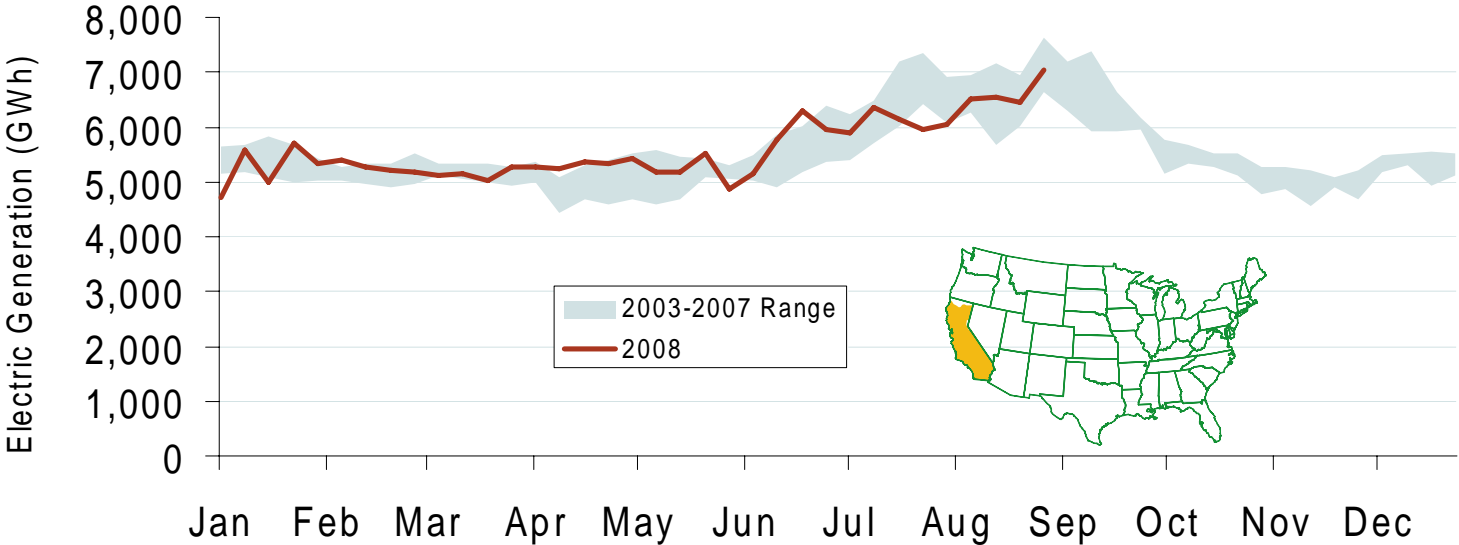
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# Weekly Electric Generation Output and Temperatures Rocky Mountains Region



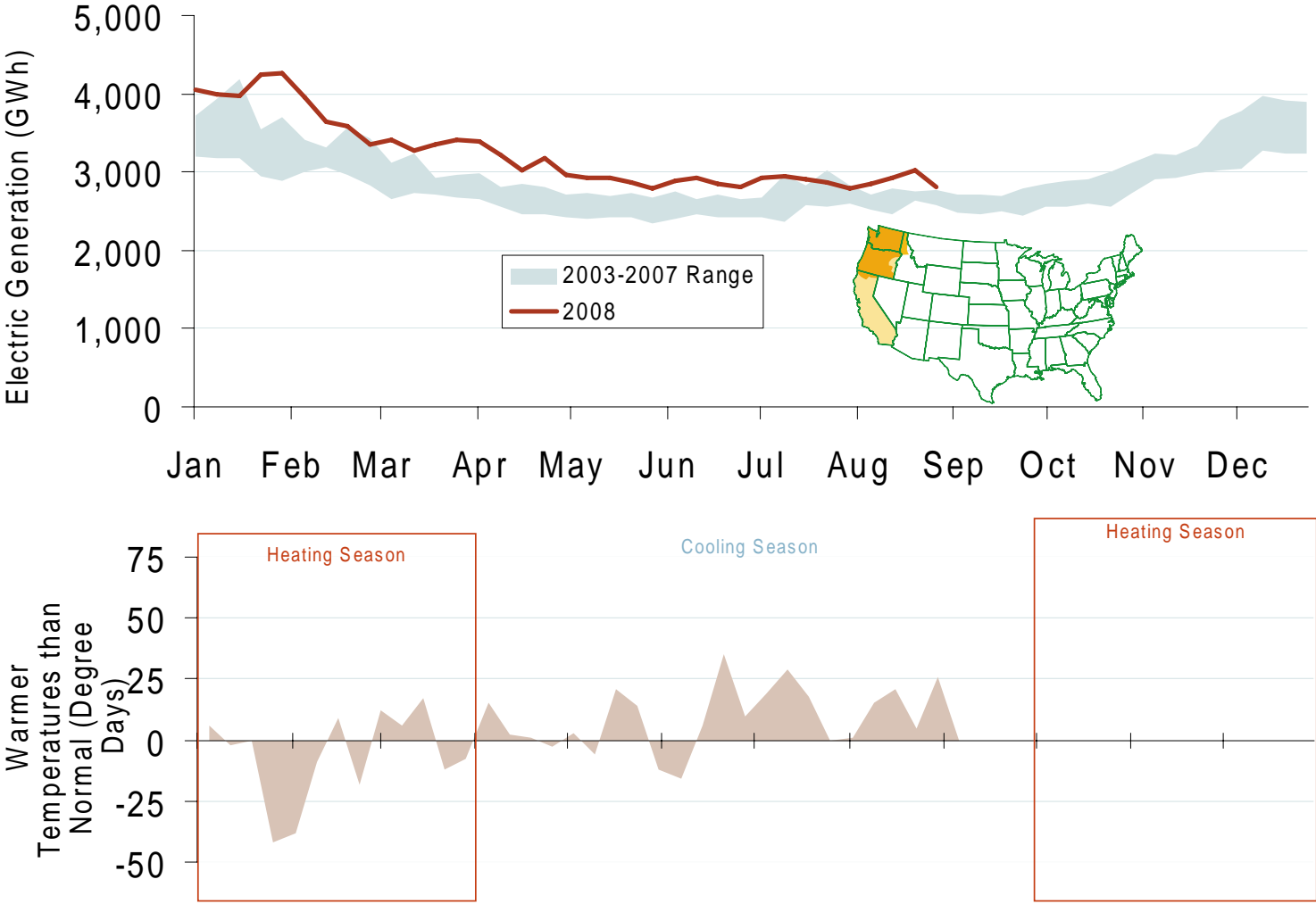
Source: Derived from *EEl* and *NOAA* data.  
September 2008 Western Snapshot Report

# Weekly Electric Generation Output and Temperatures California



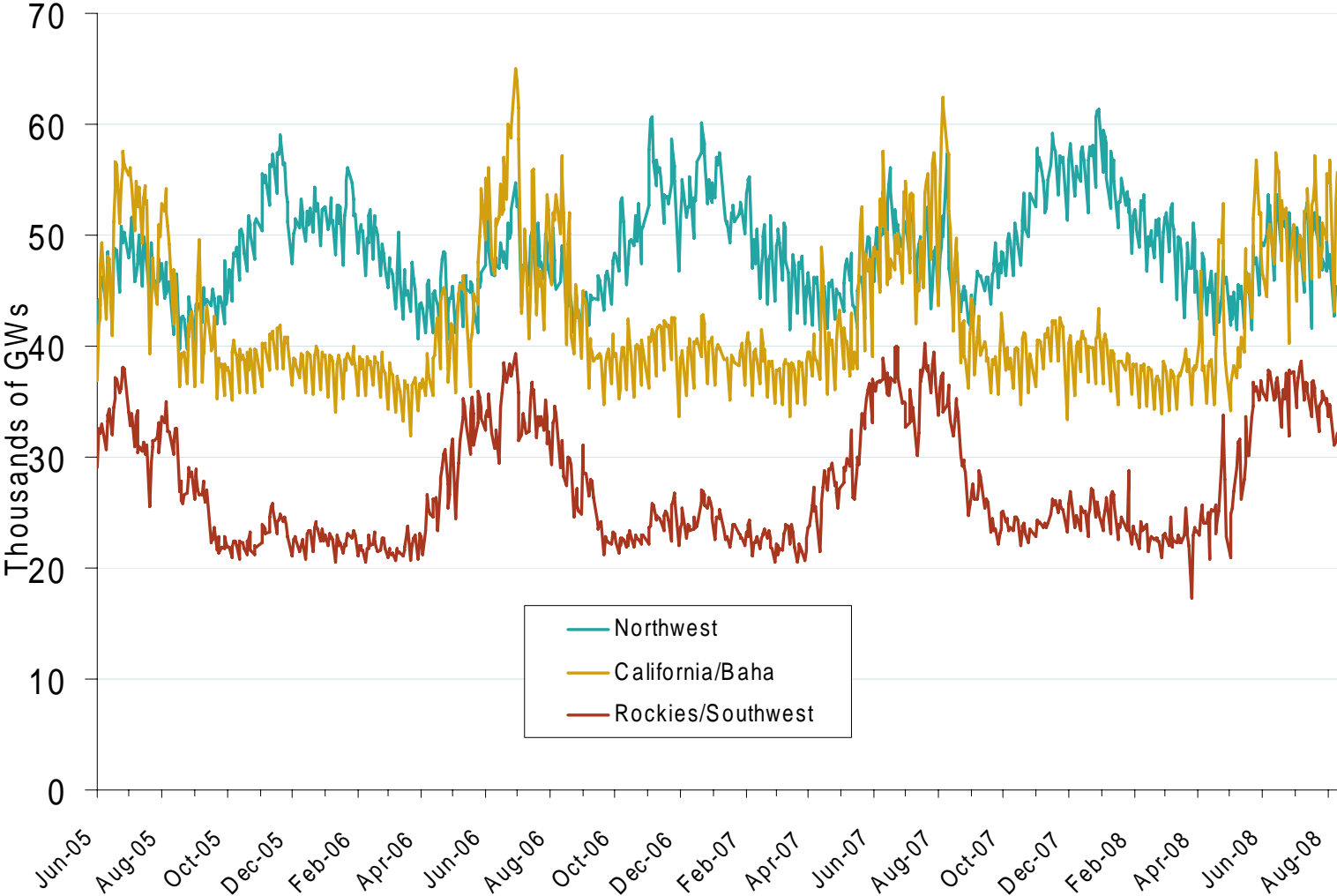
Source: Derived from EEI and NOAA data.  
September 2008 Western Snapshot Report

# Weekly Electric Generation Output and Temperatures Pacific Northwest Region



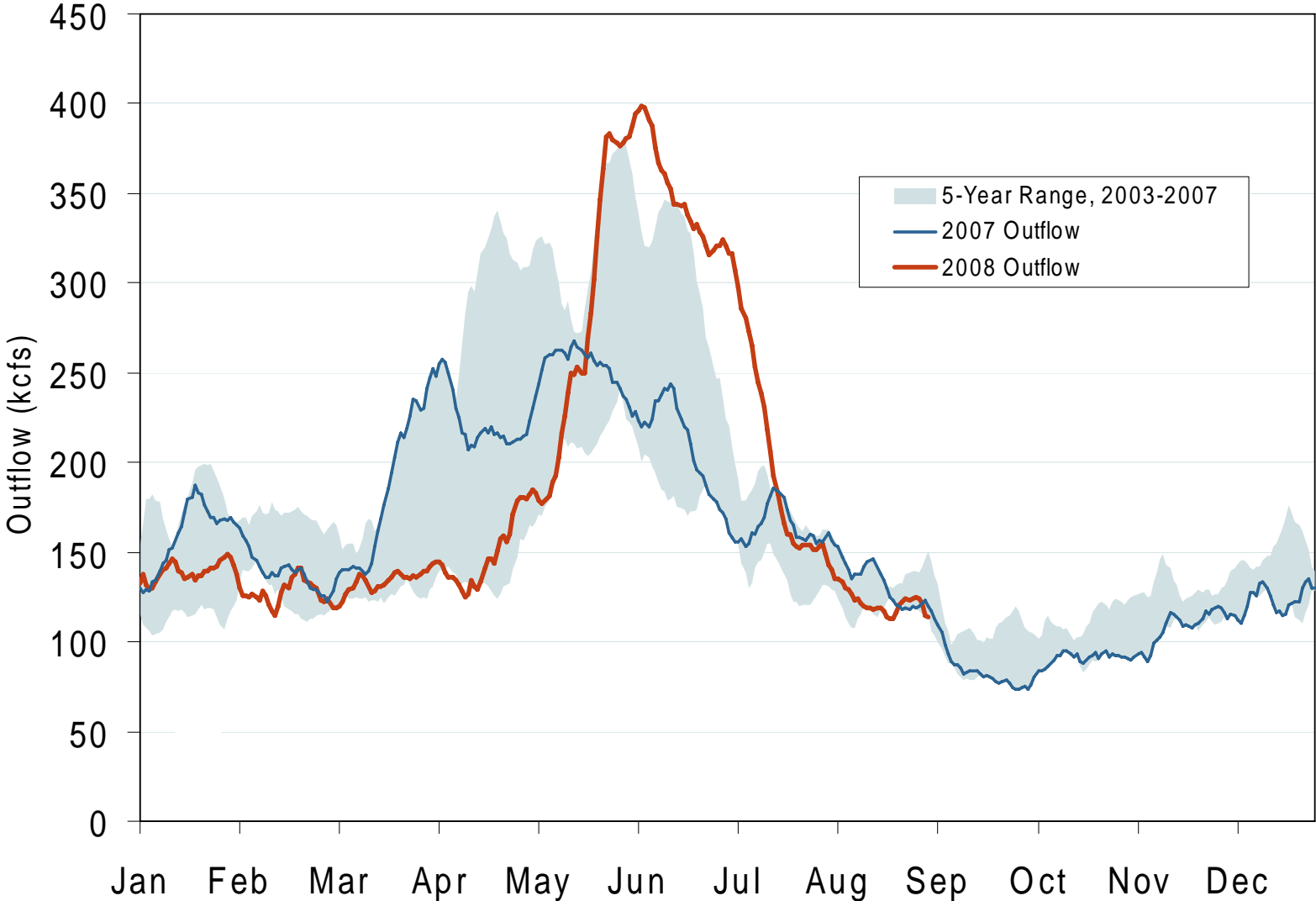
Source: Derived from *EEl* and *NOAA* data.  
September 2008 Western Snapshot Report

# 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



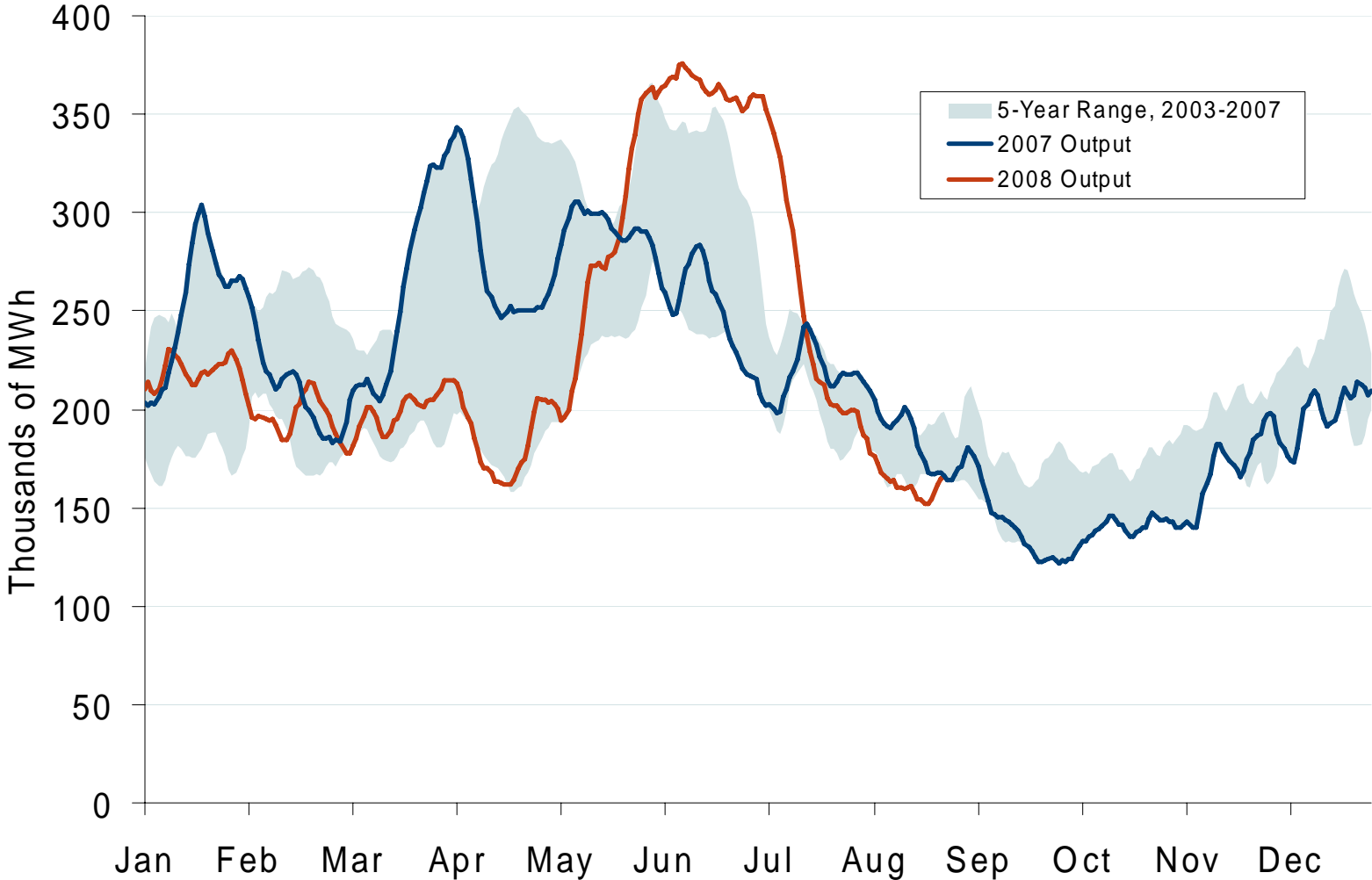
Source: Derived from USACE data.

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.

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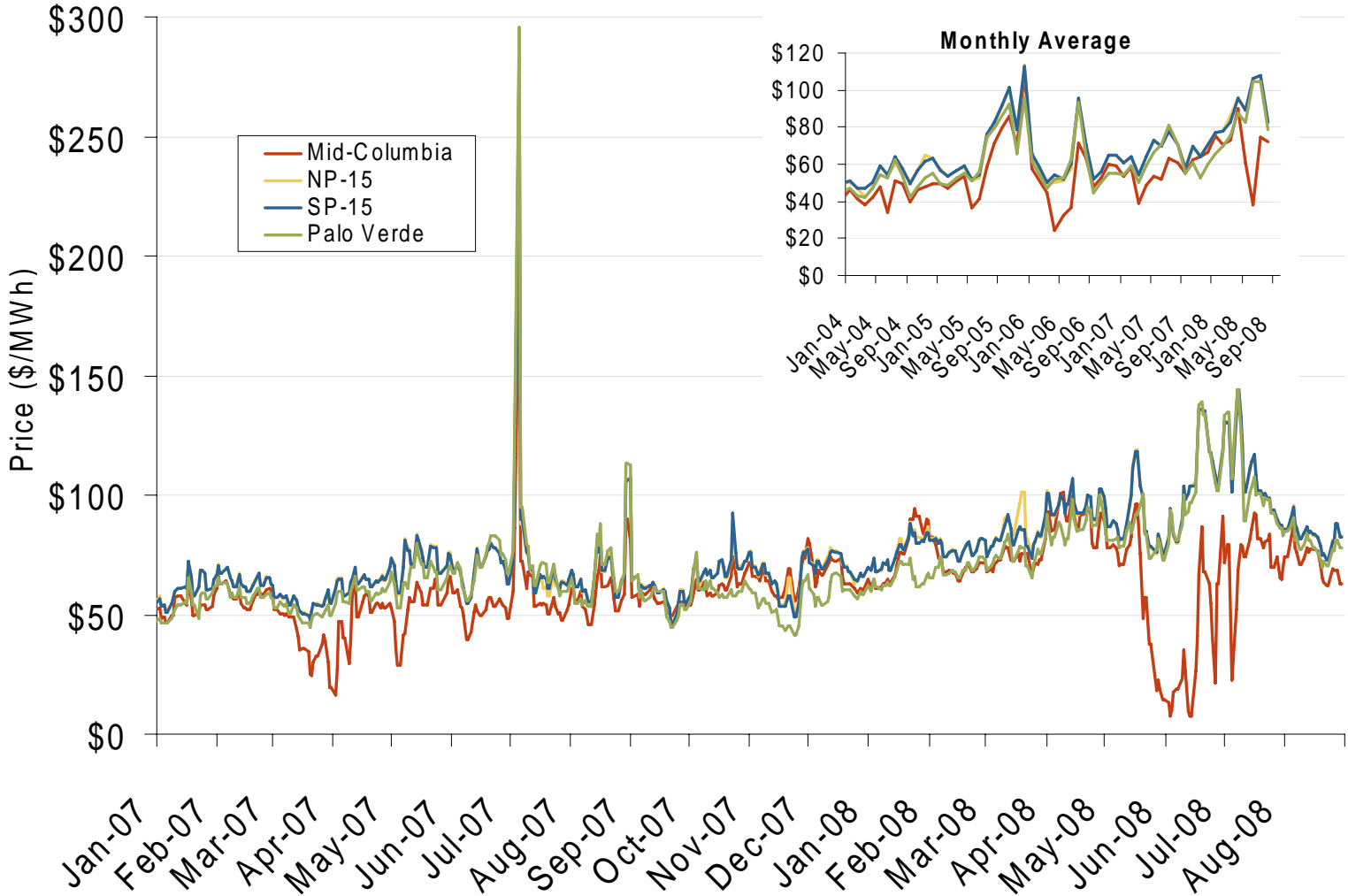


# Prices and Market Analysis

- **Electric**
- **Natural Gas**
- **Other Markets**

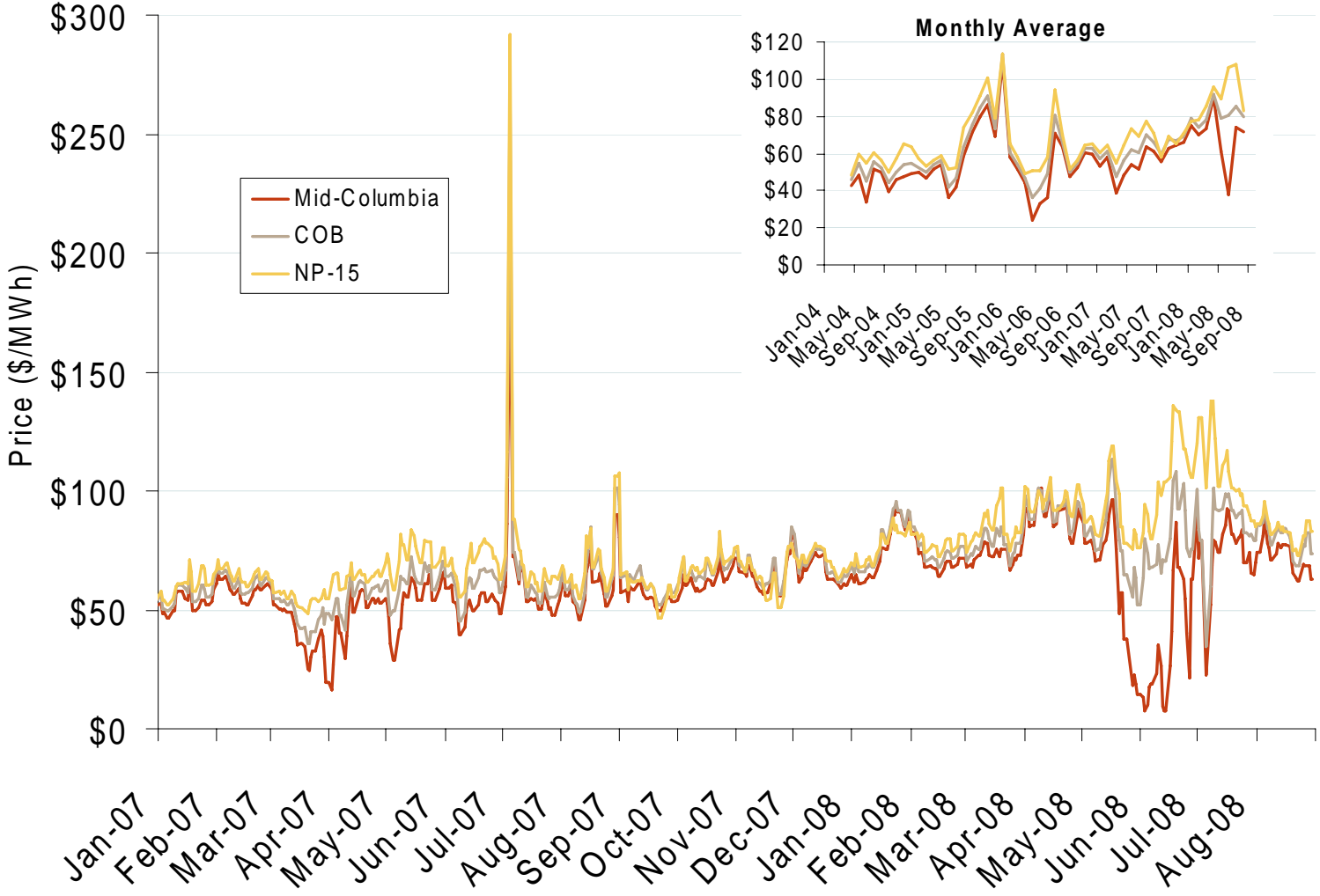


# Western Daily Bilateral Day-Ahead On-Peak Prices



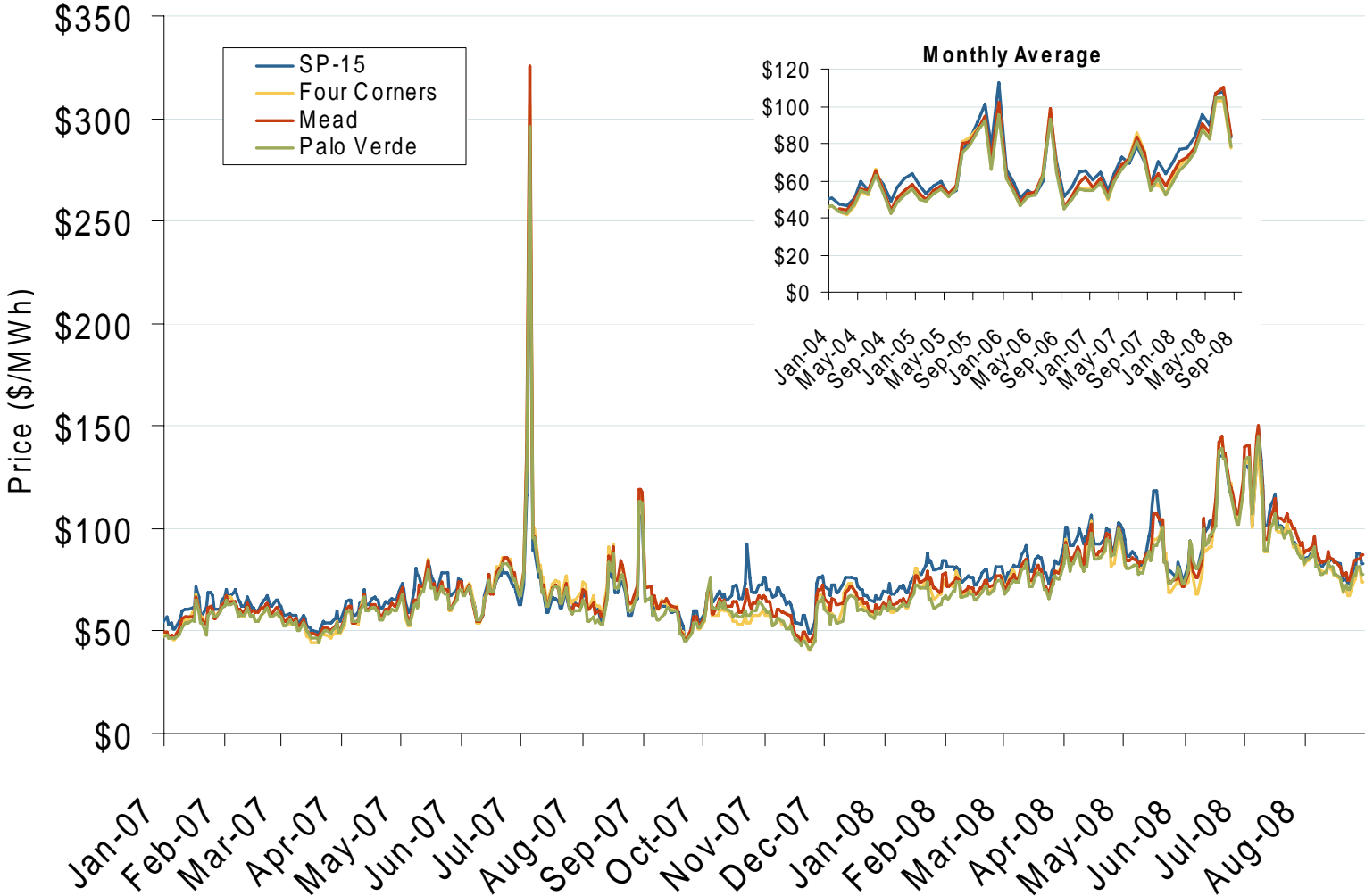
Source: Derived from *Platts* data.  
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# Northwestern Daily Bilateral Day-Ahead On-Peak Prices



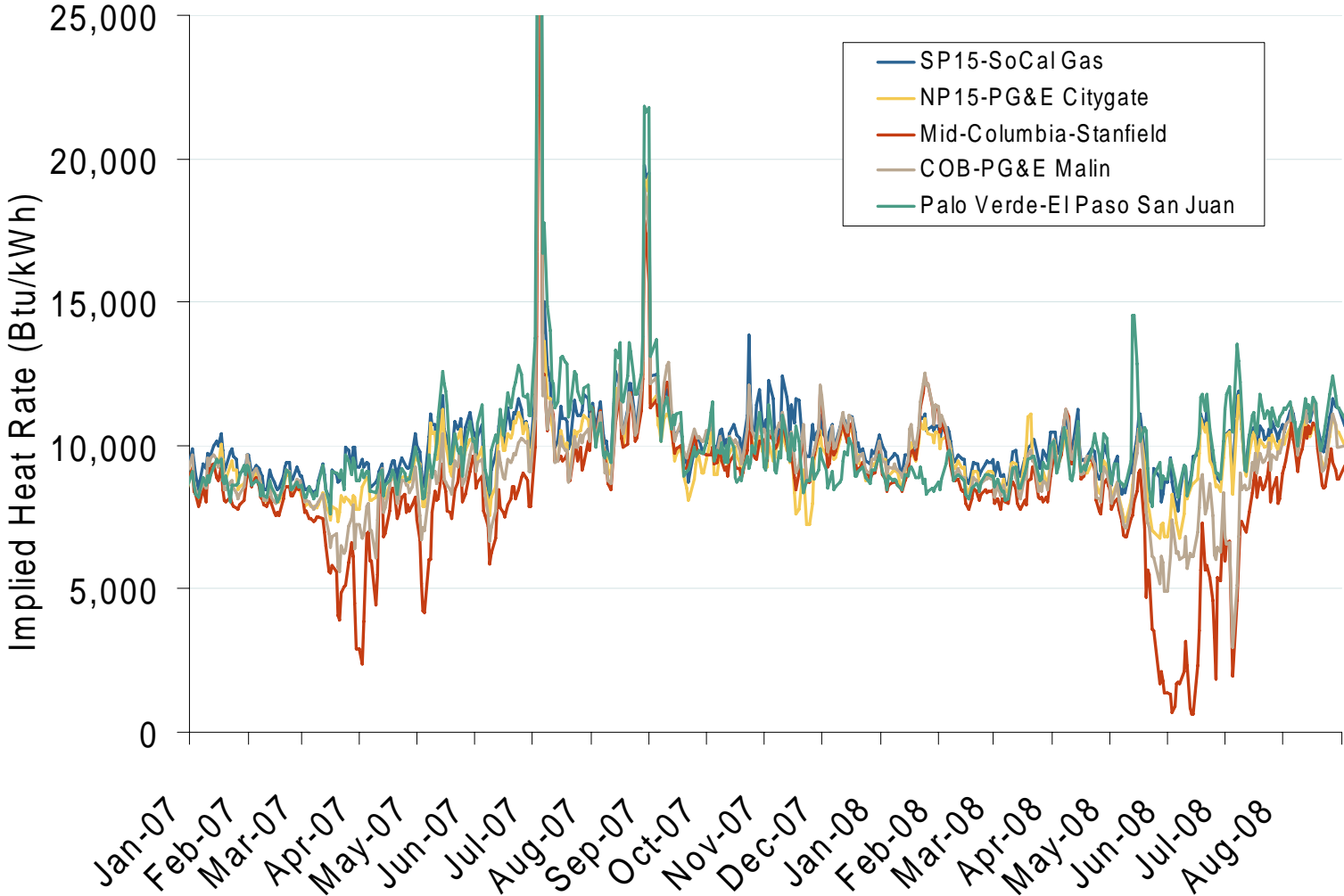
Source: Derived from *Platts* data.  
September 2008 Western Snapshot Report

# Southwestern Daily Bilateral Day-Ahead On-Peak Prices



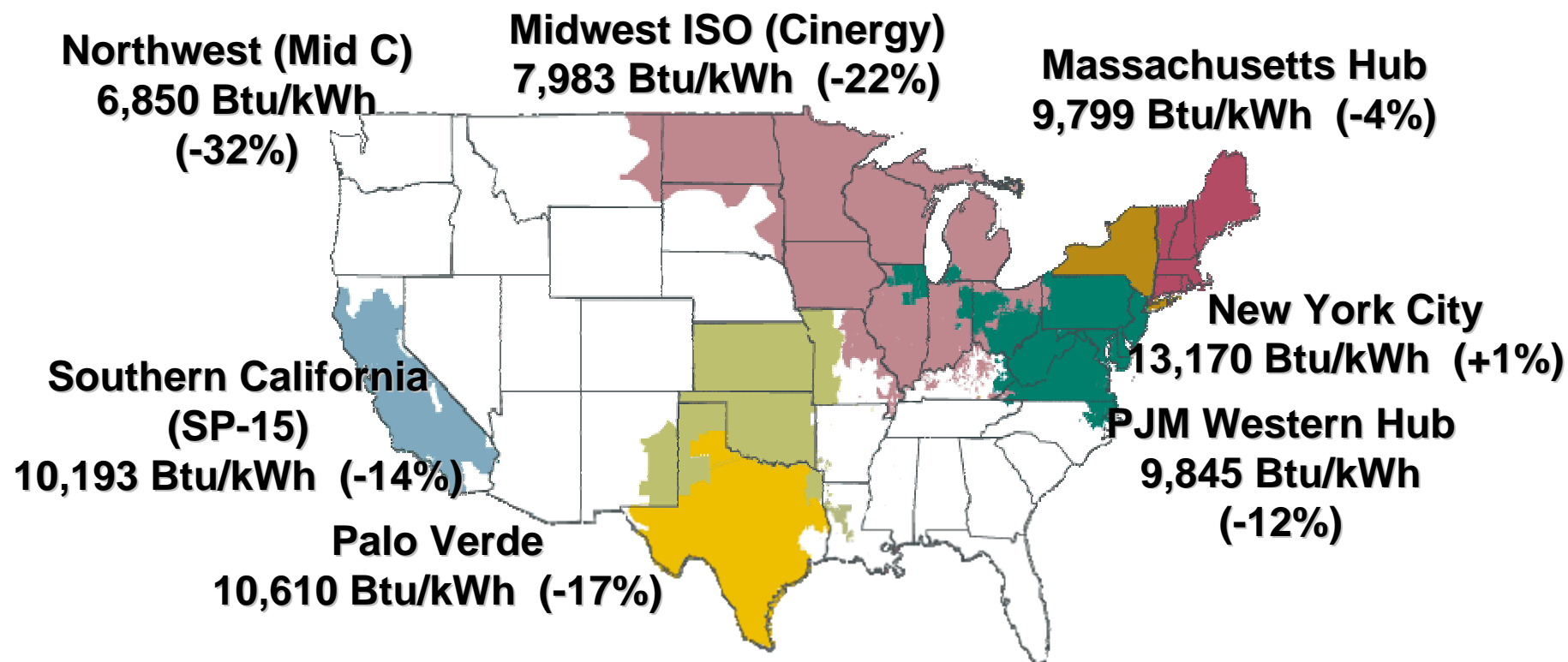
Source: Derived from *Platts* data.  
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# Implied Heat Rates at Western Trading Points

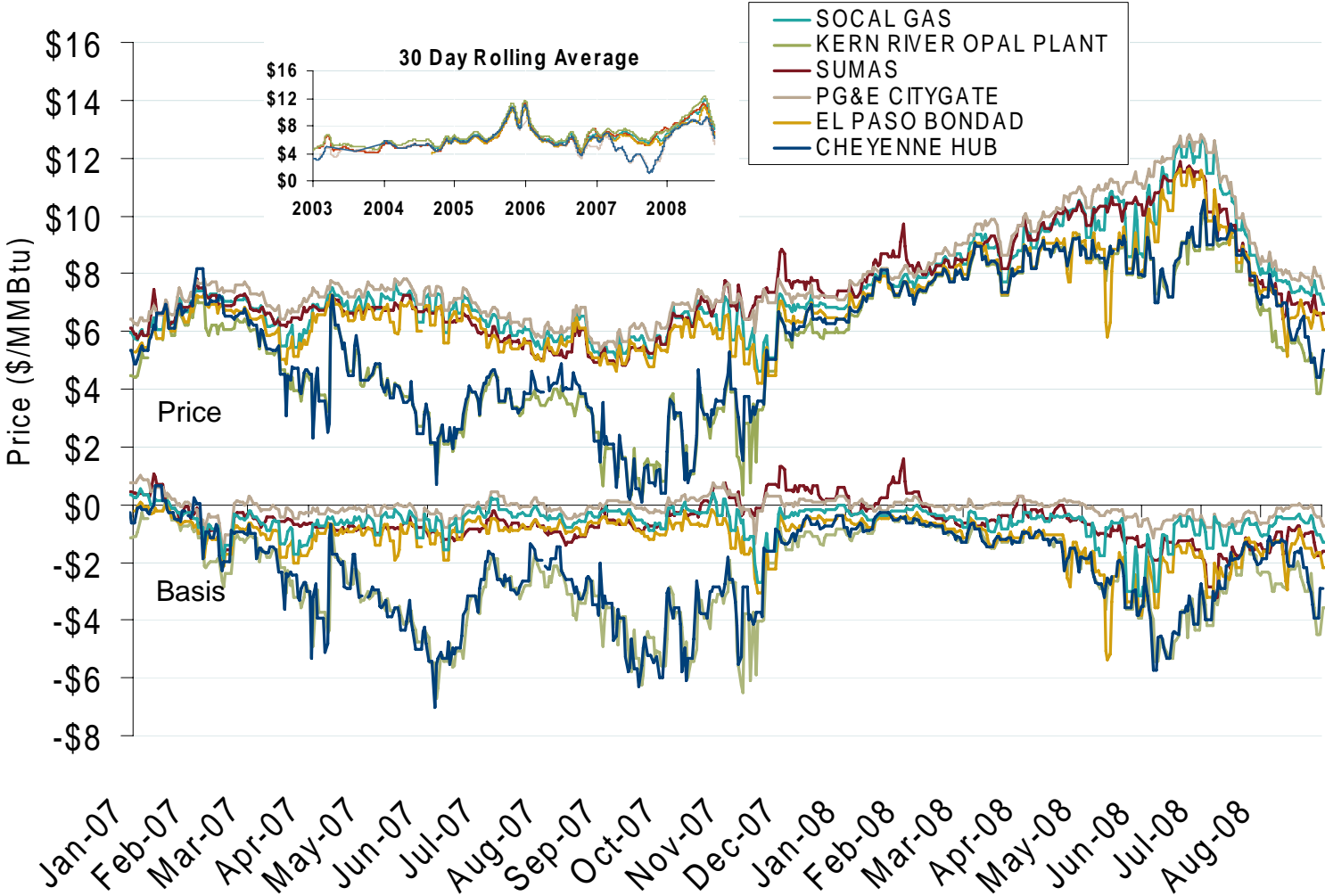


Source: Derived from *Platts* data  
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## June-August Implied Heat Rates, 2008 vs. 2007

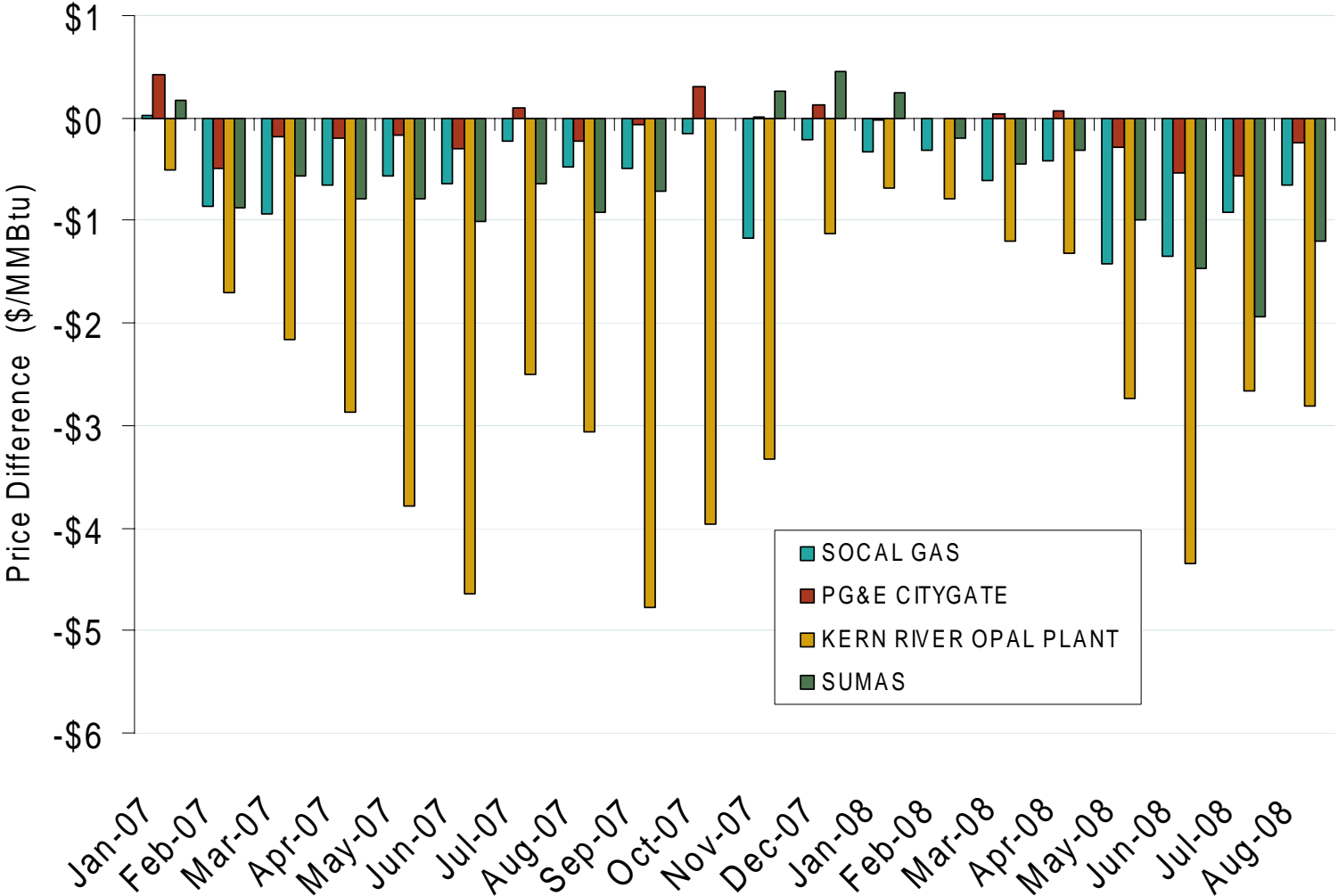


# Western Day-Ahead Hub Spot Prices and Basis



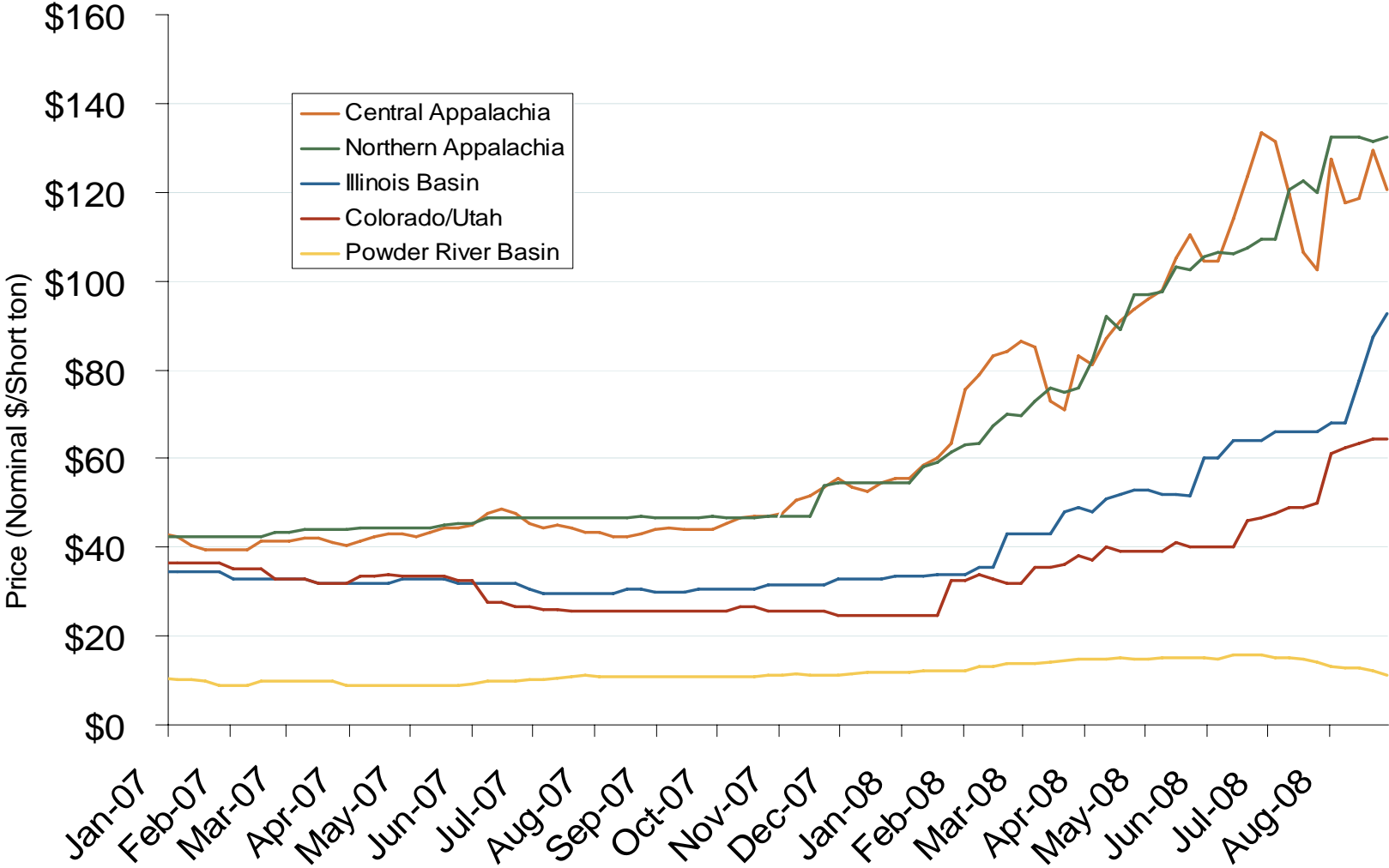
Source: Derived from *Platts* data.  
September 2008 Western Snapshot Report

# Western Monthly Average Basis Value to Henry Hub



Source: Derived from *Platts* data.  
September 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.  
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# Renewable Energy Portfolio Standards (RPS)

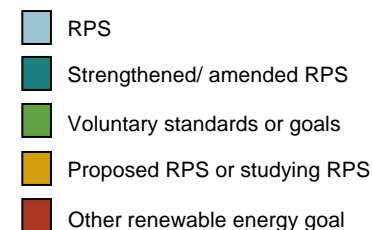
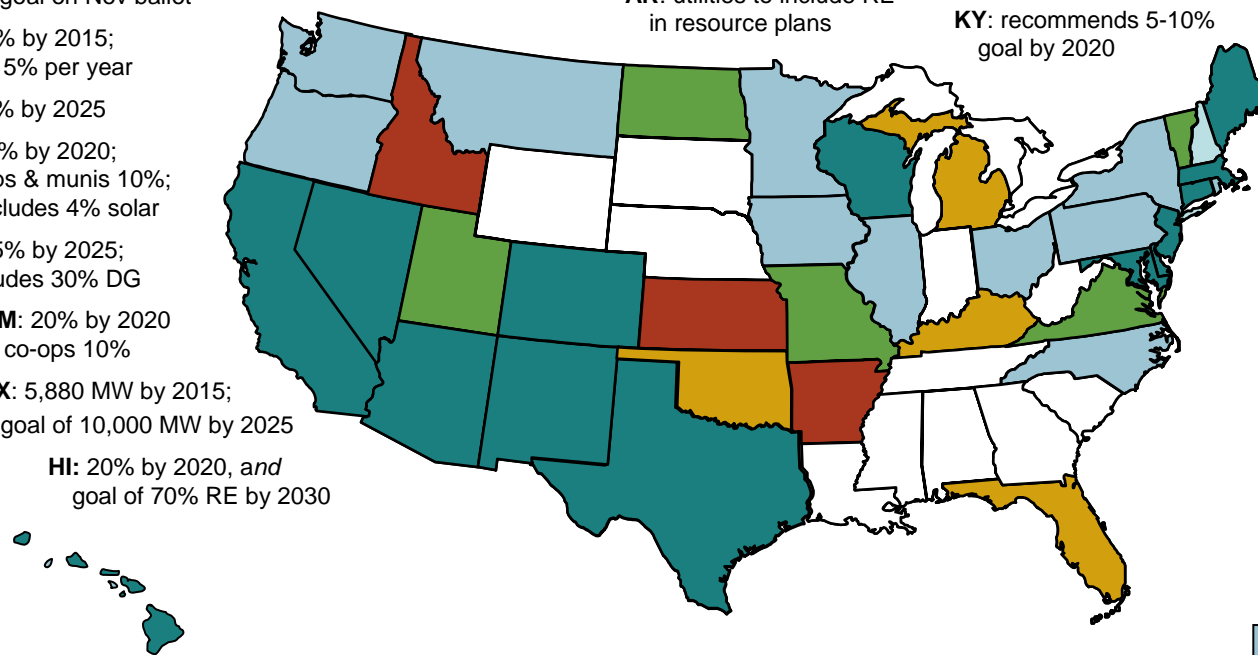
**WA:** 15% by 2020  
**OR:** 25% by 2025; small utilities 5-10%  
**CA:** 20% by 2010; goal of 33% by 2020; 50% goal on Nov ballot  
**NV:** 20% by 2015; solar 5% per year  
**UT:** 20% by 2025  
**CO:** 20% by 2020; co-ops & munis 10%; includes 4% solar  
**AZ:** 15% by 2025; includes 30% DG  
**NM:** 20% by 2020 co-ops 10%  
**TX:** 5,880 MW by 2015; goal of 10,000 MW by 2025  
**HI:** 20% by 2020, and goal of 70% RE by 2030

**MT:** 15% by 2015  
**ND:** 10% by 2015  
**KS:** 20% wind by 2020  
**OK:** studying RPS, RE transmission, cost-recovery

**MN:** 25% by 2025 Xcel 30% by 2020  
**IA:** 1,105 MW by 2011\*  
**MO:** 11% by 2020; ballot initiative for mandate  
**AR:** utilities to include RE in resource plans

**WI:** 10% by 2015  
**IL:** 25% by 2025  
**MI:** different bills passed by House and Senate  
**OH:** 12.5% by 2025, with 0.5% solar  
**KY:** recommends 5-10% goal by 2020

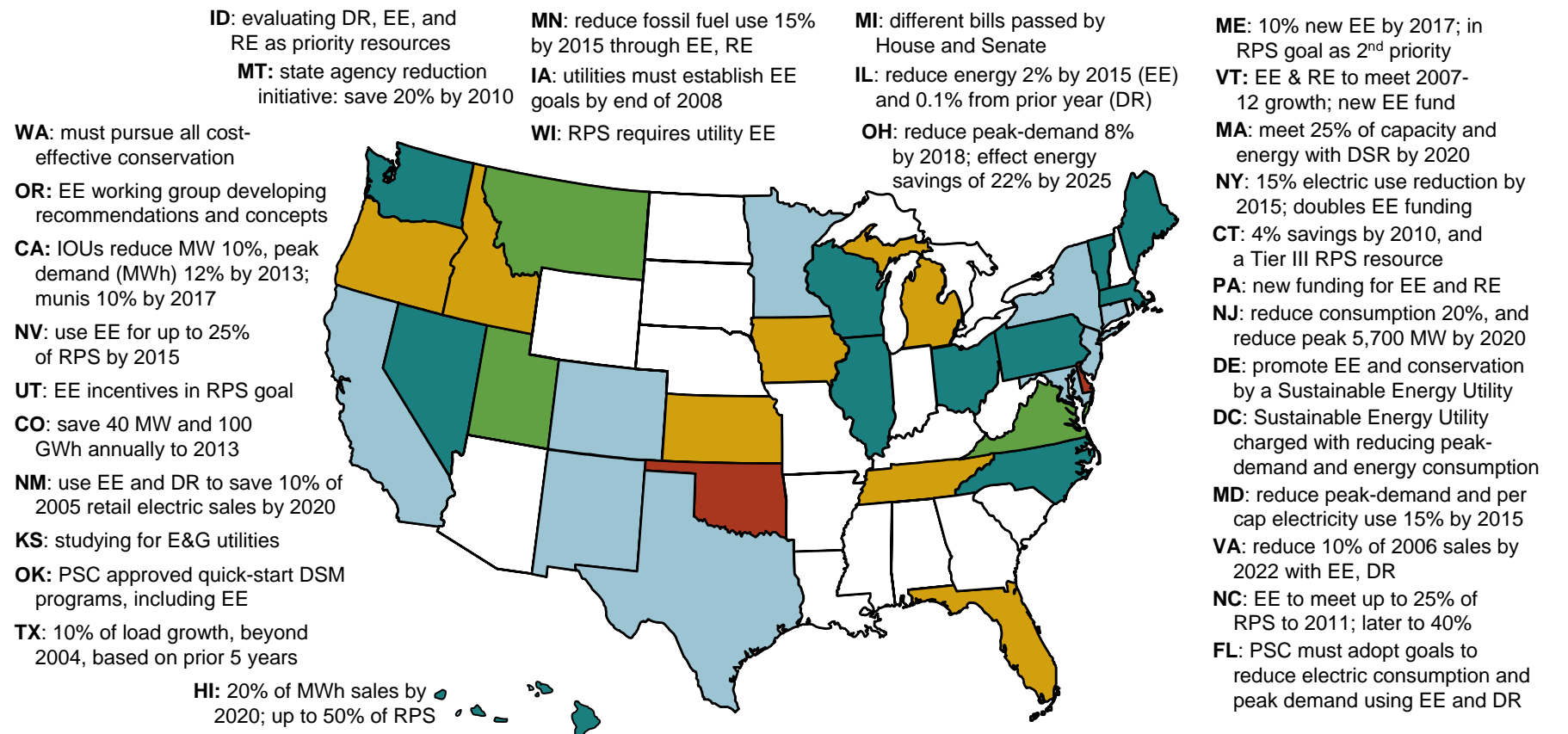
**ME:** 40% by 2017  
**NH:** 23.8% BY 2025  
**VT:** 25% by 2025  
**MA:** doubles RPS - 15% by 2020; goal of 250 MW solar by 2017  
**RI:** 16% by 2019  
**CT:** 23% Class I/II by 2020 4% Class III by 2010  
**NY:** 24% by 2013  
**PA:** 8% Tier I, 10% Tier II by 2020; solar set-aside  
**NJ:** 22.5% by 2020, with 2% solar  
**DE:** 20% by 2019, with 2% solar  
**DC:** doubles RPS - 20% by 2020; no less than 0.4% solar  
**MD:** 20% by 2022, with 2% solar  
**VA:** 12% by 2022  
**NC:** 12.5% by 2021 co-ops & munis: 10% by 2018  
**FL:** law directs PSC to write RPS regulations



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

**Notes:** Alaska has no RPS; DG is distributed generation; \* Iowa has a goal of 1,000 MW of wind by 2010  
**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.

## Energy Efficiency Resource Standards (EERS)



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

Abbreviations: CHP – Combined heat & power; DR - demand response; DSM - demand side management; DSR – demand-side resources; EE - energy efficiency; E&G: electric and gas utilities; RPS: Renewable Portfolio Standard

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