# OE ENERGY MARKET SNAPSHOT

## Western States Version – August 2008 Data

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

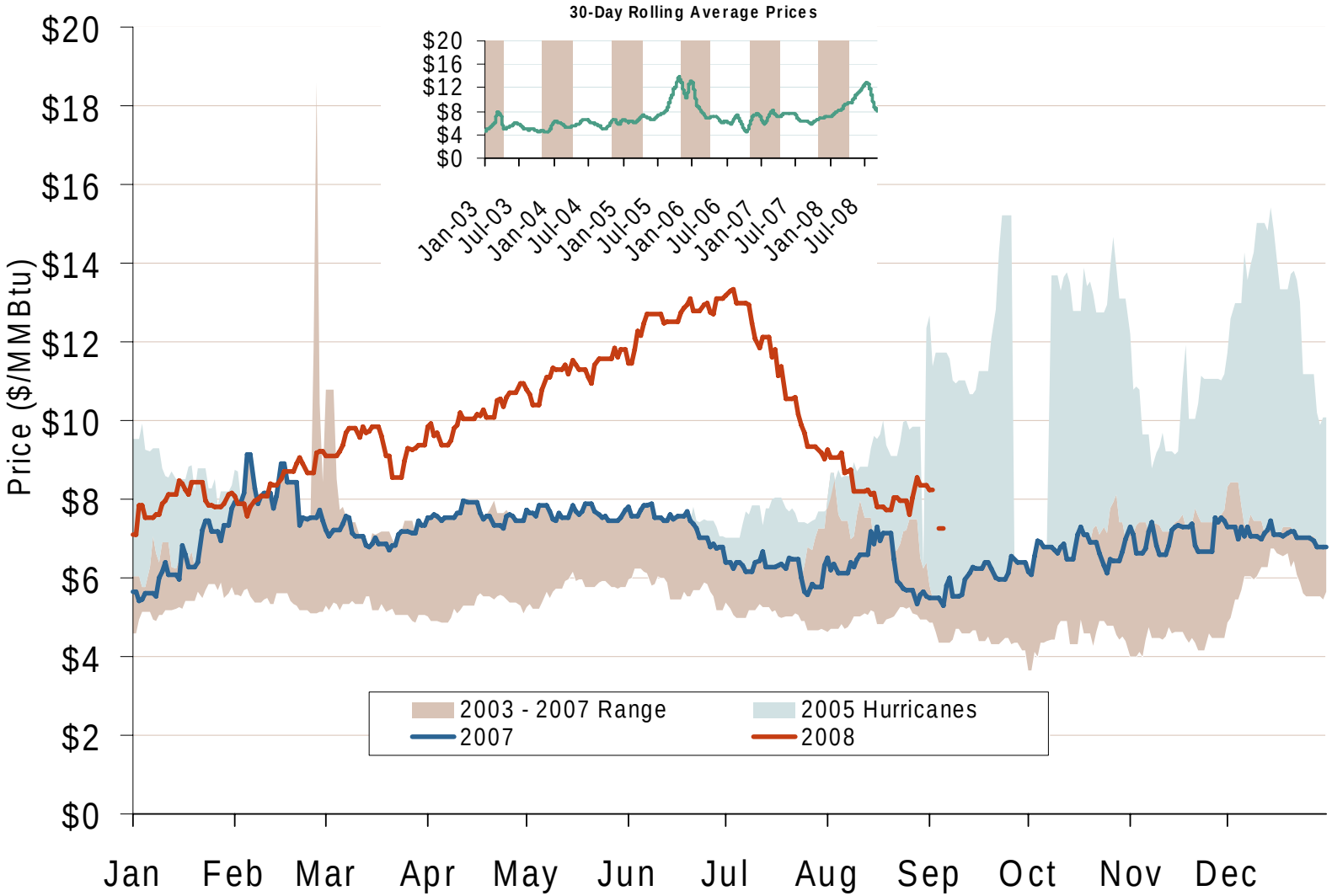
Office of Enforcement
Federal Energy Regulatory Commission
September 2008

# Special Report:

## Natural Gas Price Decline II

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.

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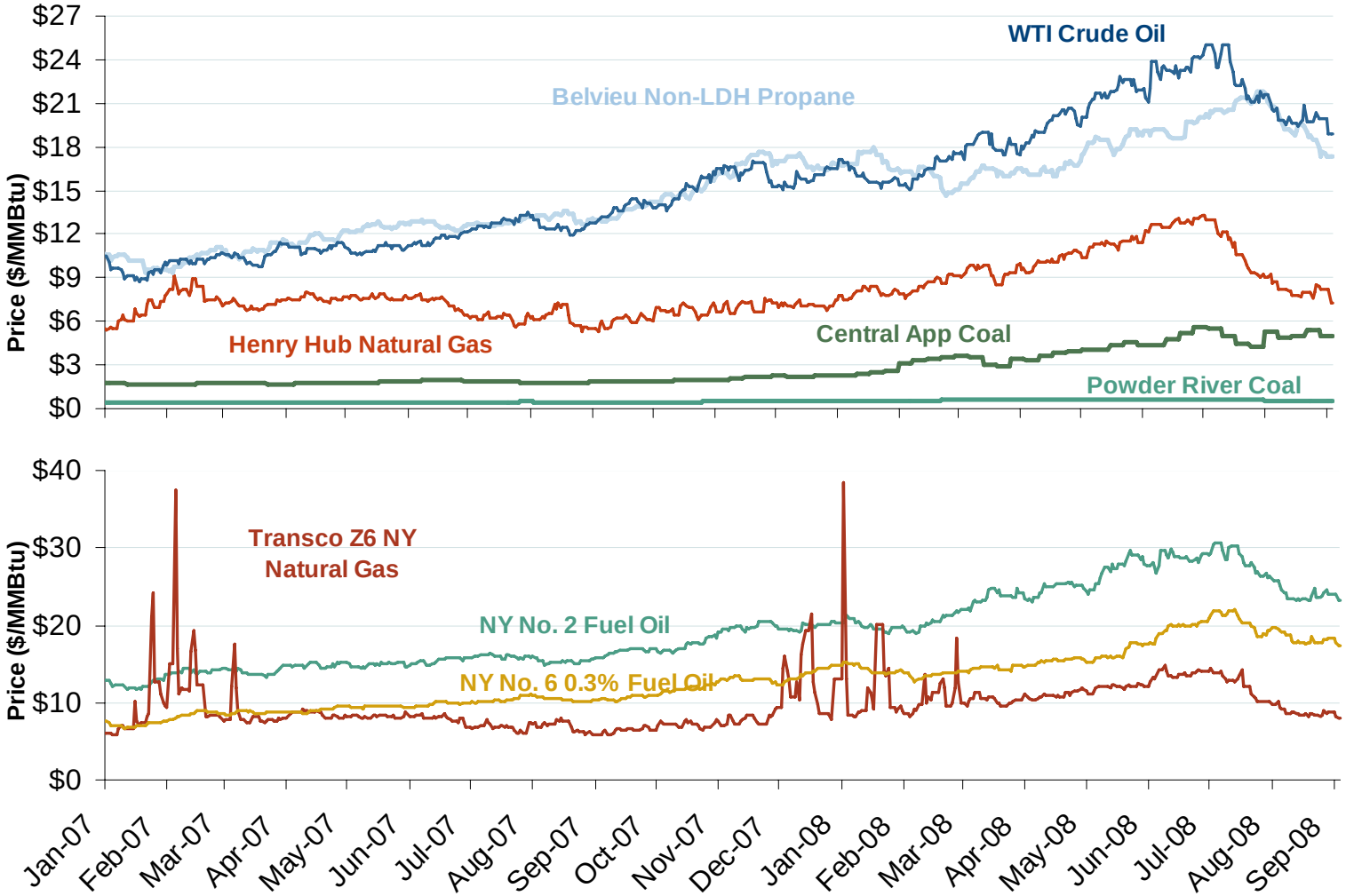
# Oil, Coal, Natural Gas and Propane Daily Spot Prices




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.

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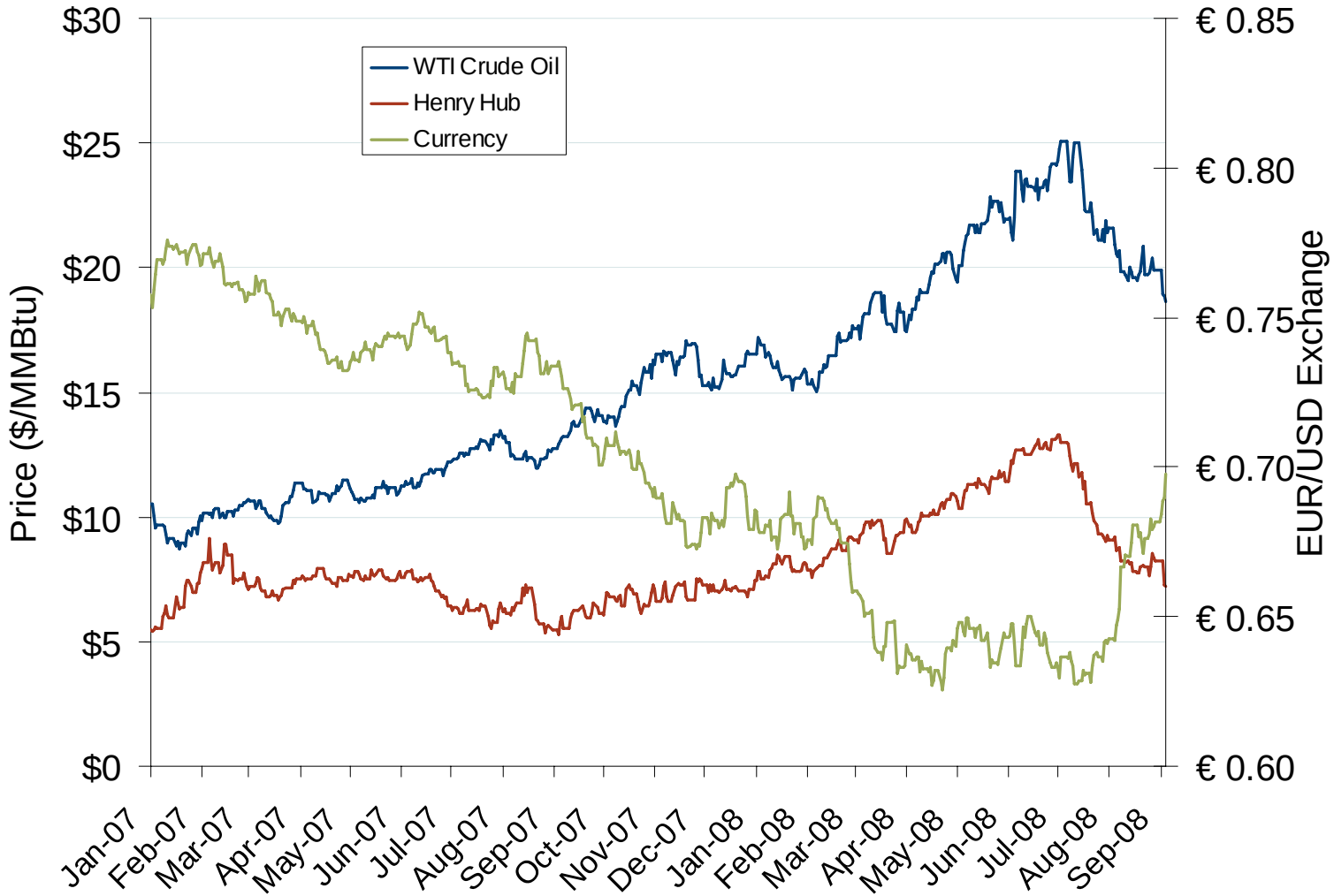
# Oil, Natural Gas and Currency Spot Prices




Source: Derived from *Bloomberg* data.

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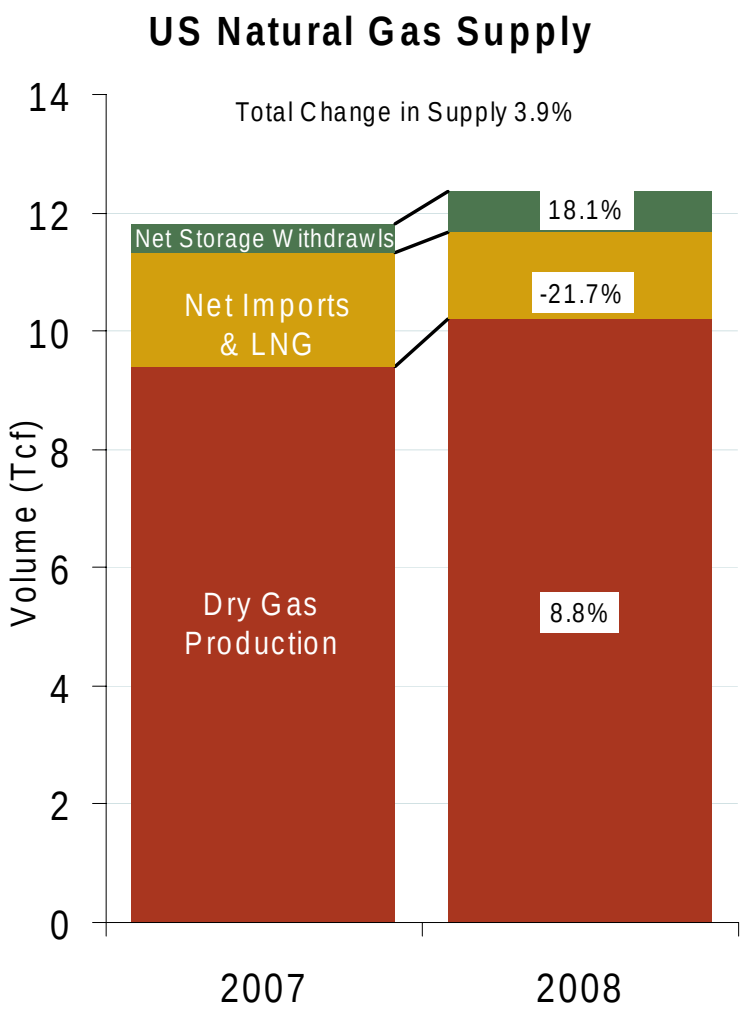
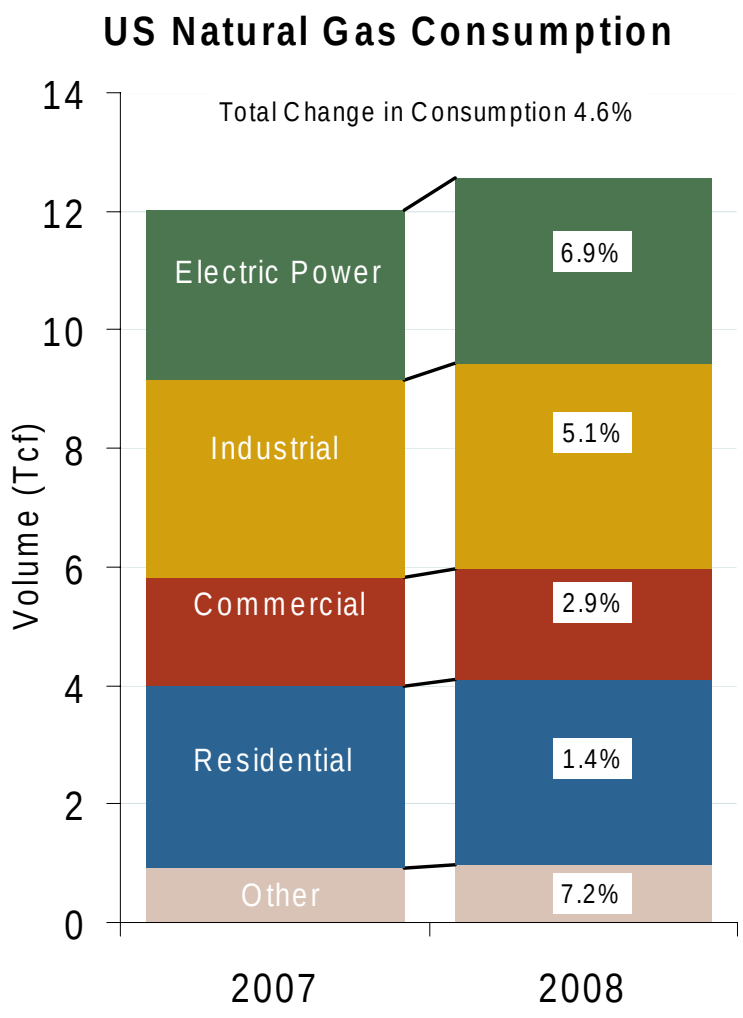
# U.S. Natural Gas Supply and Consumption Jan-Jun




Source: EIA Natural Gas Monthly, August 2008
September 2008 Western Snapshot Report

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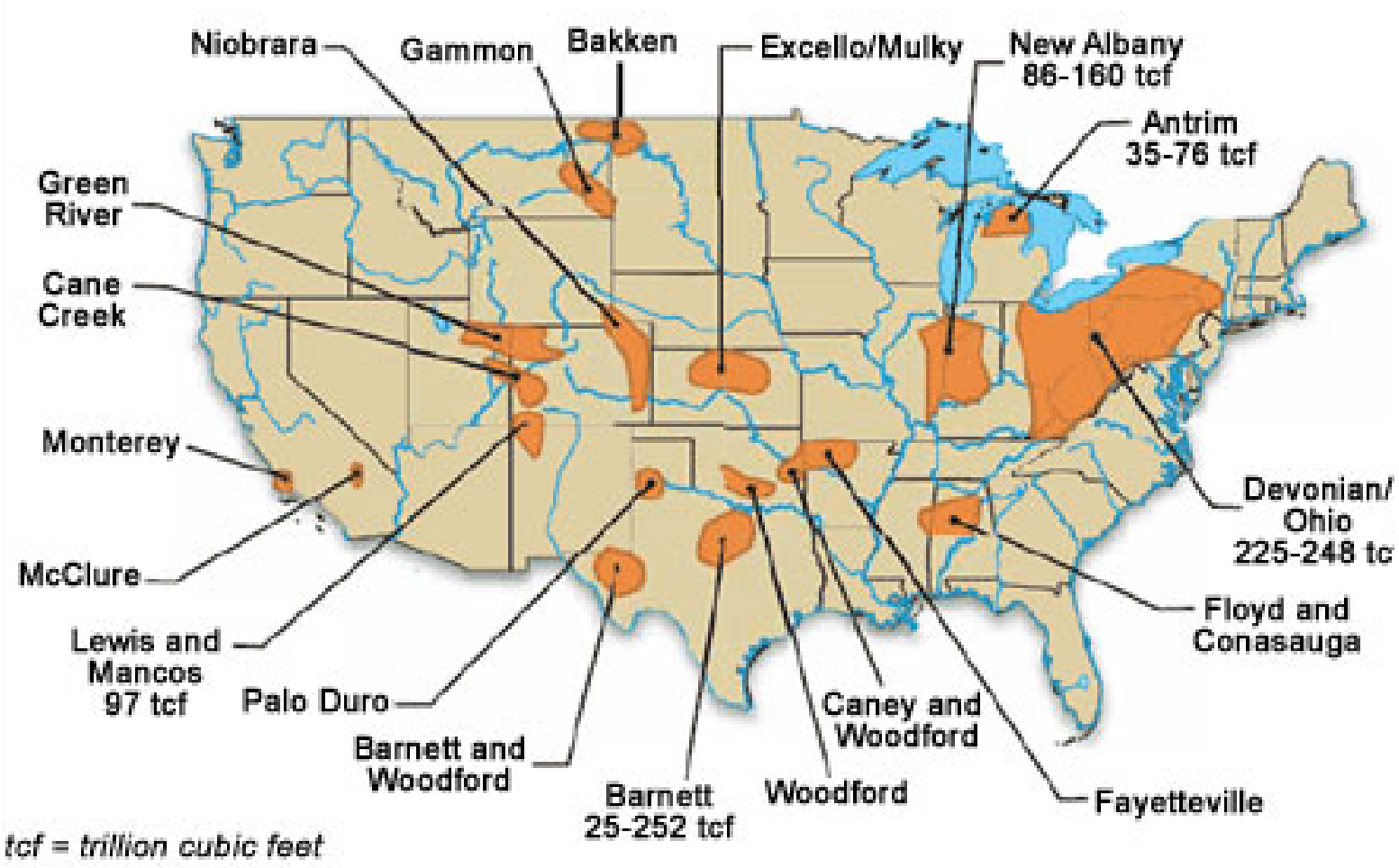
# Major US Shale Basins




Source: EIA, Schlumberger.
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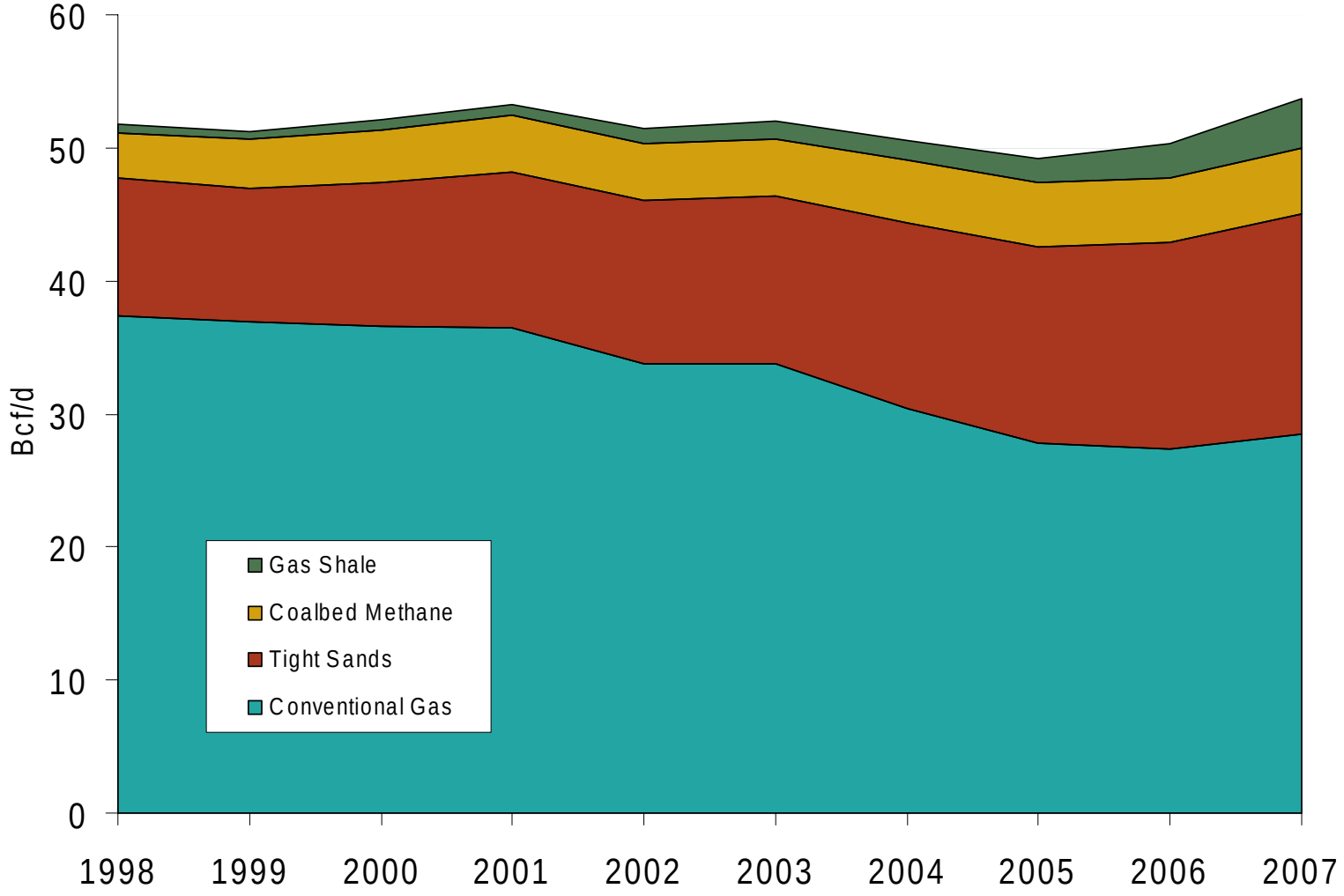
# US Natural Gas Production




Source: Derived from EIA data.
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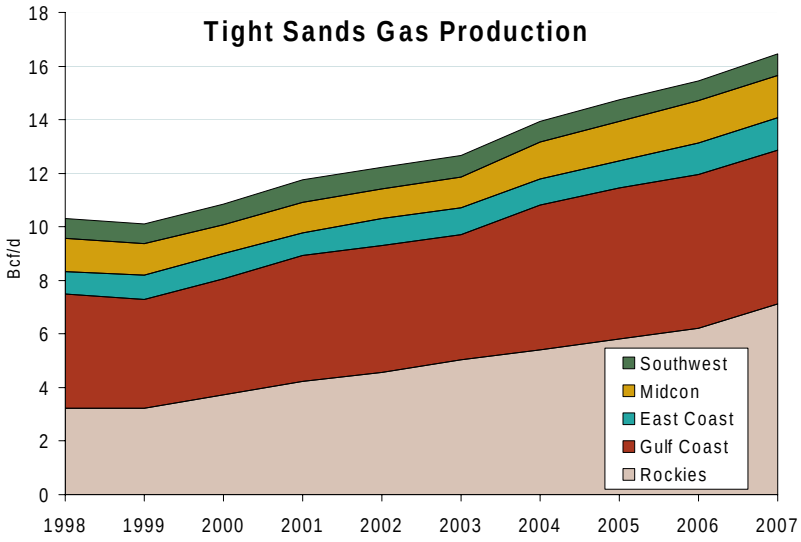
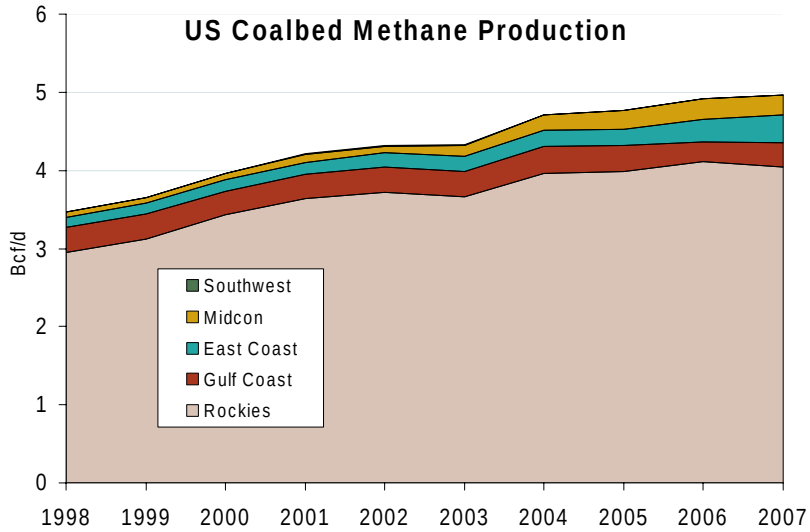
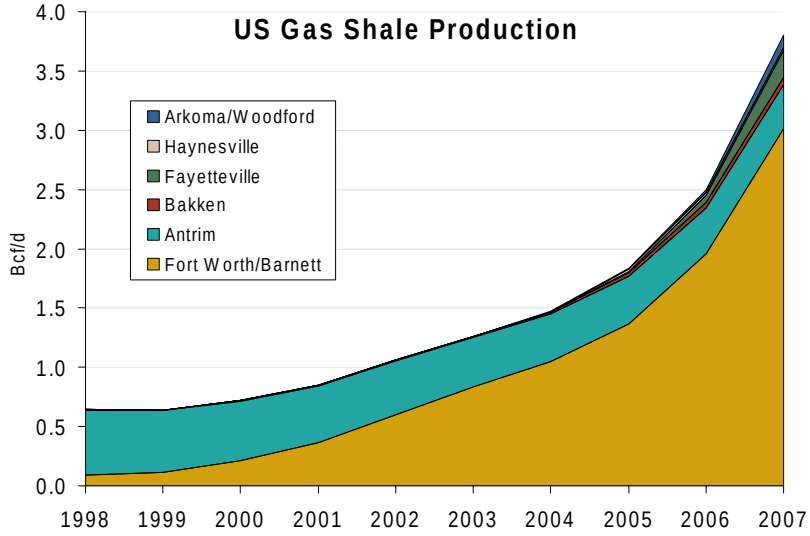
# "Unconventional" Natural Gas Production




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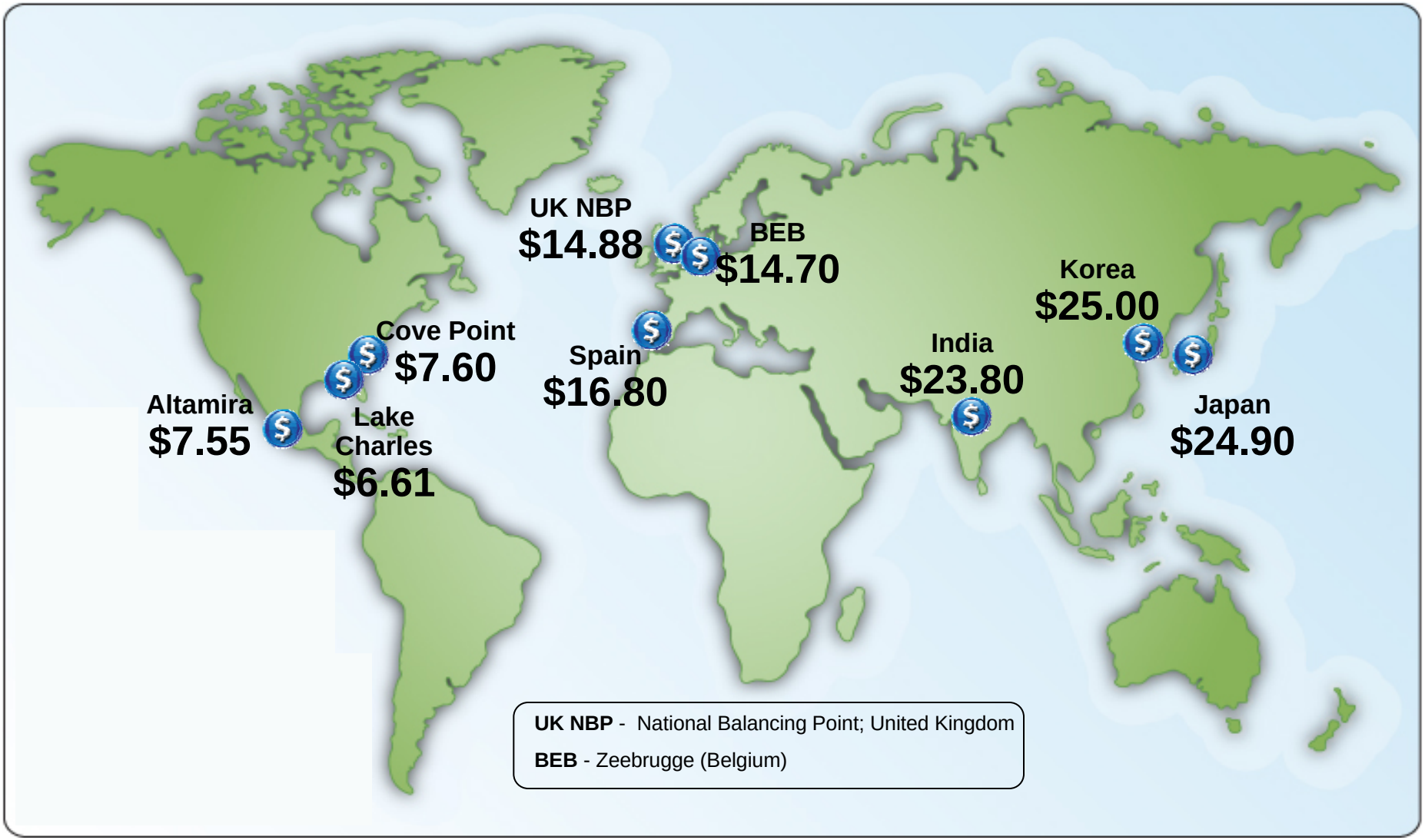
# World LNG Landed Price Estimates for October 2008




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

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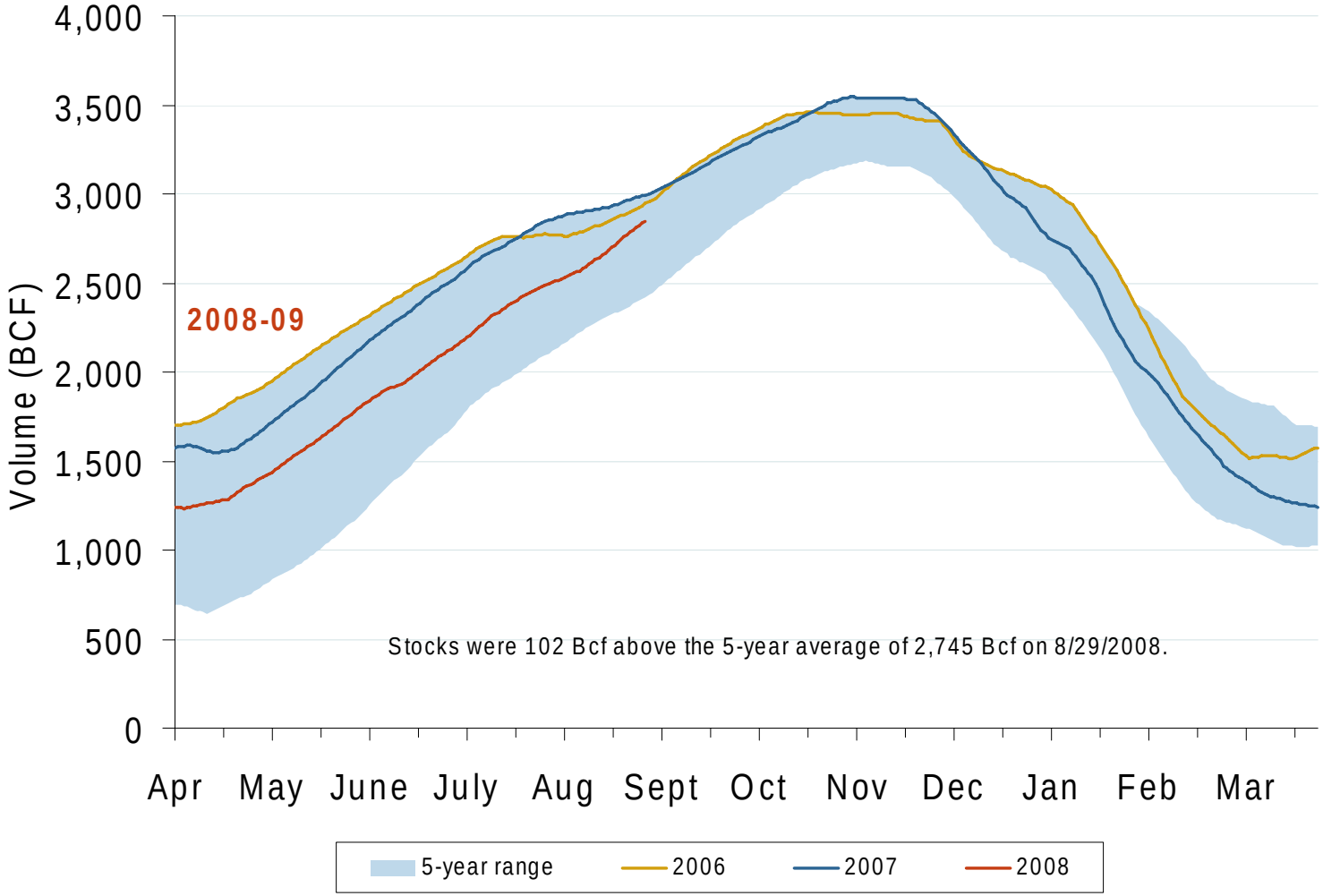
# Total U.S. Working Gas in Storage




Source: Derived from *EIA* data.
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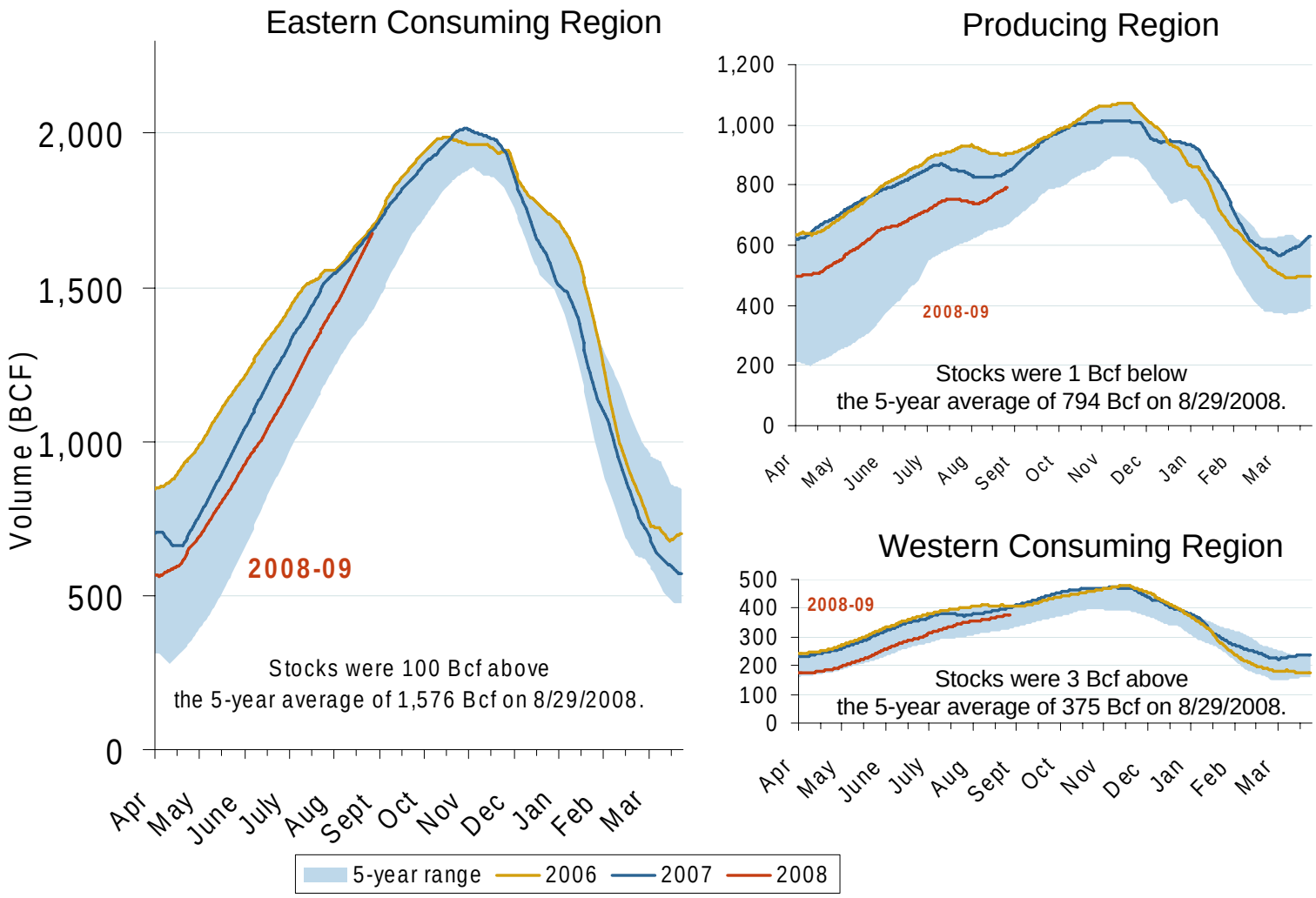
# Regional Totals of Working Gas in Storage




Source: Derived from *EIA* data.

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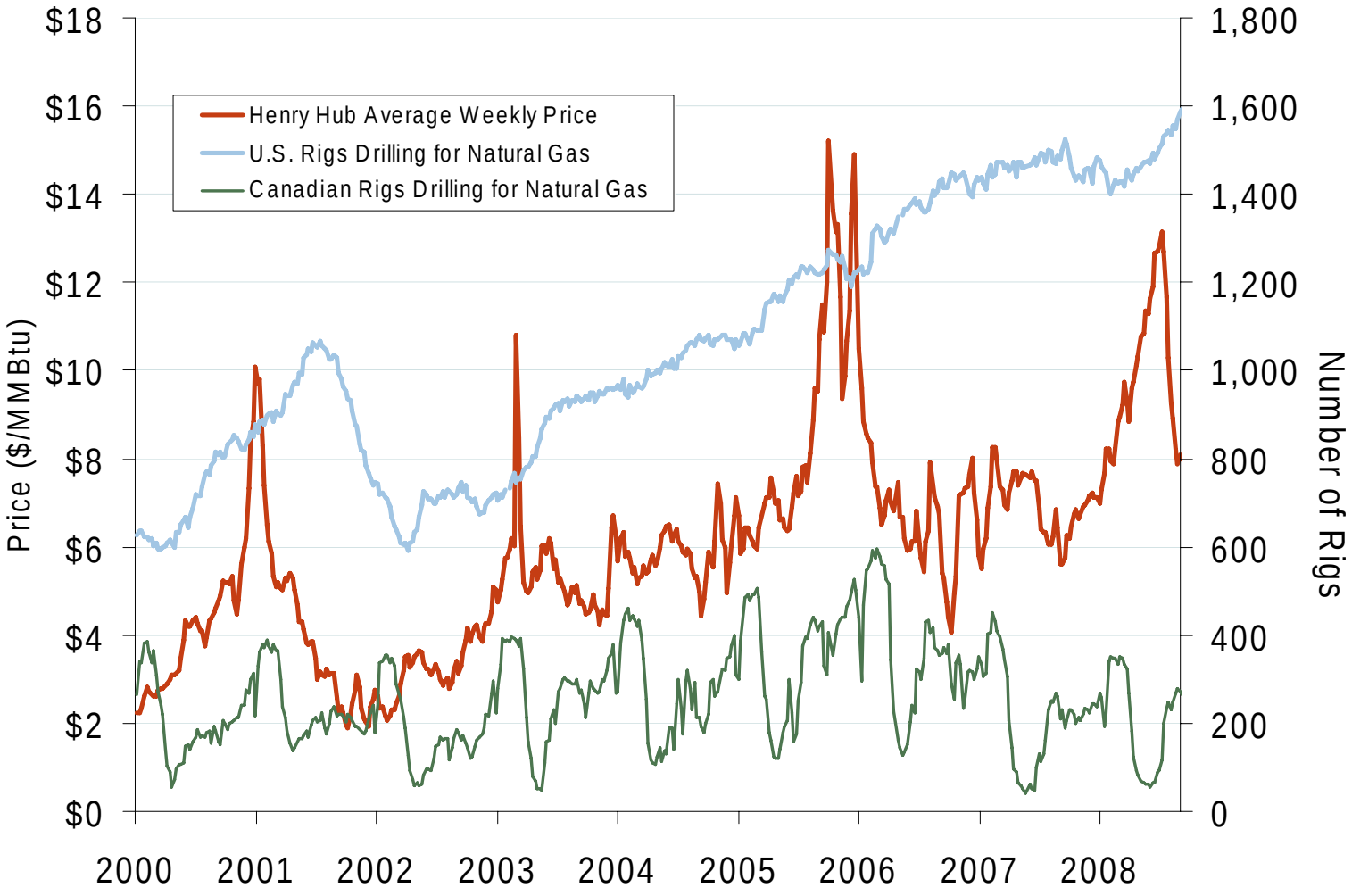
# U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices




Source: Derived from *Platts* and *Baker Hughes* data.

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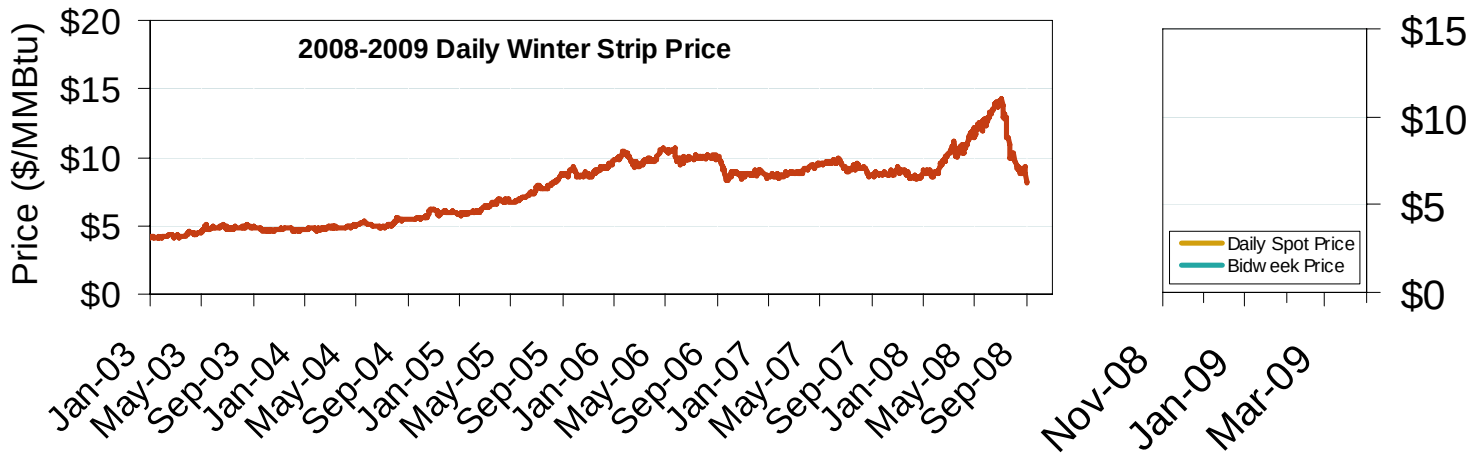
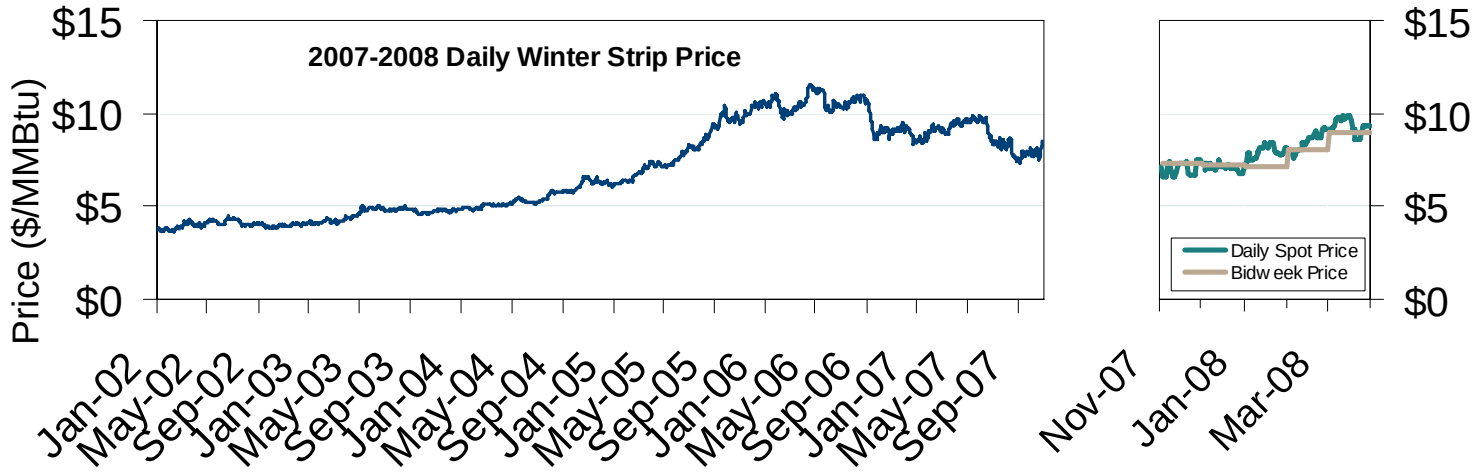
# Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices




Source: Derived from *Platts* and *Nymex* data.

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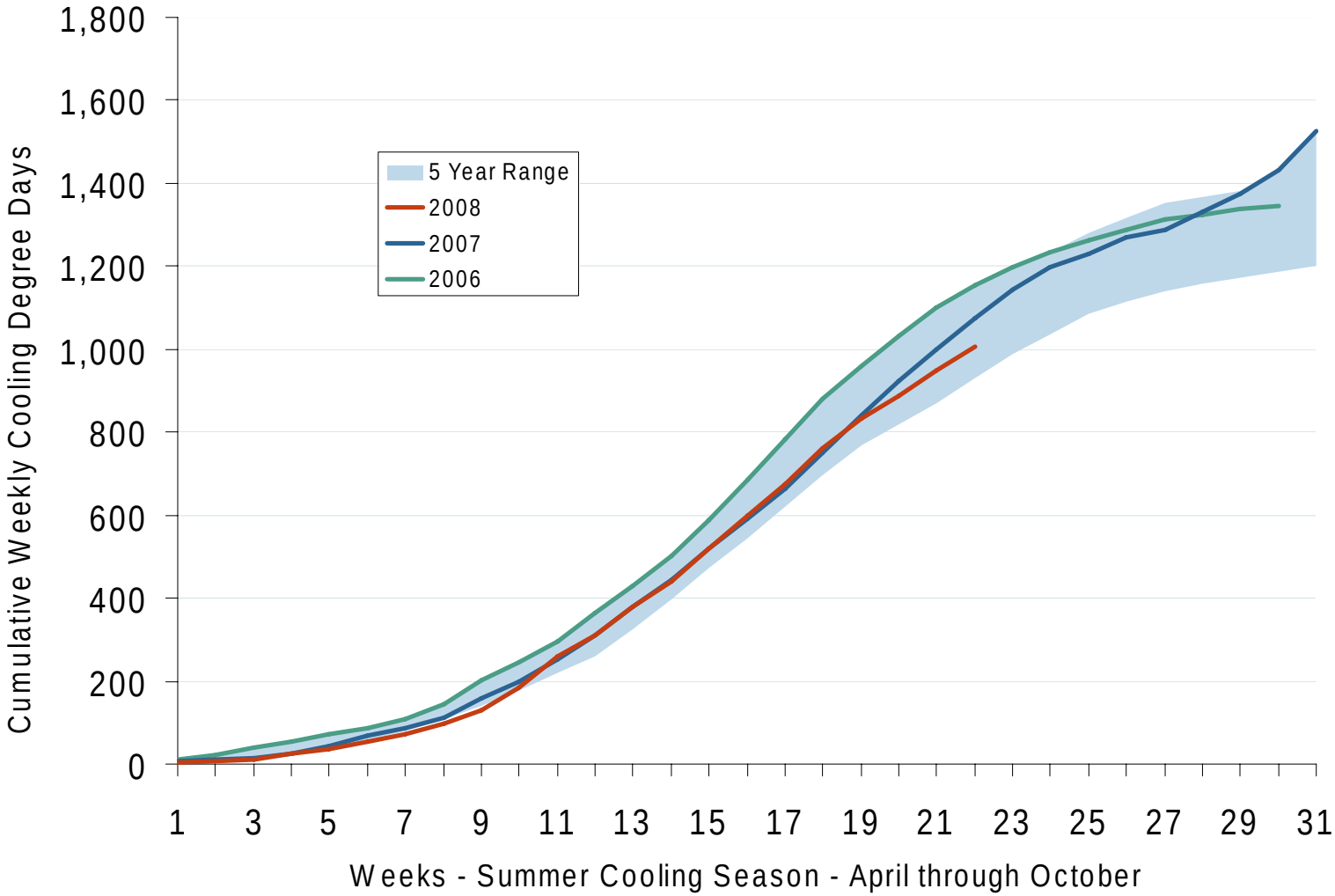
# Market Fundamentals

# U. S. Summer Cumulative Cooling Degree Days




Source: Derived from *NOAA* data.

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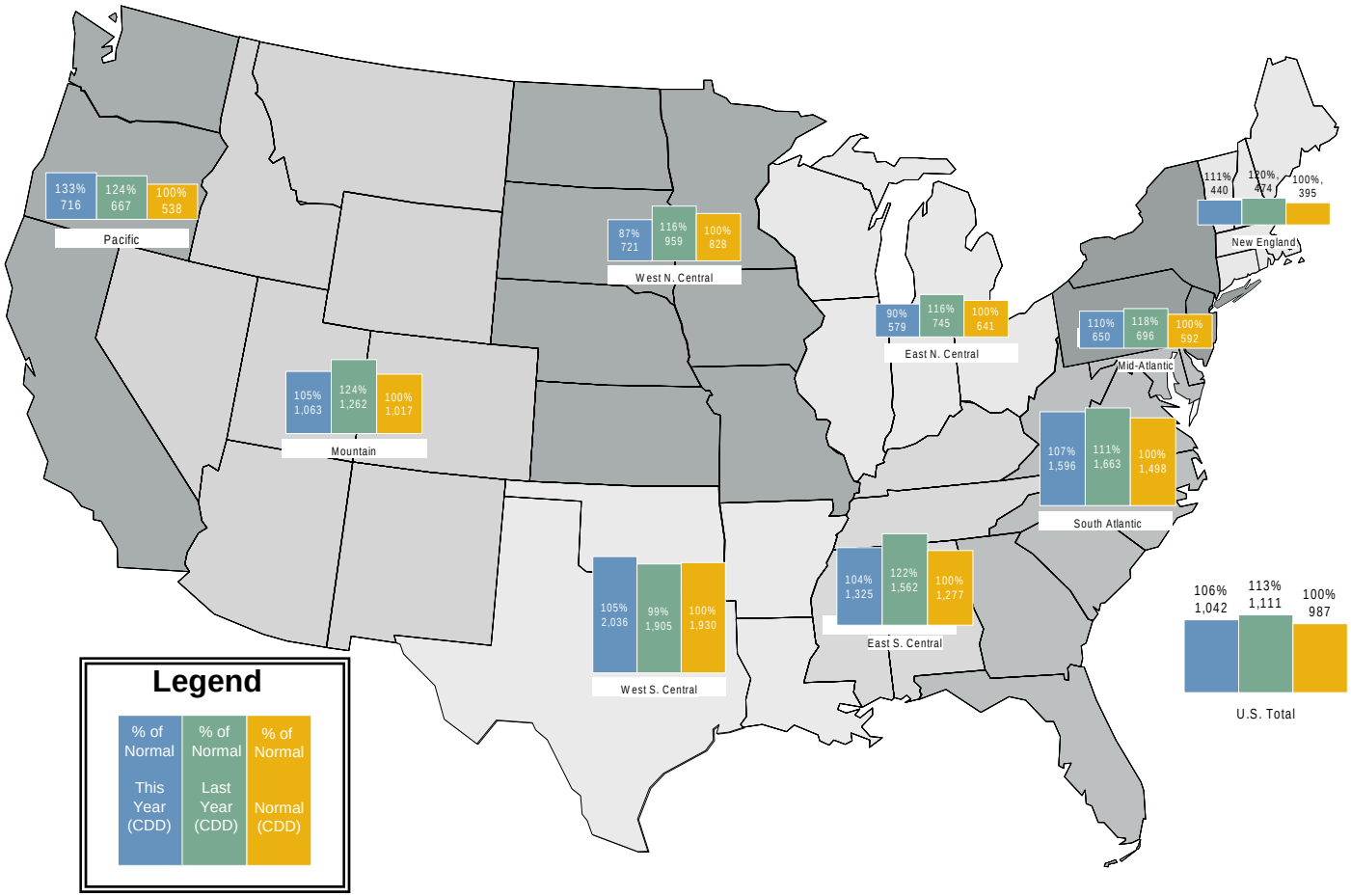
# Regional Cooling Degree Days
# 2008 Through August




Source: Derived from *NOAA* data. Normal is based on a 30-year average of cooling degree days.

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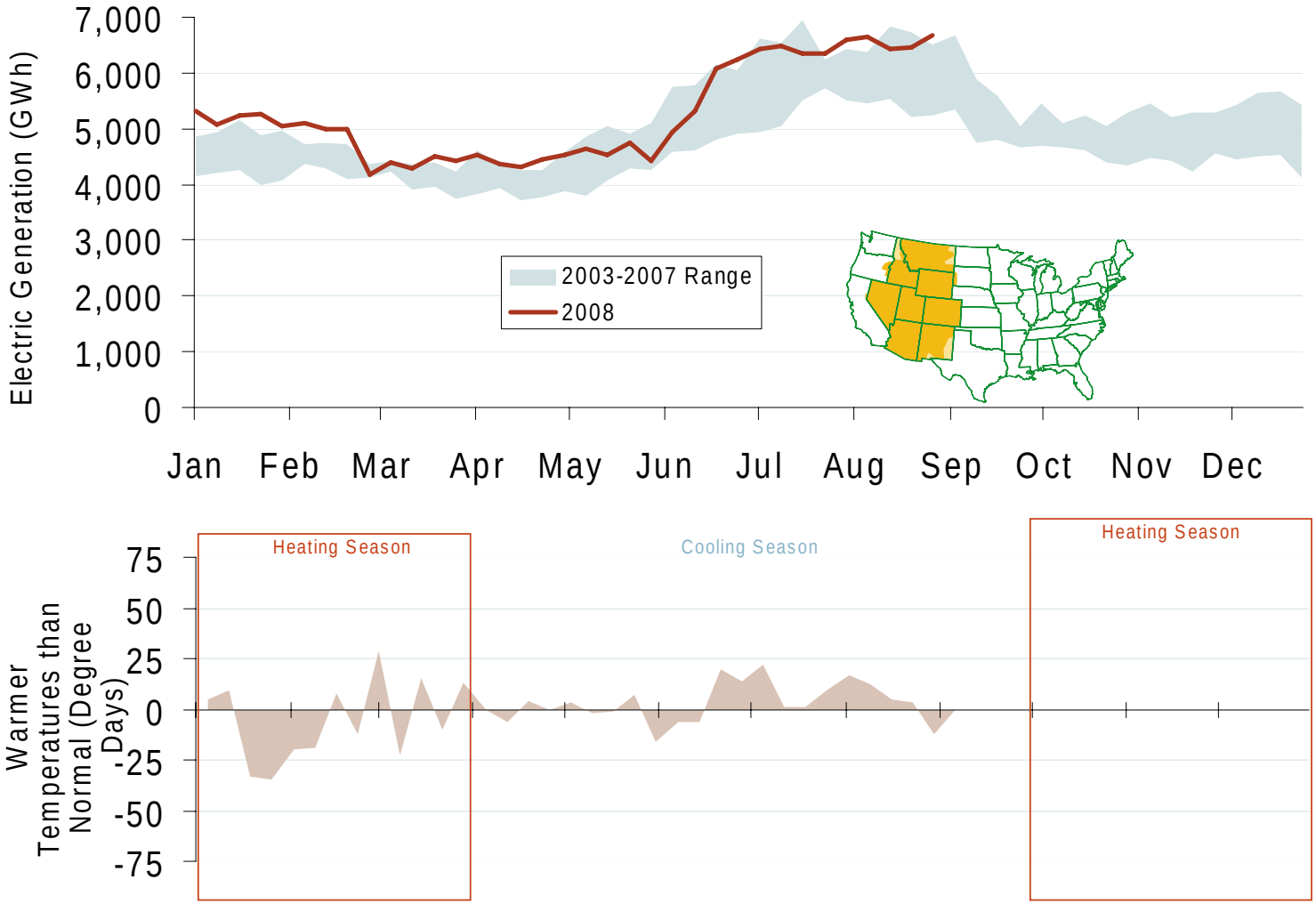
# Weekly Electric Generation Output and Temperatures Rocky Mountains Region




Source: Derived from *EEI* and *NOAA* data.

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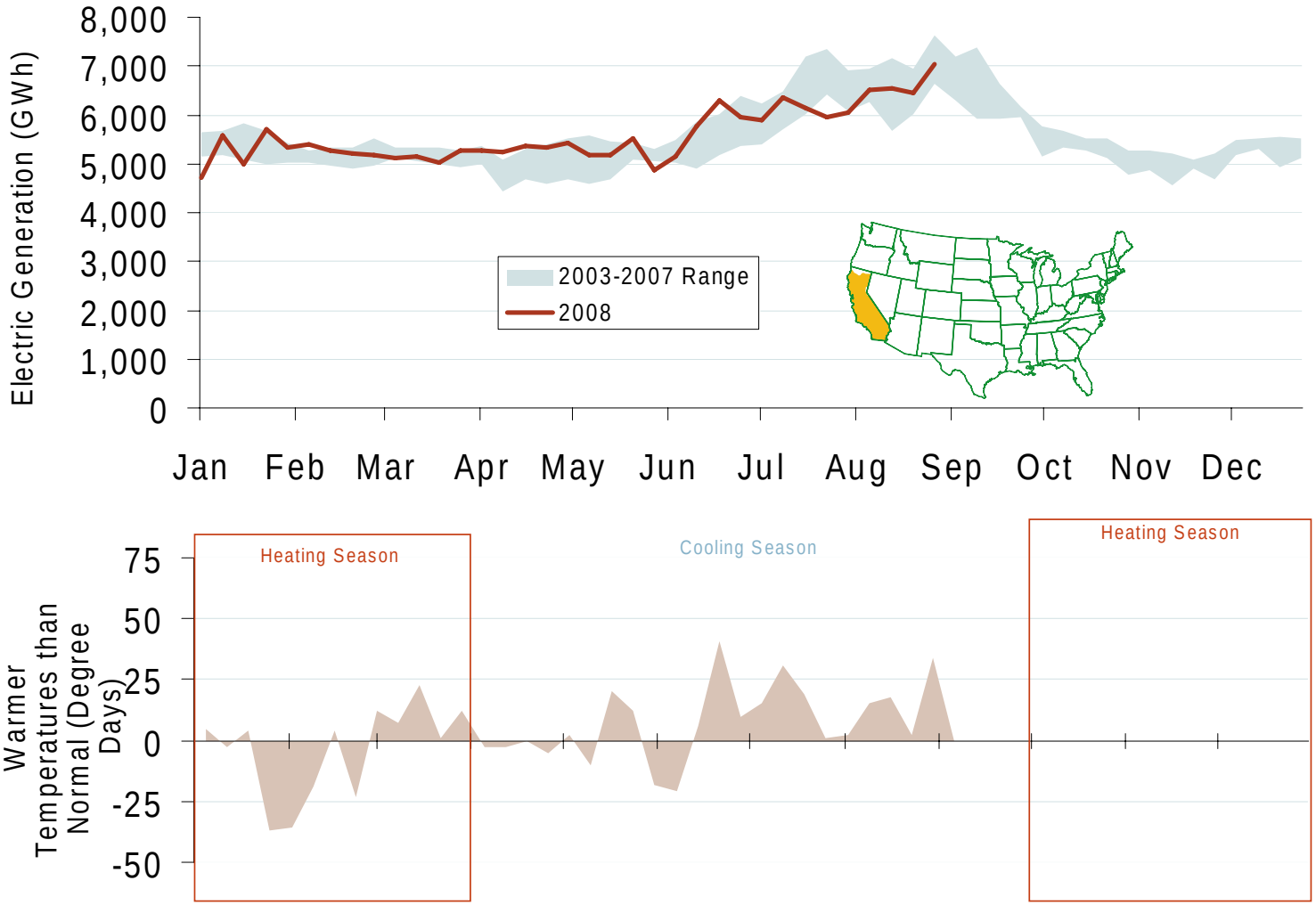
# Weekly Electric Generation Output and Temperatures California




Source: Derived from *EEI* and *NOAA* data.

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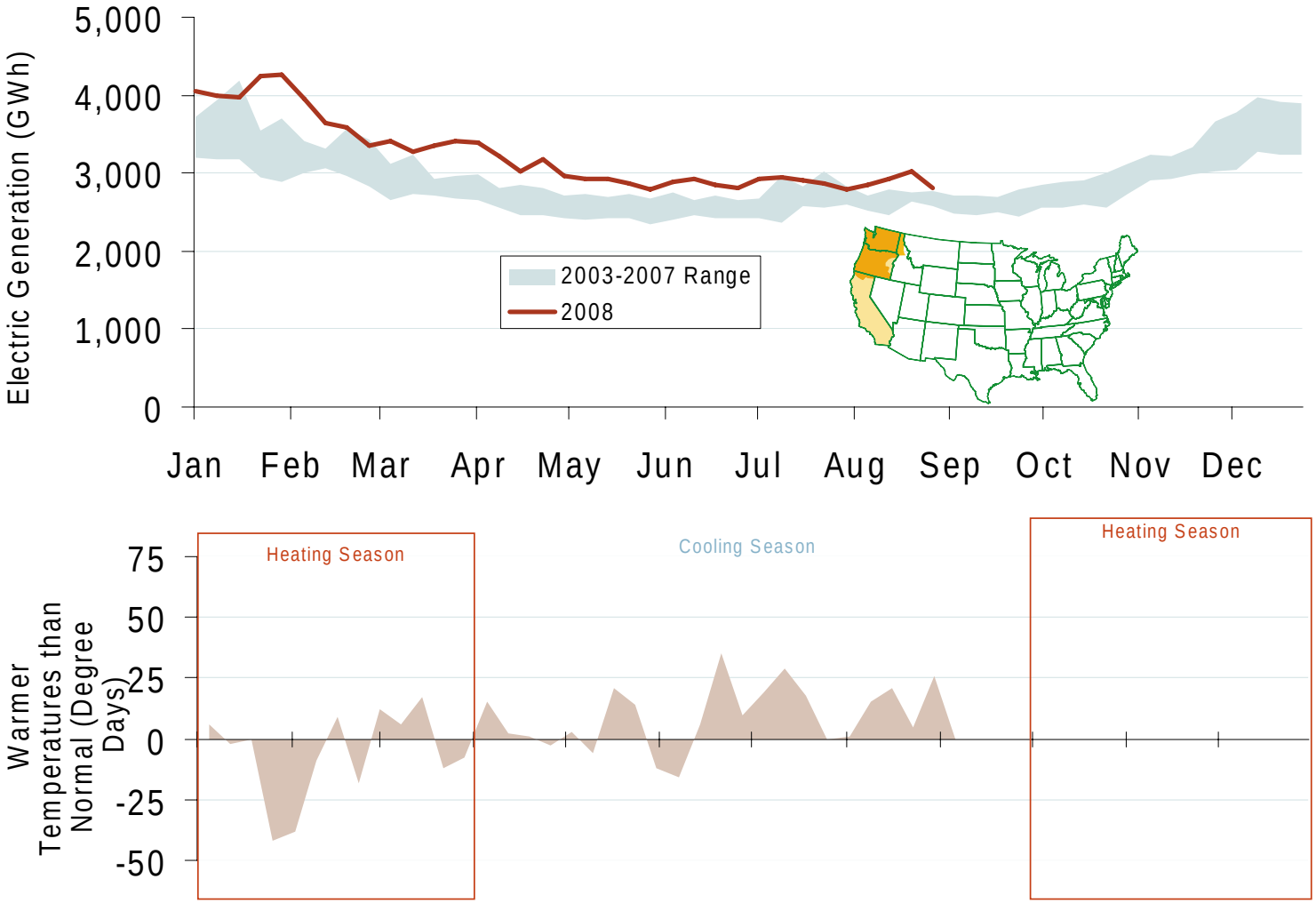
# Weekly Electric Generation Output and Temperatures Pacific Northwest Region




Source: Derived from *EEI* and *NOAA* data.

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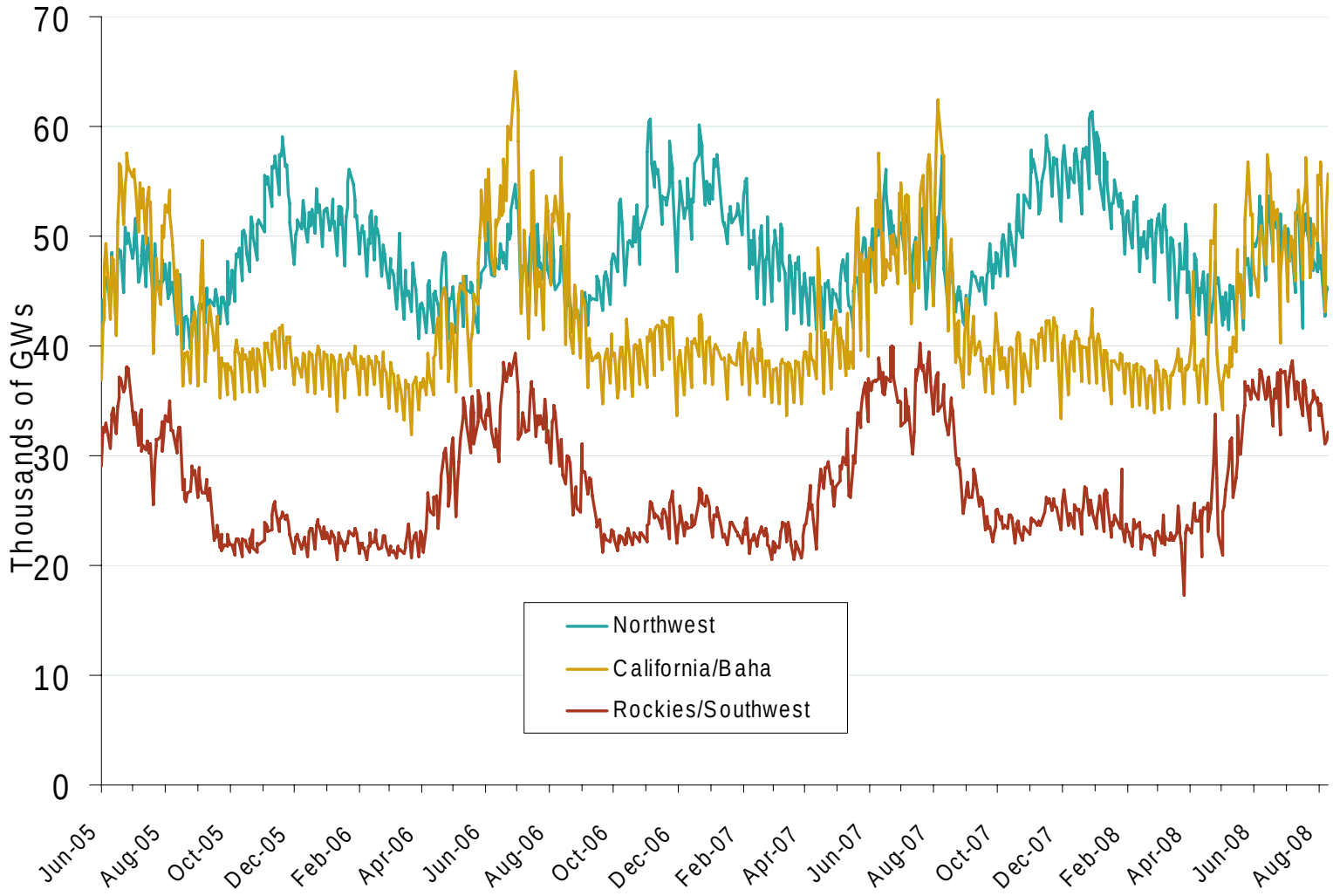
# Western Daily Actual Peak Demand




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.

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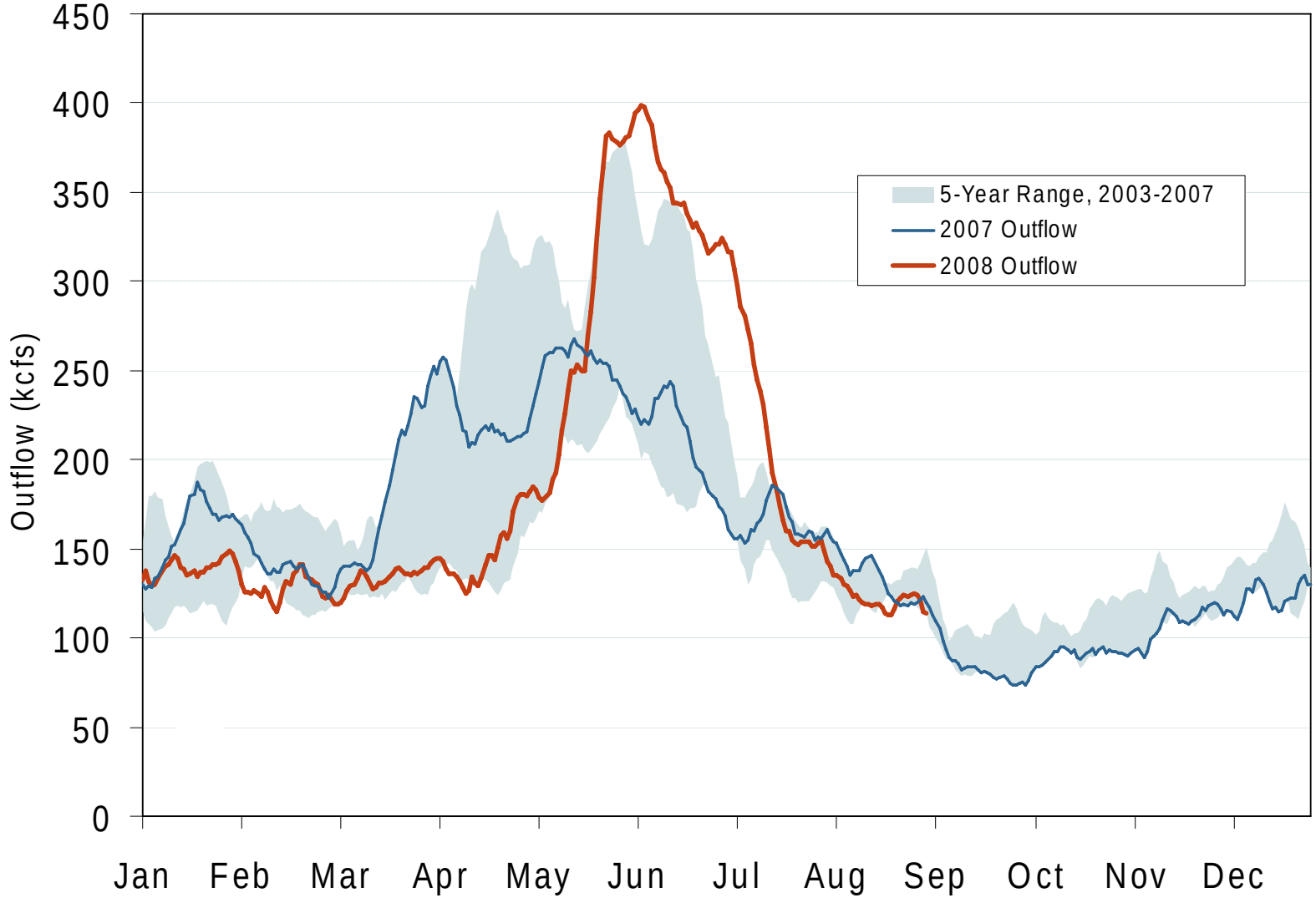
# Stream Flow at The Dalles Dam




Source: Derived from *USACE* data.

Trend lines are 7-day moving averages.

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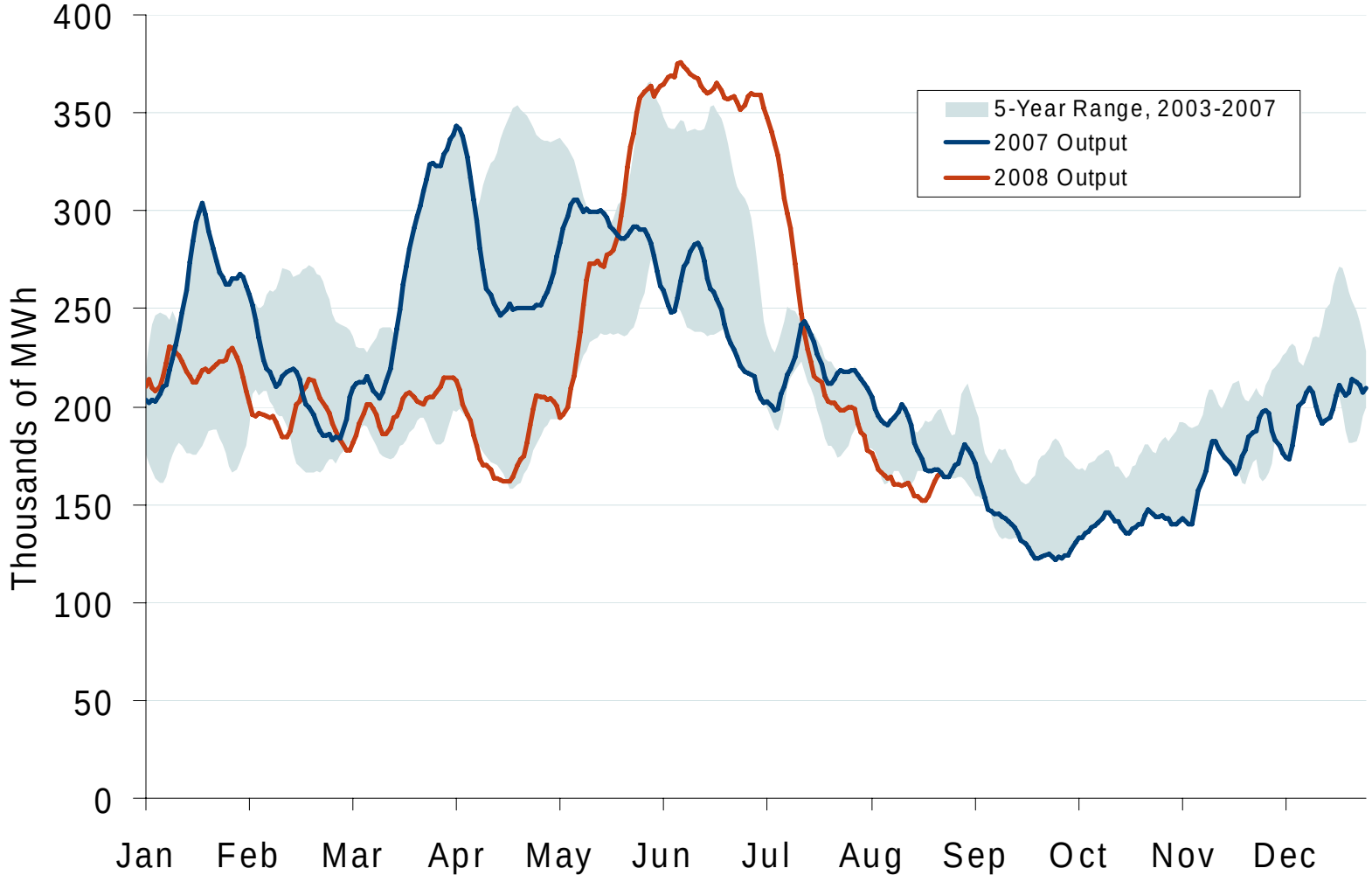
# Pacific Northwest Hydroelectric Production




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

Trend lines are 7-day moving averages.

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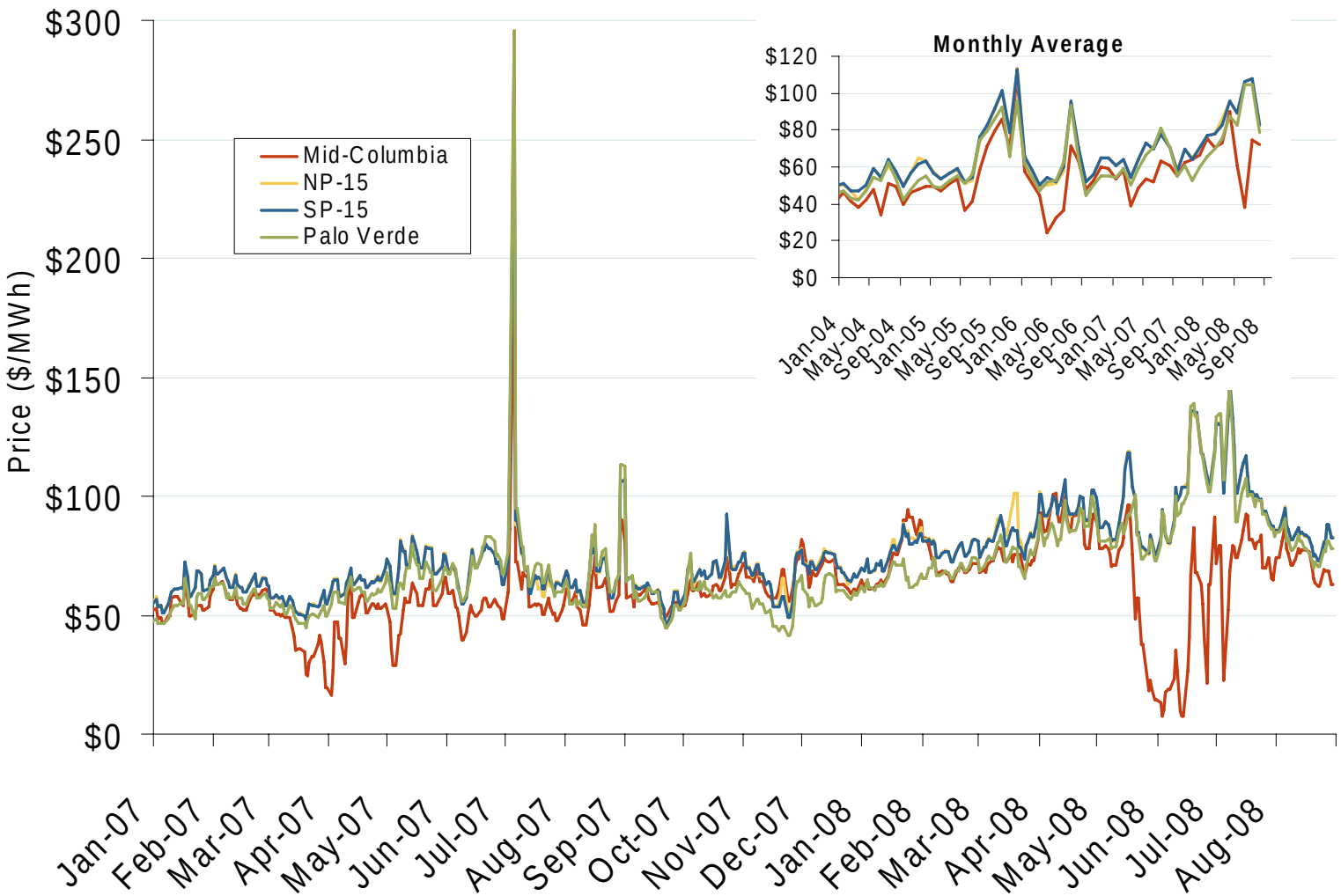
# Prices and Market Analysis

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

# Western Daily Bilateral Day-Ahead On-Peak Prices




Source: Derived from *Platts* data.

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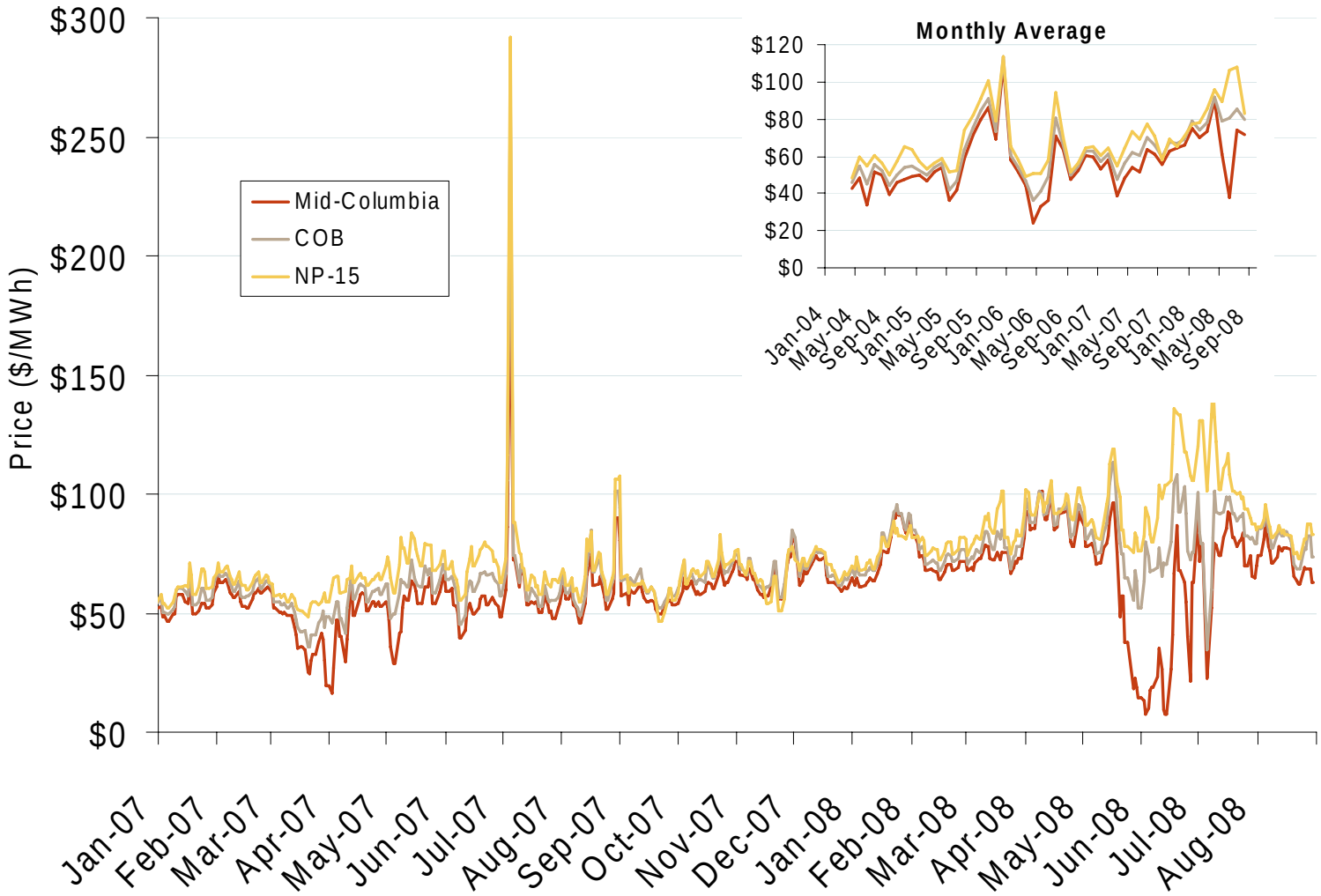
# Northwestern Daily Bilateral Day-Ahead On-Peak Prices




Source: Derived from *Platts* data.

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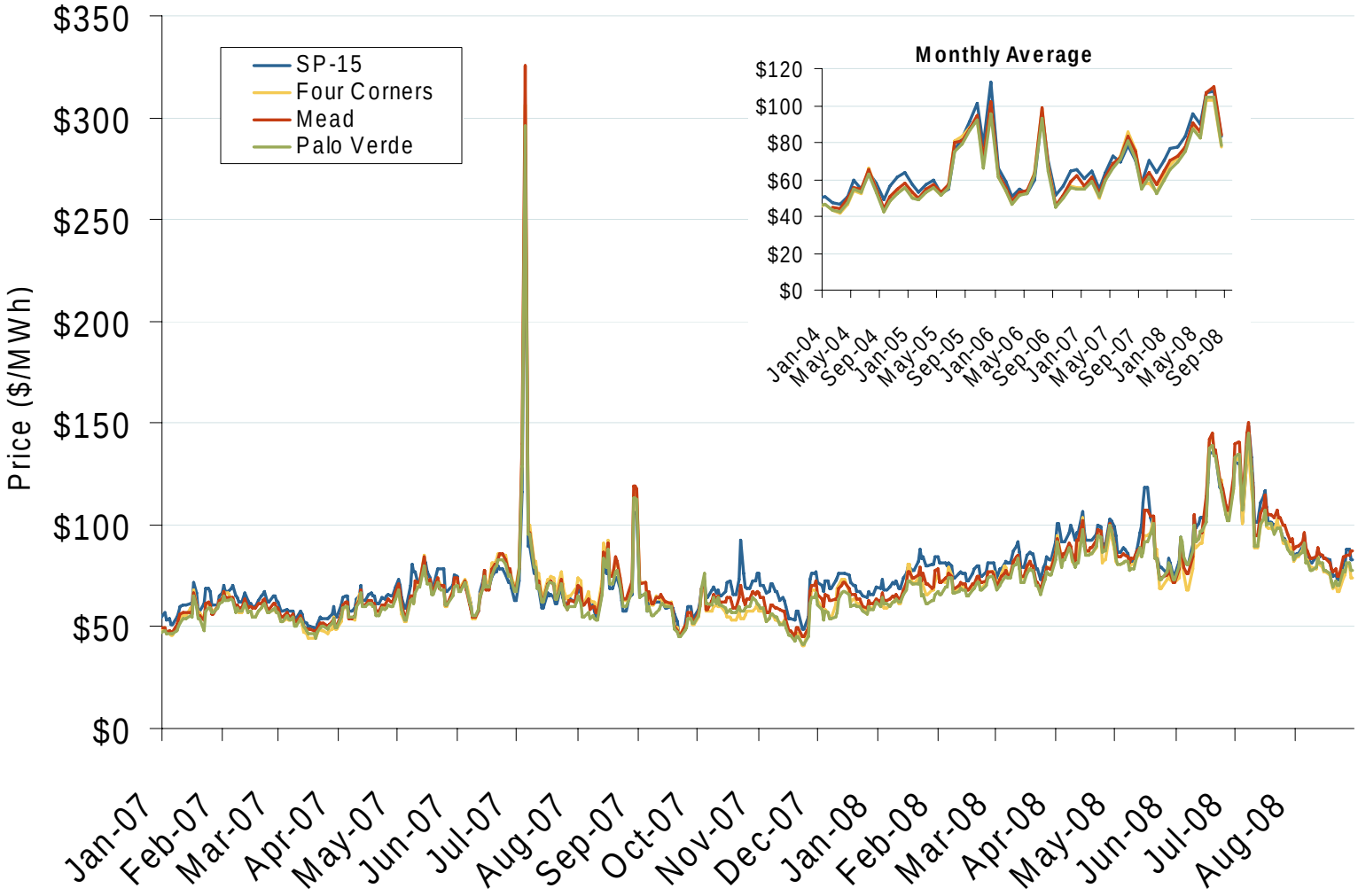
# Southwestern Daily Bilateral Day-Ahead On-Peak Prices




Source: Derived from *Platts* data.

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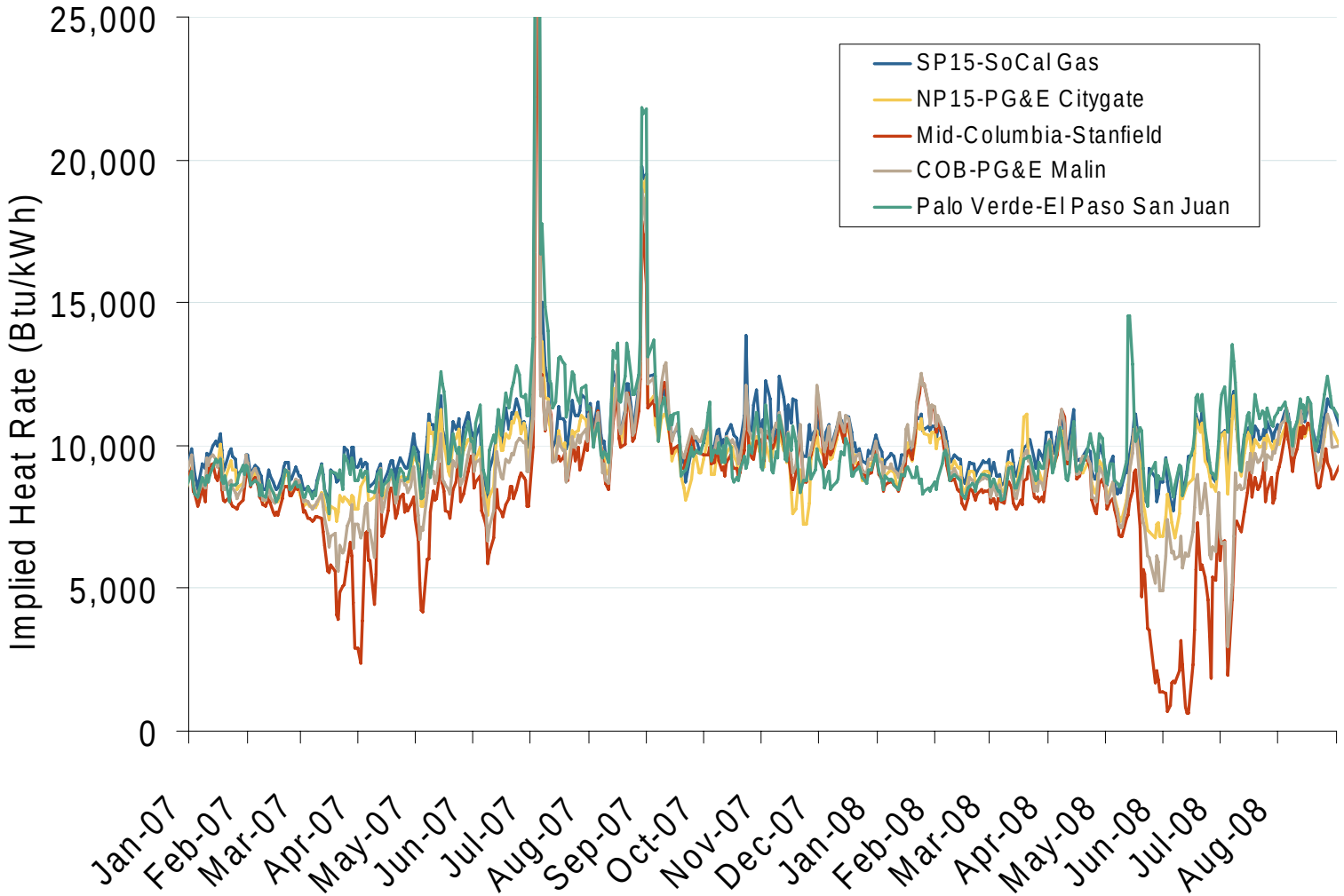
# Implied Heat Rates at Western Trading Points




Source: Derived from *Platts* data

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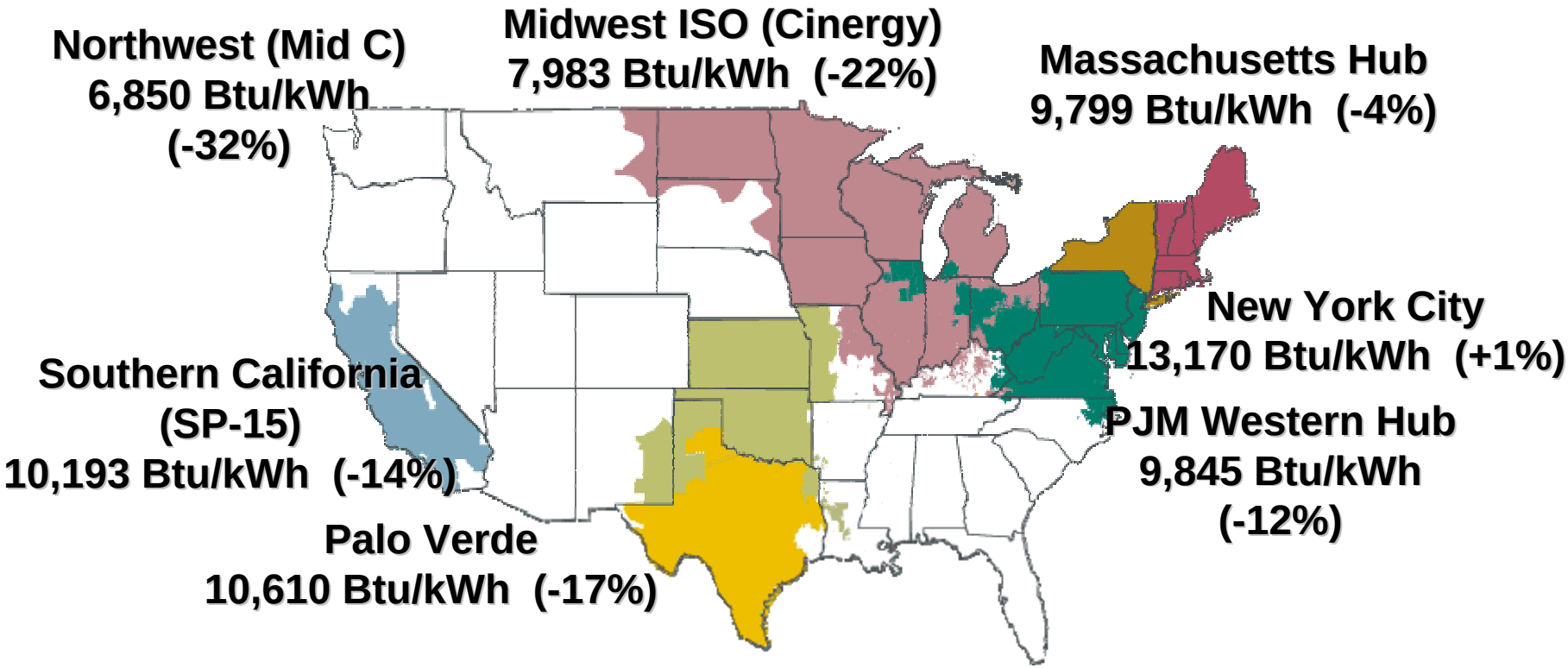
# June-August Implied Heat Rates, 2008 vs. 2007




Source: Implied heat rates derived from Platts *Megawatt Daily* data.

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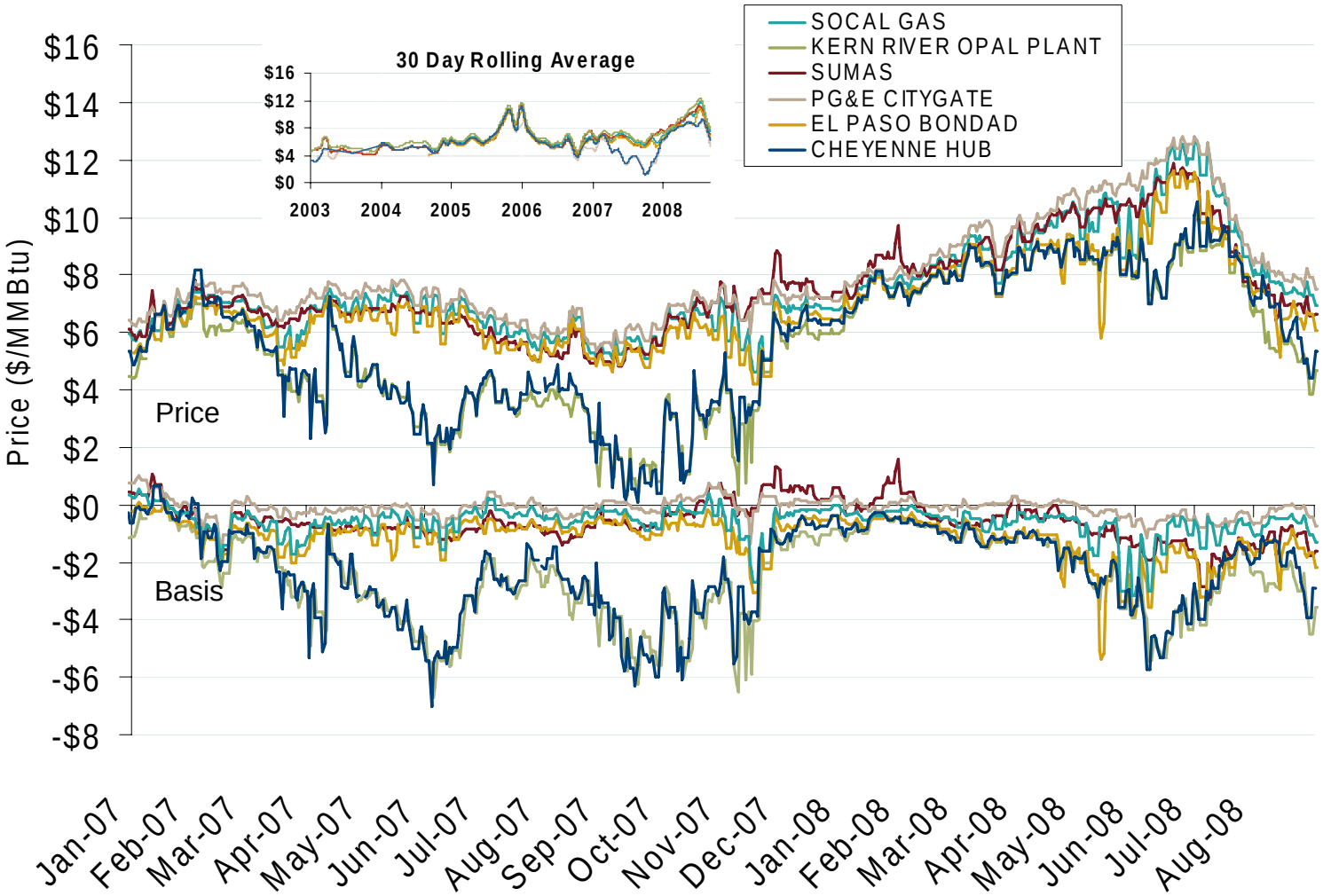
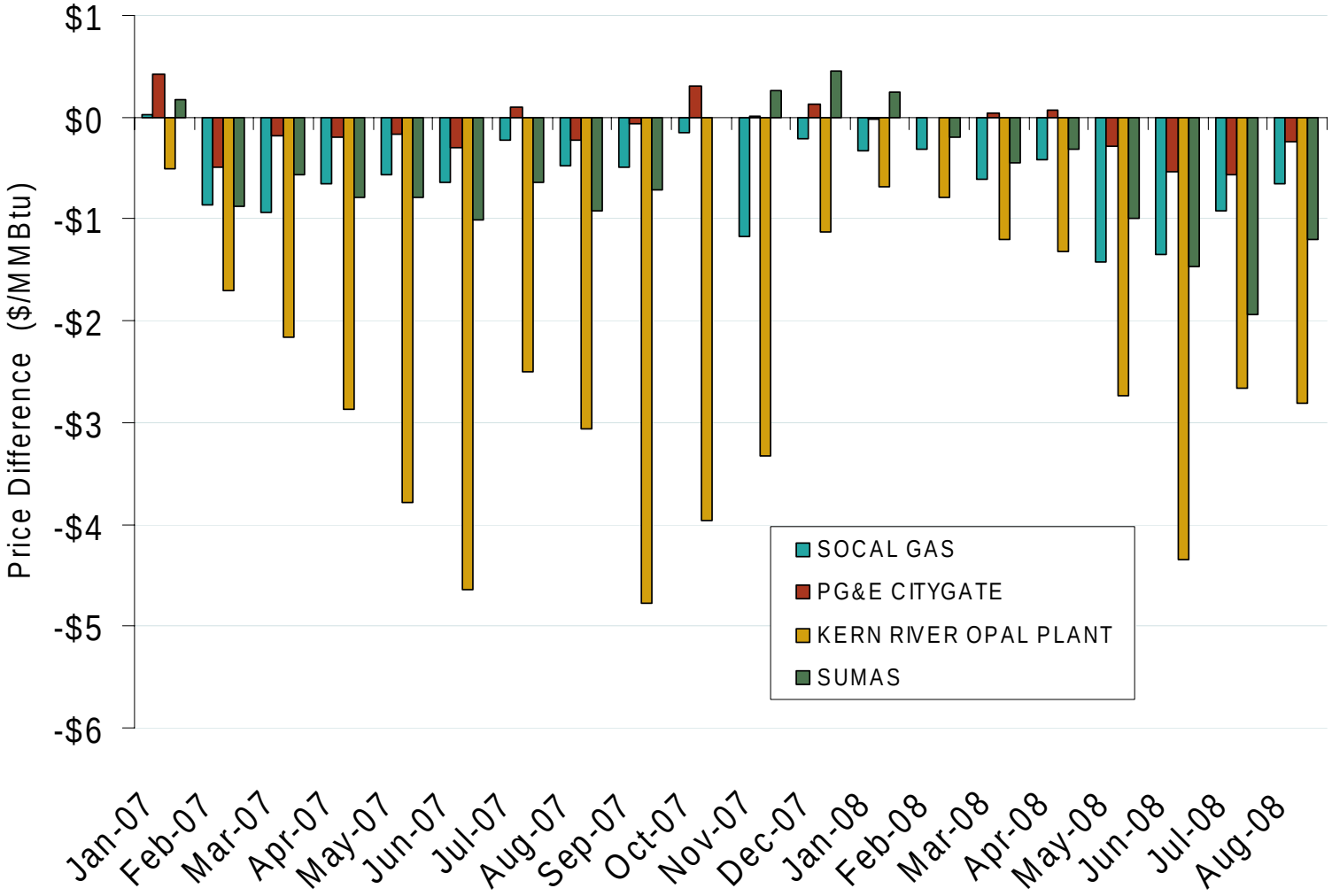
# Western Day-Ahead Hub Spot Prices and Basis




Source: Derived from *Platts* data.

Updated September 5, 2008

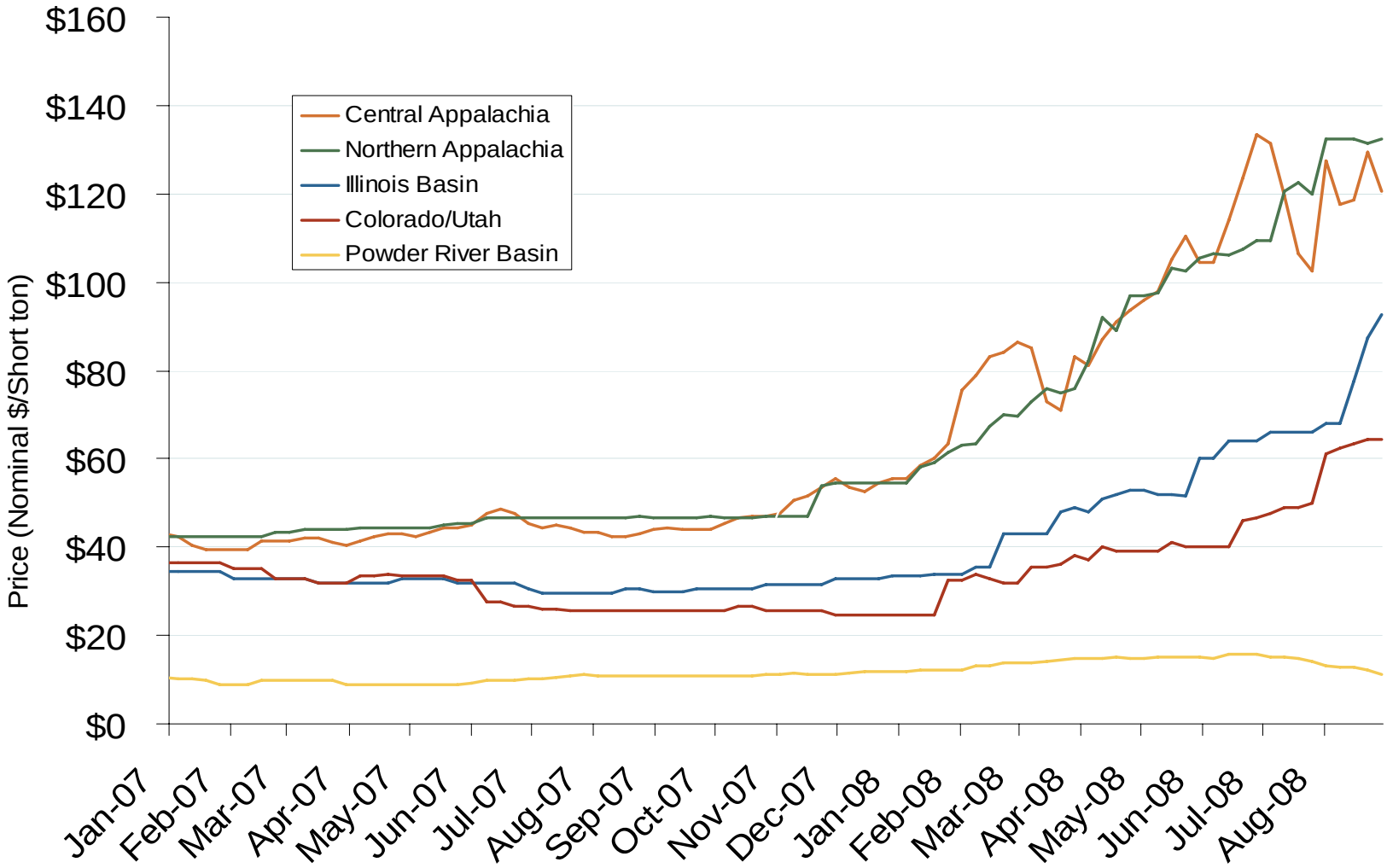
# Western Monthly Average Basis Value to Henry Hub




Source: Derived from *Platts* data.

Updated September 5, 2008

# Regional Coal Spot Prices




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

Source: Derived from *Bloomberg* data.

Updated September 5, 2008

# 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

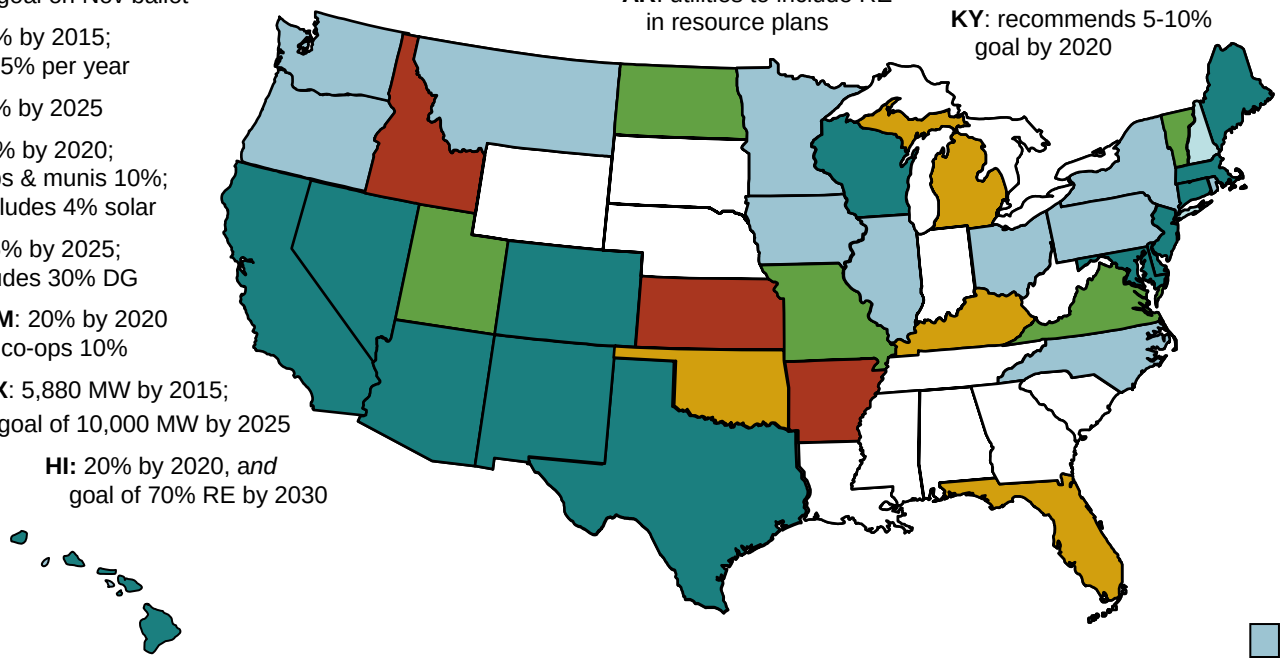
**WI**: 10% by 2015

**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

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

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.

Updated July 17, 2008

# Energy Efficiency Resource Standards (EERS)

**ID**: evaluating DR, EE, and RE as priority resources

**MT:** state agency reduction initiative: save 20% by 2010

**MN**: reduce fossil fuel use 15% by 2015 through EE, RE

**IA**: utilities must establish EE goals by end of 2008

**WI**: RPS requires utility EE

**MI**: different bills passed by House and Senate

**IL**: reduce energy 2% by 2015 (EE) and 0.1% from prior year (DR)

**OH**: reduce peak-demand 8% by 2018; effect energy savings of 22% by 2025

**WA**: must pursue all cost-effective conservation

**OR:** EE working group developing recommendations and concepts

**CA:** IOUs reduce MW 10%, peak demand (MWh) 12% by 2013; munis 10% by 2017

**NV**: use EE for up to 25% of RPS by 2015

**UT**: EE incentives in RPS goal

**CO**: save 40 MW and 100 GWh annually to 2013

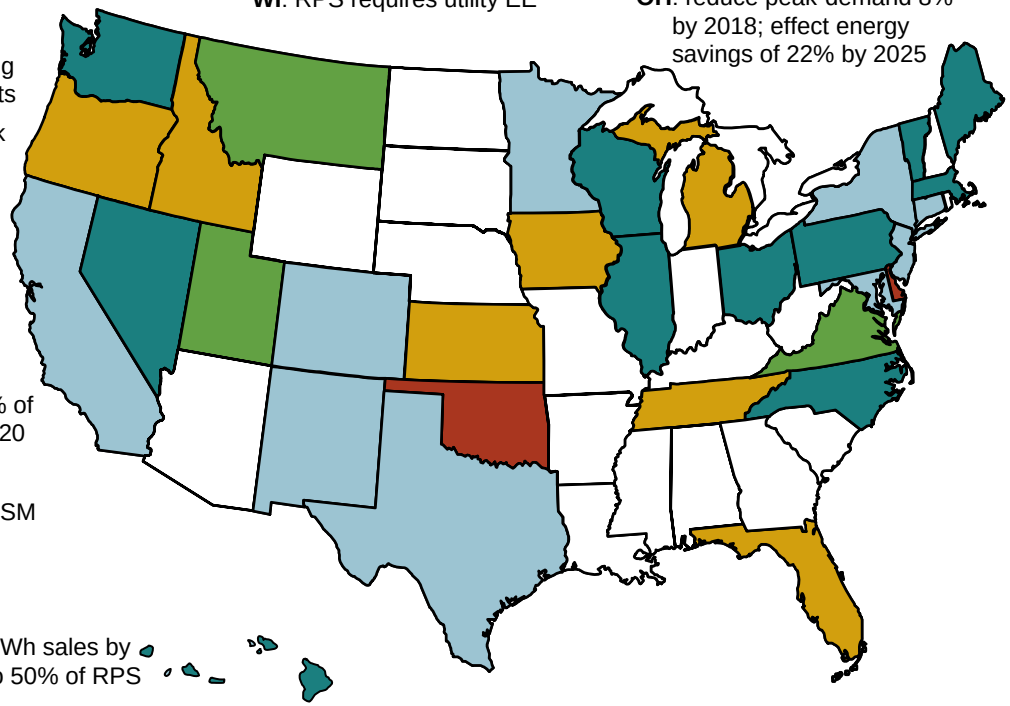
**NM**: use EE and DR to save 10% of 2005 retail electric sales by 2020

**KS**: studying for E&G utilities

**OK:** PSC approved quick-start DSM programs, including EE

**TX**: 10% of load growth, beyond 2004, based on prior 5 years

**HI:** 20% of MWh sales by 2020; up to 50% of RPS



**ME**: 10% new EE by 2017; in RPS goal as 2nd priority

**VT:** EE & RE to meet 2007-12 growth; new EE fund

**MA**: meet 25% of capacity and energy with DSR by 2020

**NY**: 15% electric use reduction by 2015; doubles EE funding

**CT**: 4% savings by 2010, and a Tier III RPS resource

**PA**: new funding for EE and RE

**NJ**: reduce consumption 20%, and reduce peak 5,700 MW by 2020

**DE**: promote EE and conservation by a Sustainable Energy Utility

**DC**: Sustainable Energy Utility charged with reducing peak-demand and energy consumption

**MD**: reduce peak-demand and per cap electricity use 15% by 2015

**VA**: reduce 10% of 2006 sales by 2022 with EE, DR

**NC**: EE to meet up to 25% of RPS to 2011; later to 40%

**FL**: PSC must adopt goals to reduce electric consumption and peak demand using EE and DR

- EERS by regulation or law (separate from RPS)
- 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

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

Updated August 15, 2008