OE ENERGY MARKET SNAPSHOT

National Version – August 2008 Data

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

Office of Enforcement
Federal Energy Regulatory Commission
September 2008

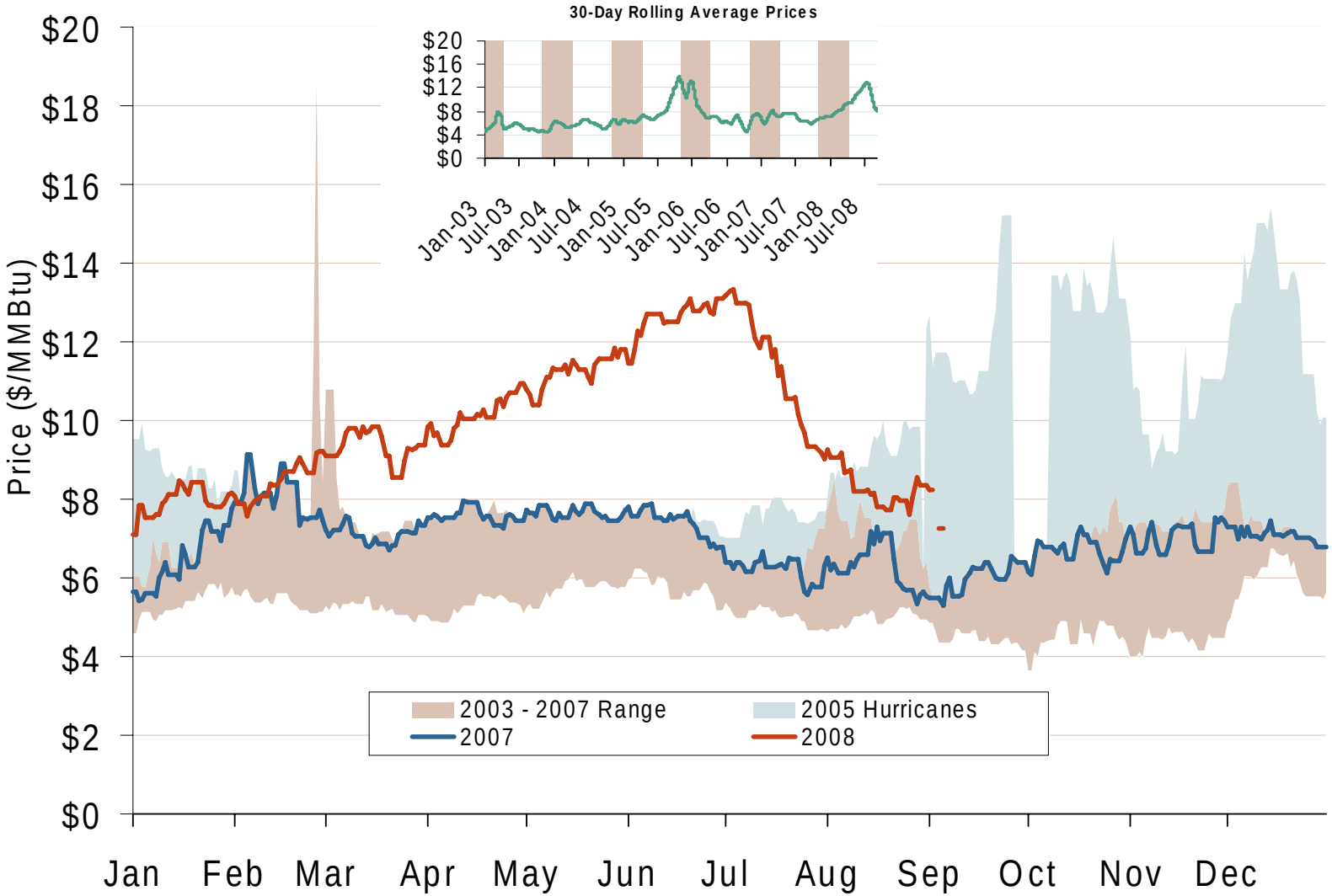
Special Report:

Natural Gas Price Decline II

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

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

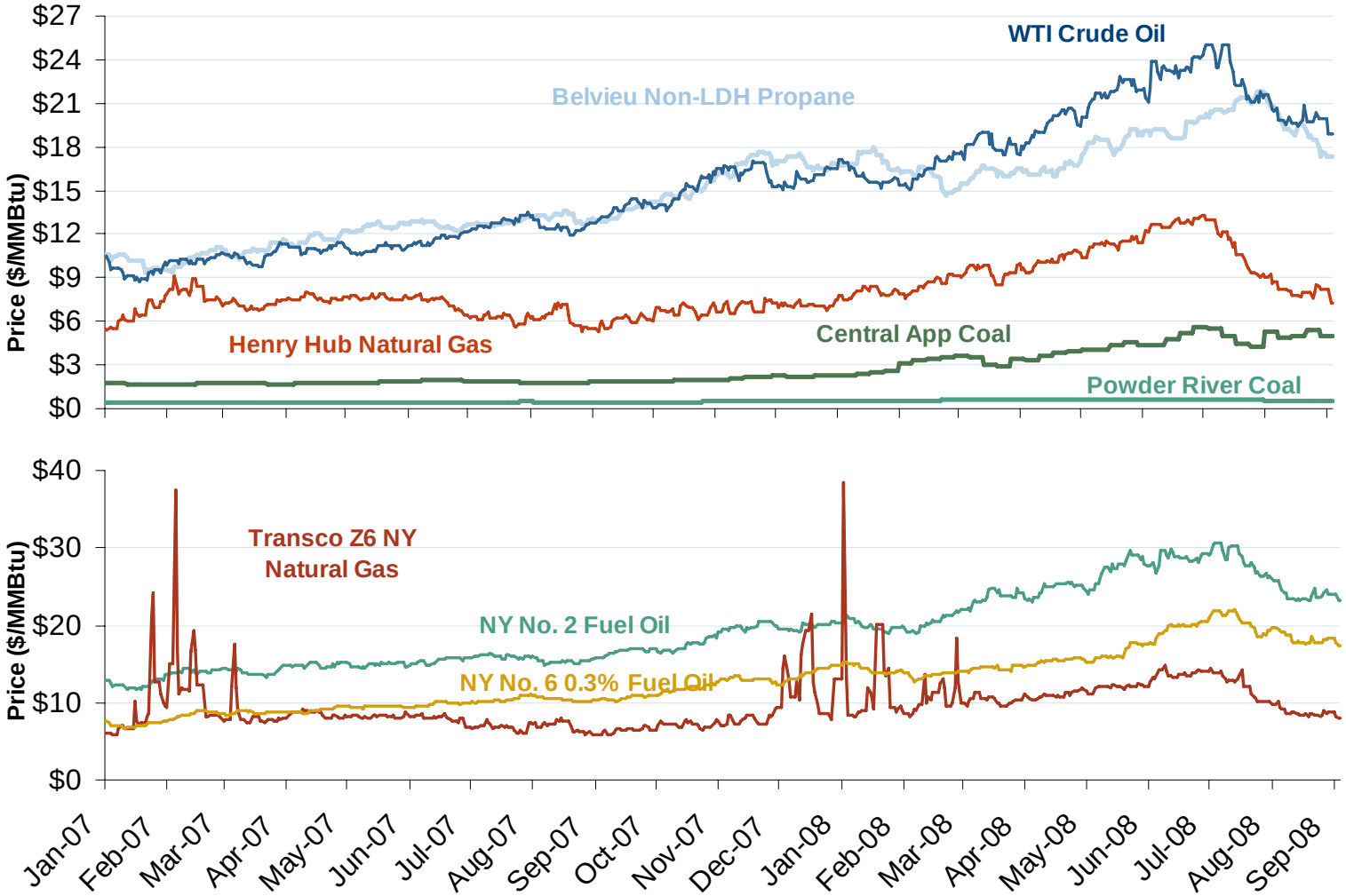
Henry Hub Natural Gas Daily Spot Prices 2007, 2008 and 2003-2007 Year Range



Source: Derived from *Platts* data.

Updated September 5, 2008

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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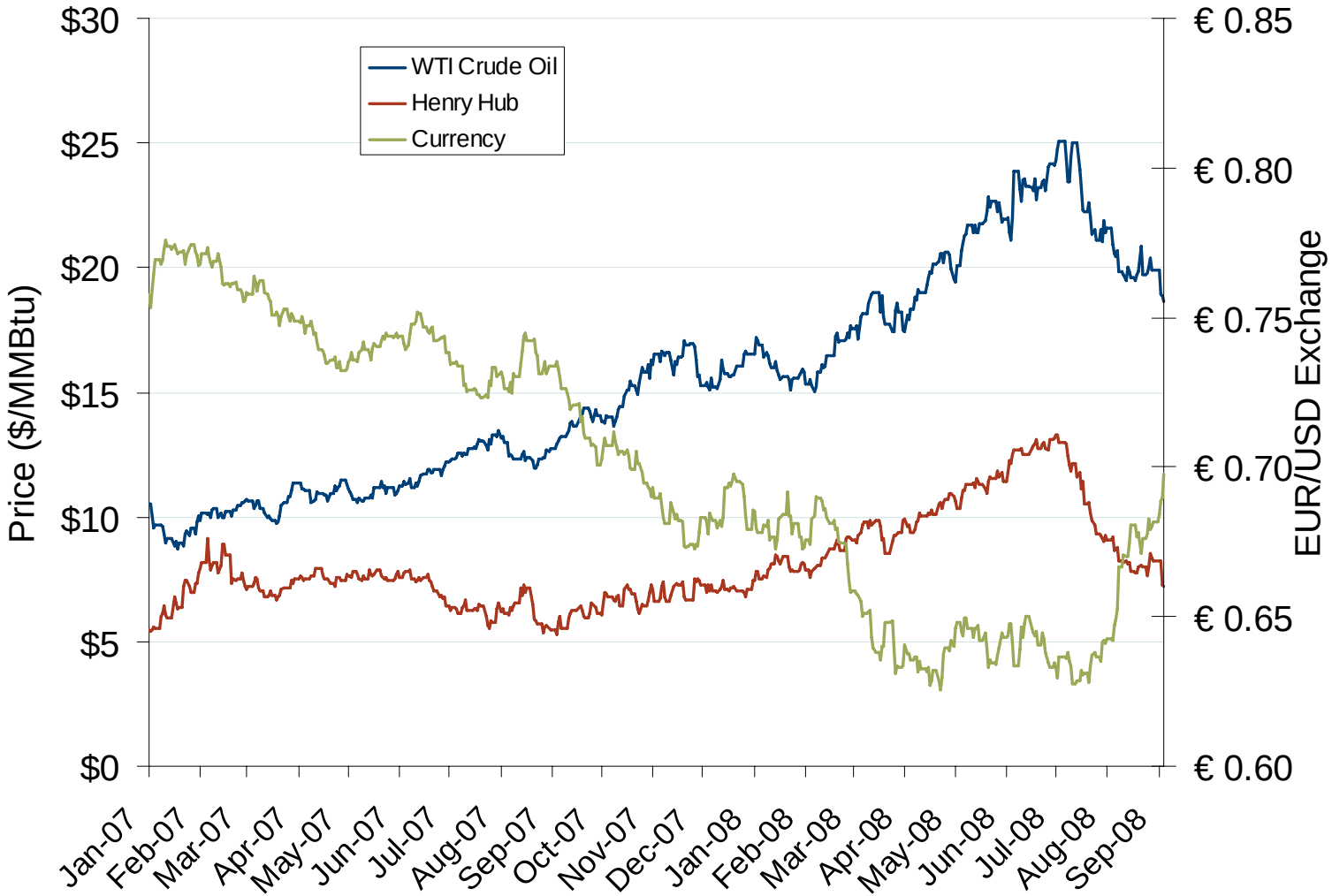
Oil, Natural Gas and Currency Spot Prices



Source: Derived from *Bloomberg* data.

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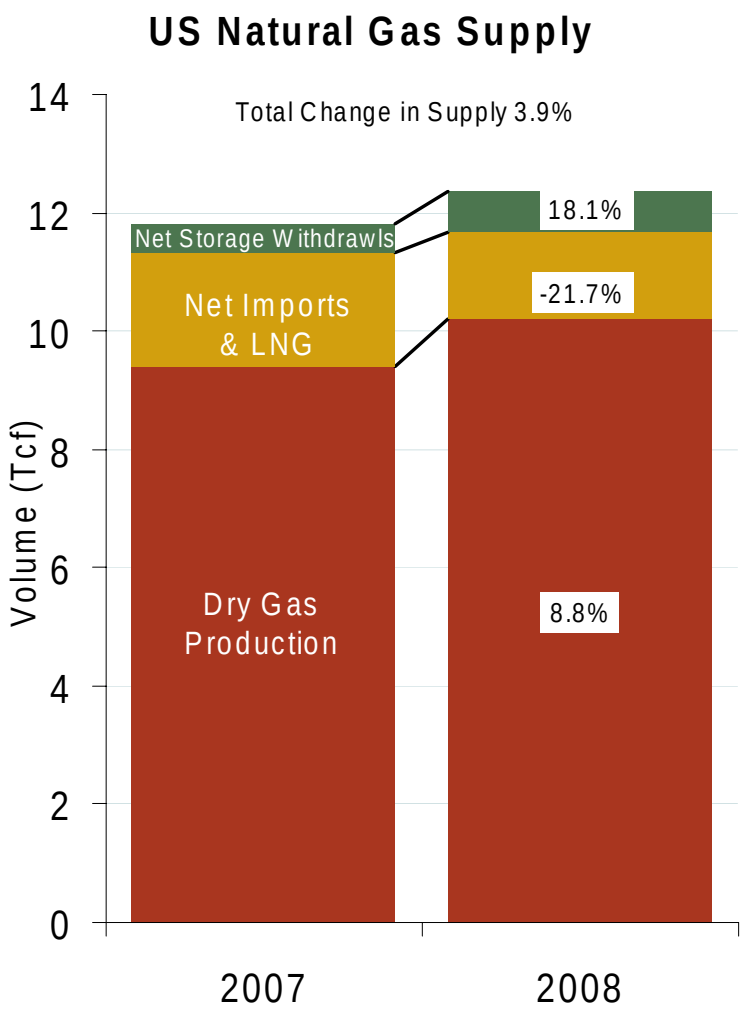
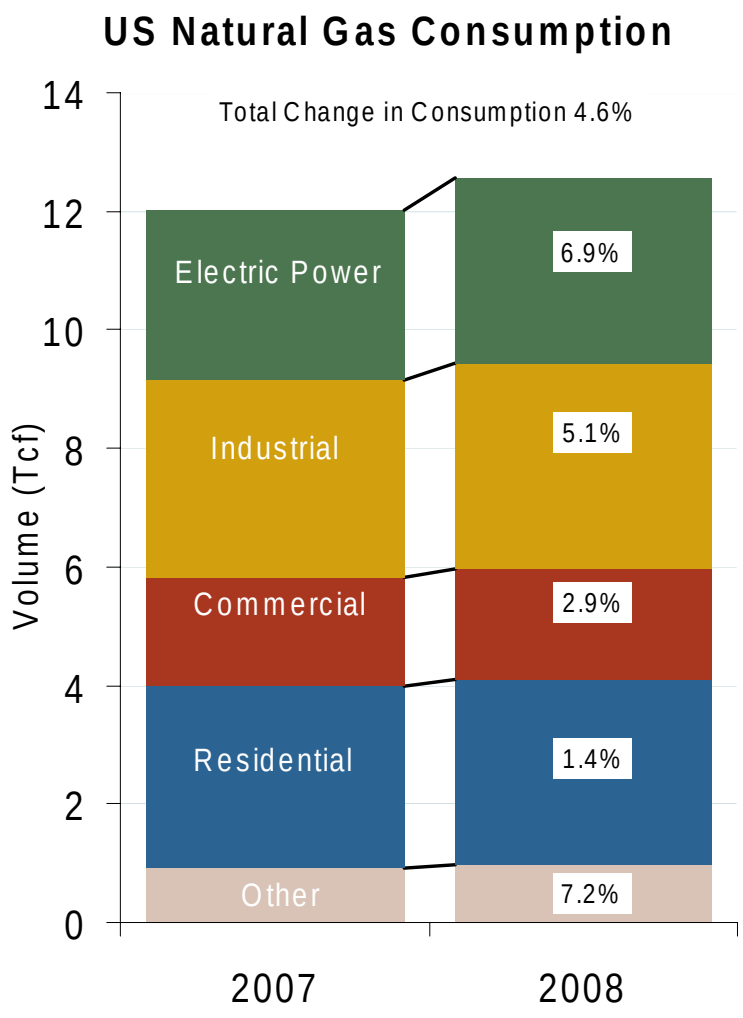
U.S. Natural Gas Supply and Consumption Jan-Jun





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

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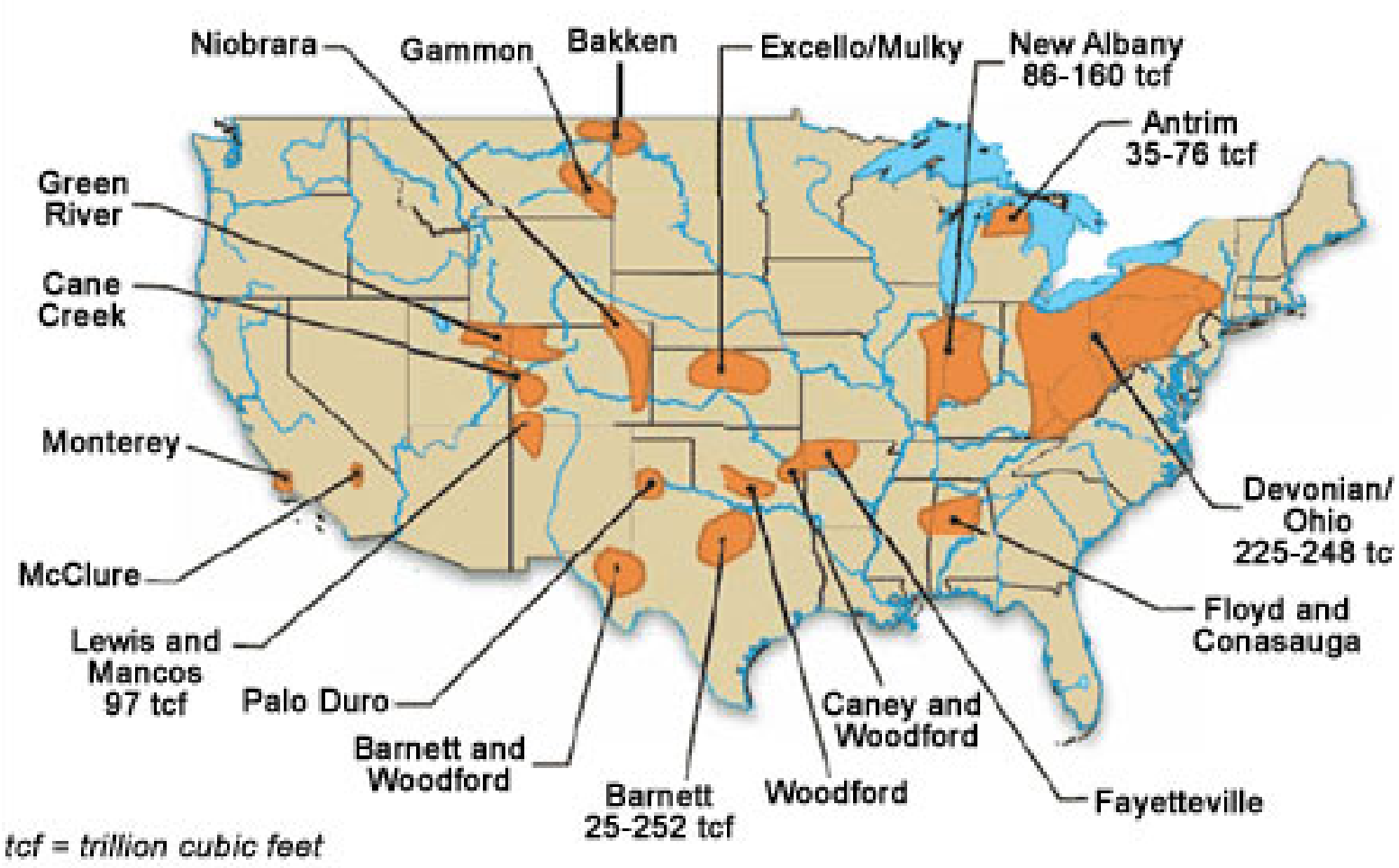
Major US Shale Basins



Source: EIA, Schlumberger.
September 2008 National Snapshot Report

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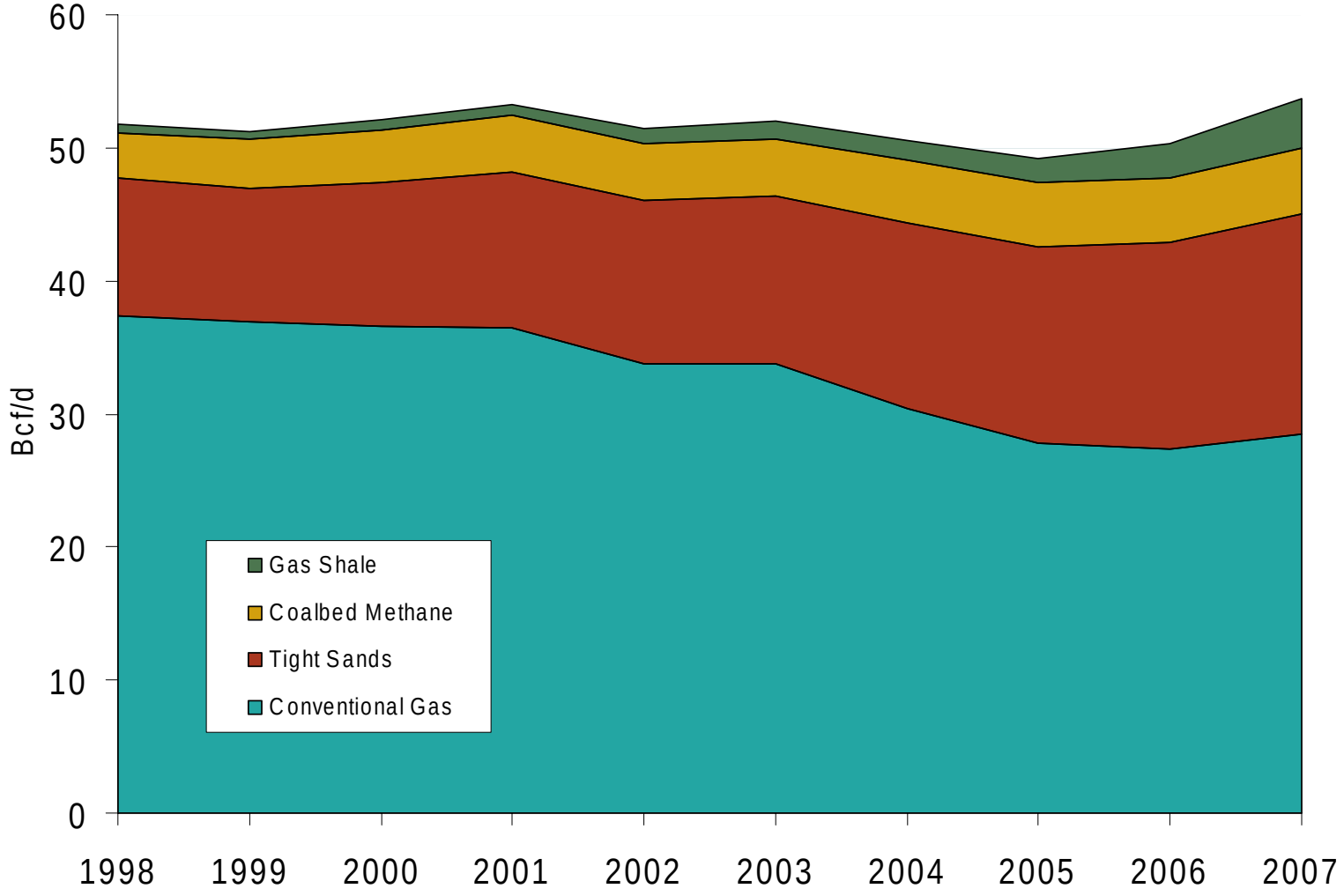
US Natural Gas Production



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

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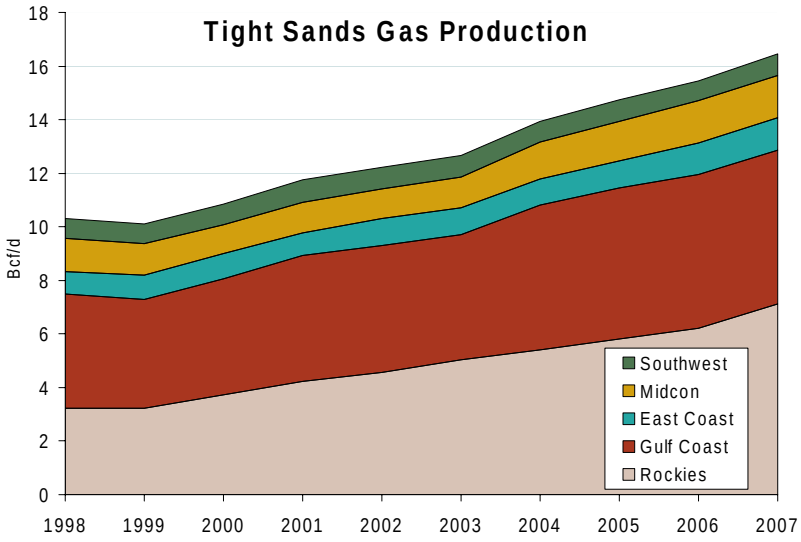
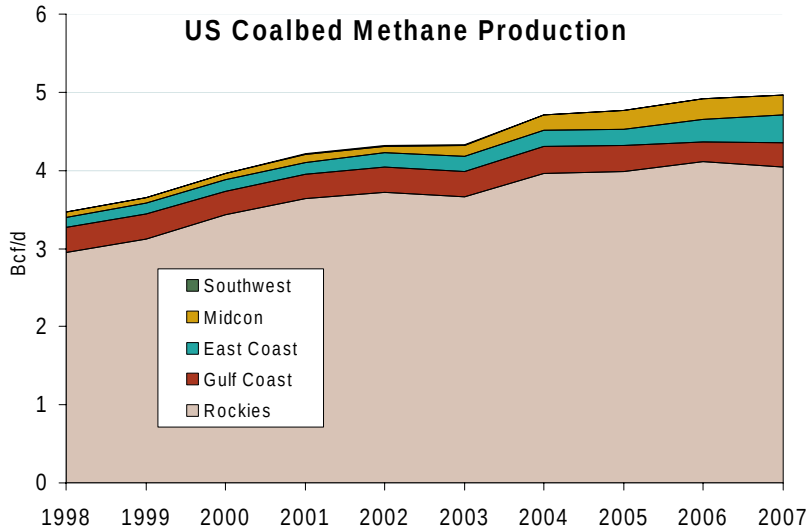
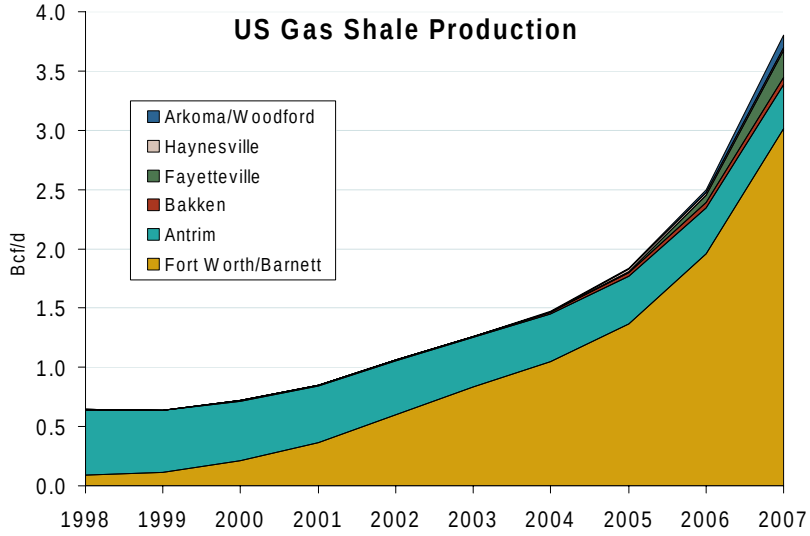
"Unconventional" Natural Gas Production







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

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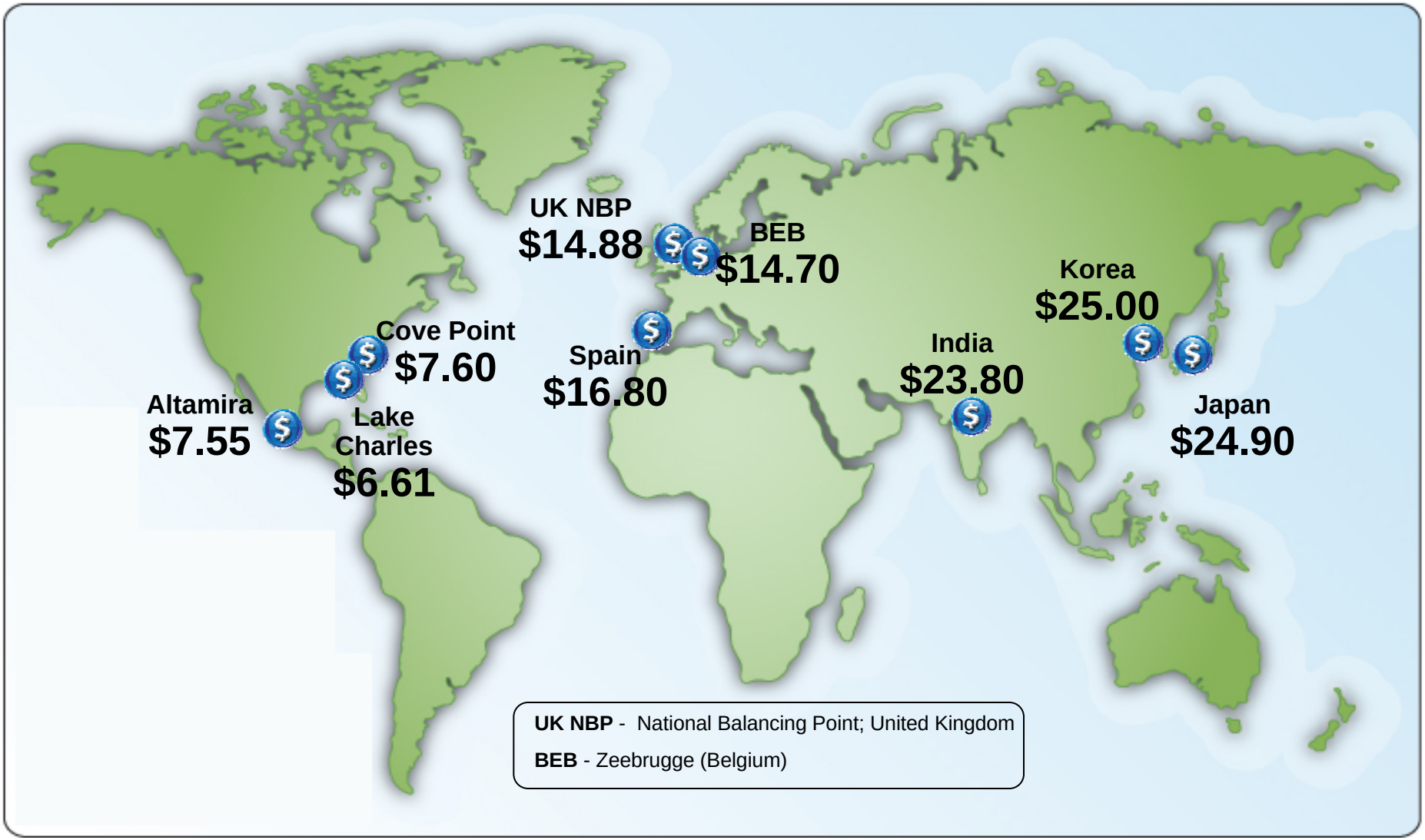
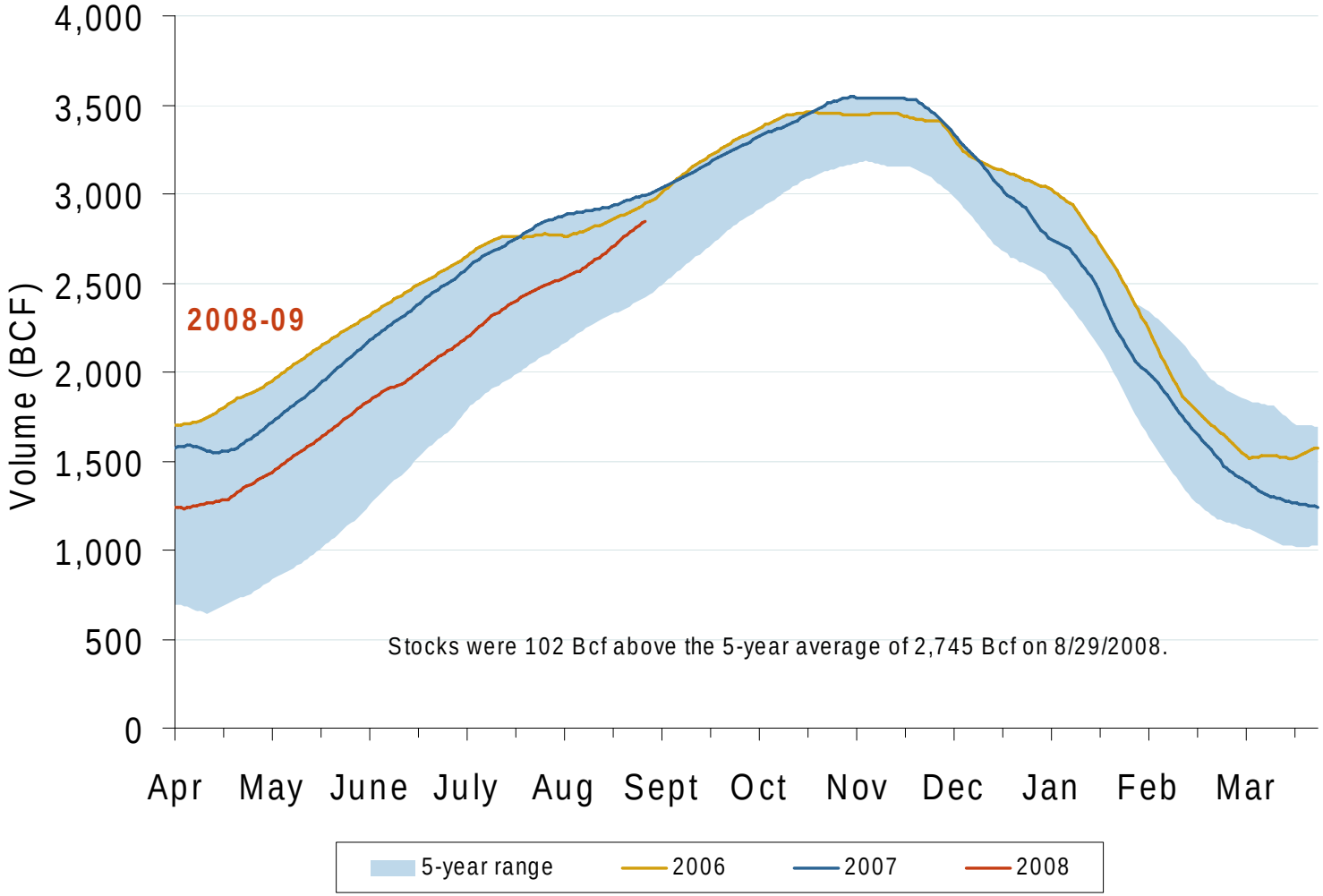
World LNG Landed Price Estimates for October 2008



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

Updated September 5, 2008

Total U.S. Working Gas in Storage



Source: Derived from *EIA* data.
September 2008 National Snapshot Report

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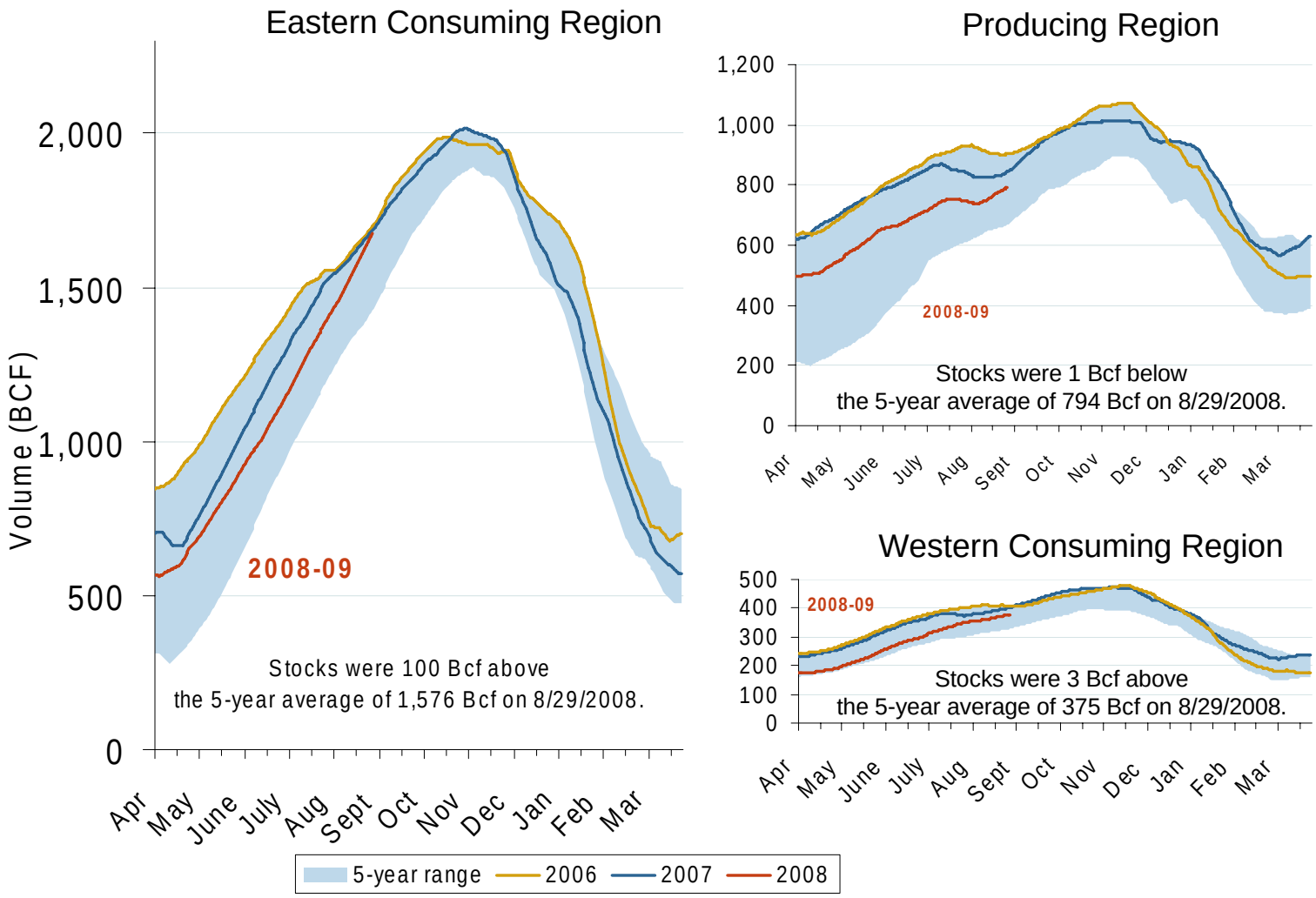
Regional Totals of Working Gas in Storage



Source: Derived from *EIA* data.

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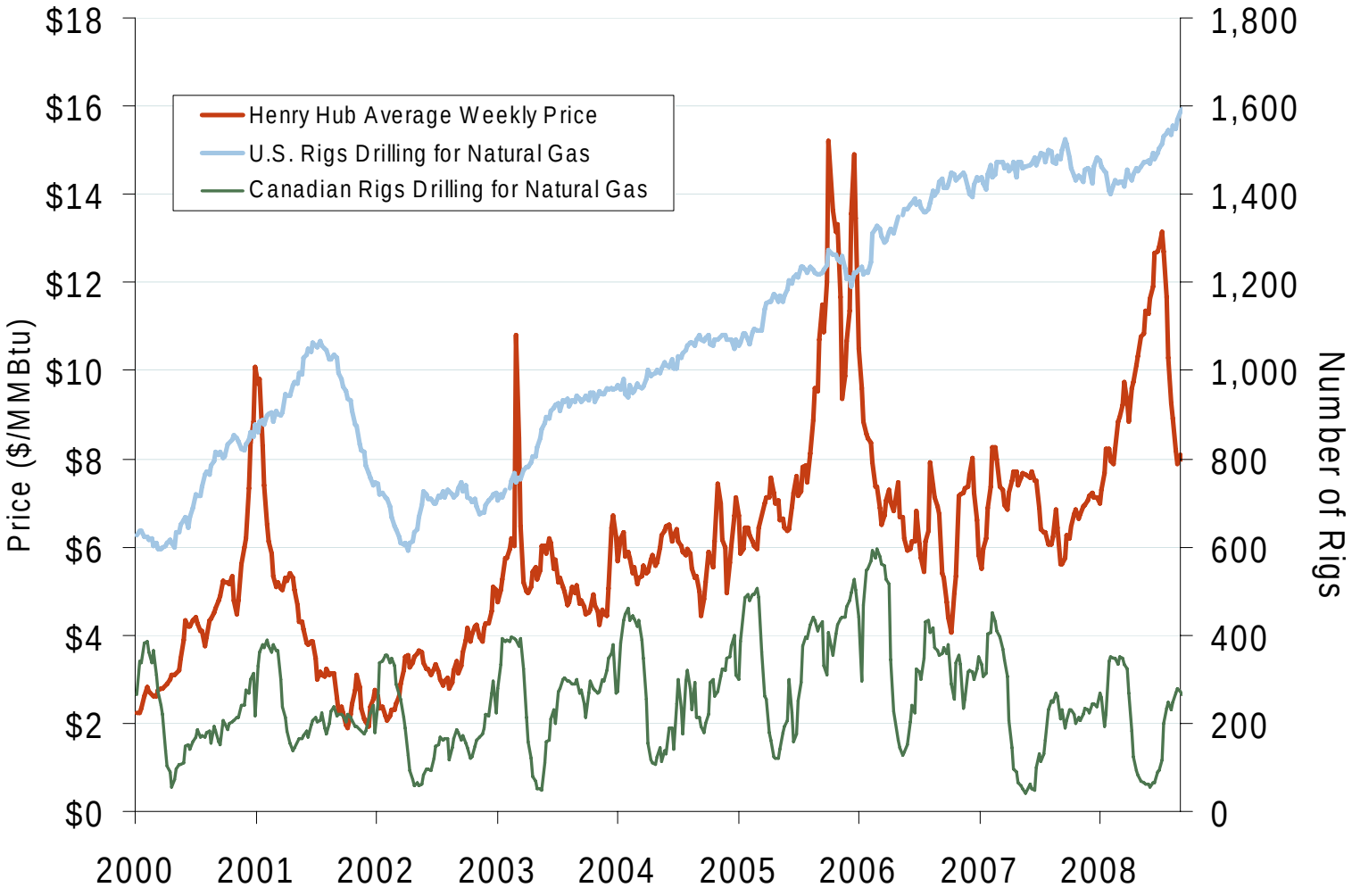
U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



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

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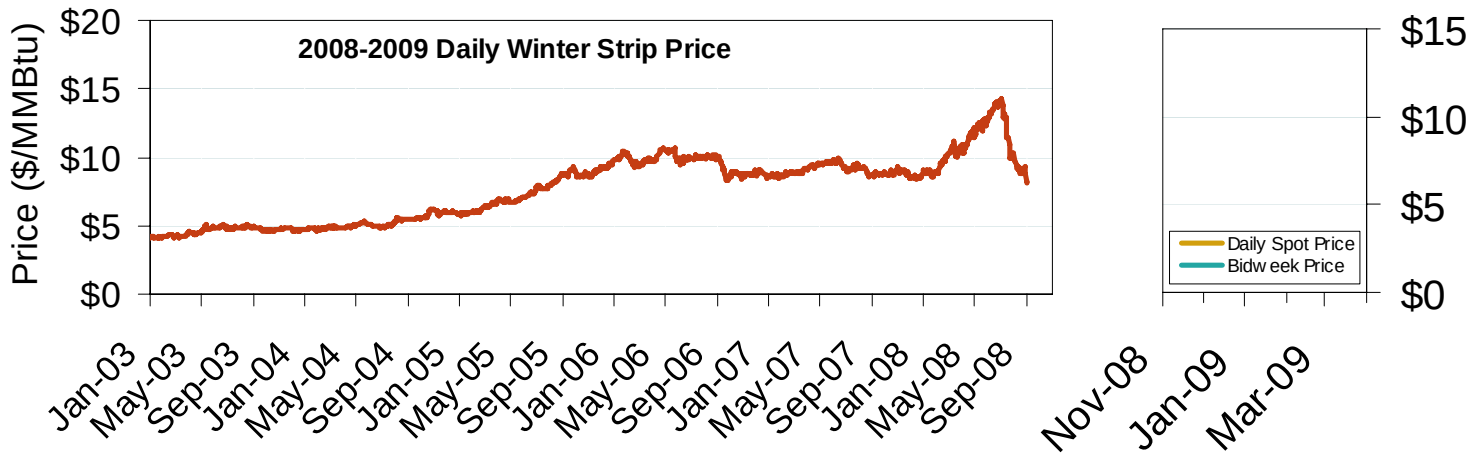
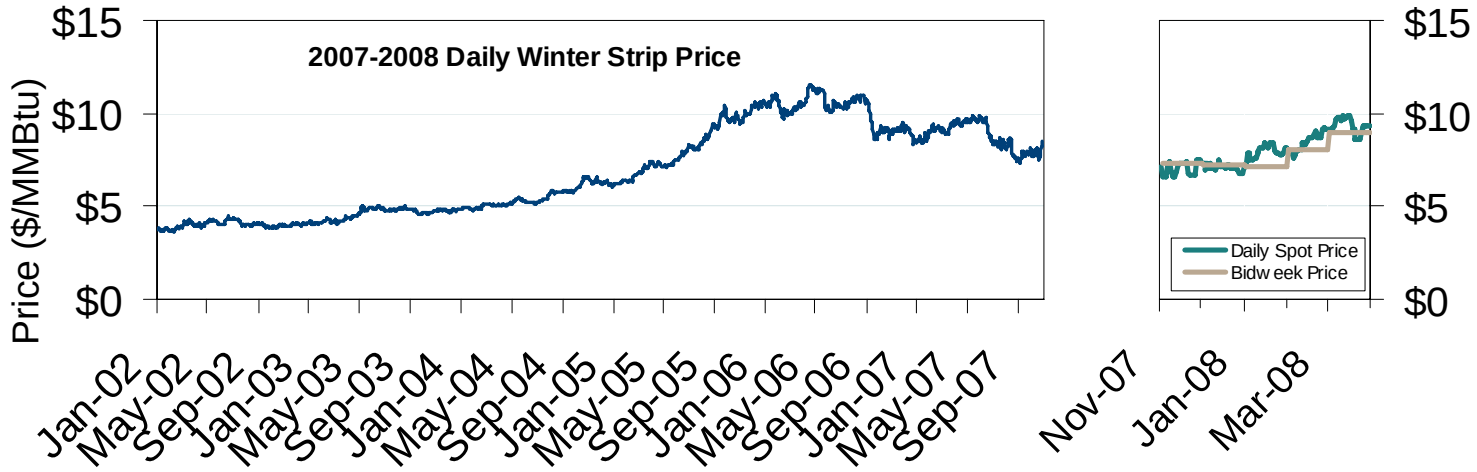
Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices





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

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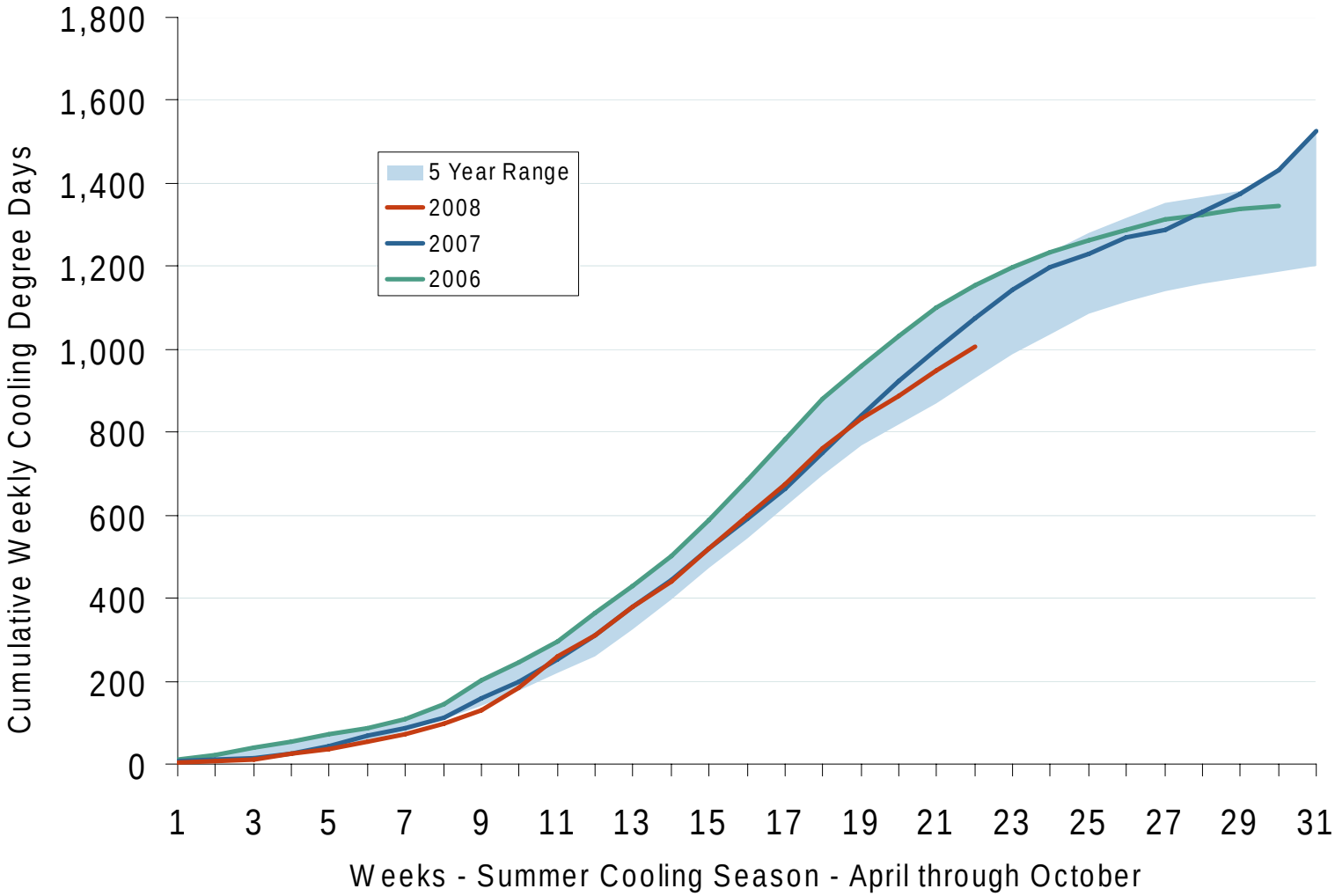
Market Fundamentals

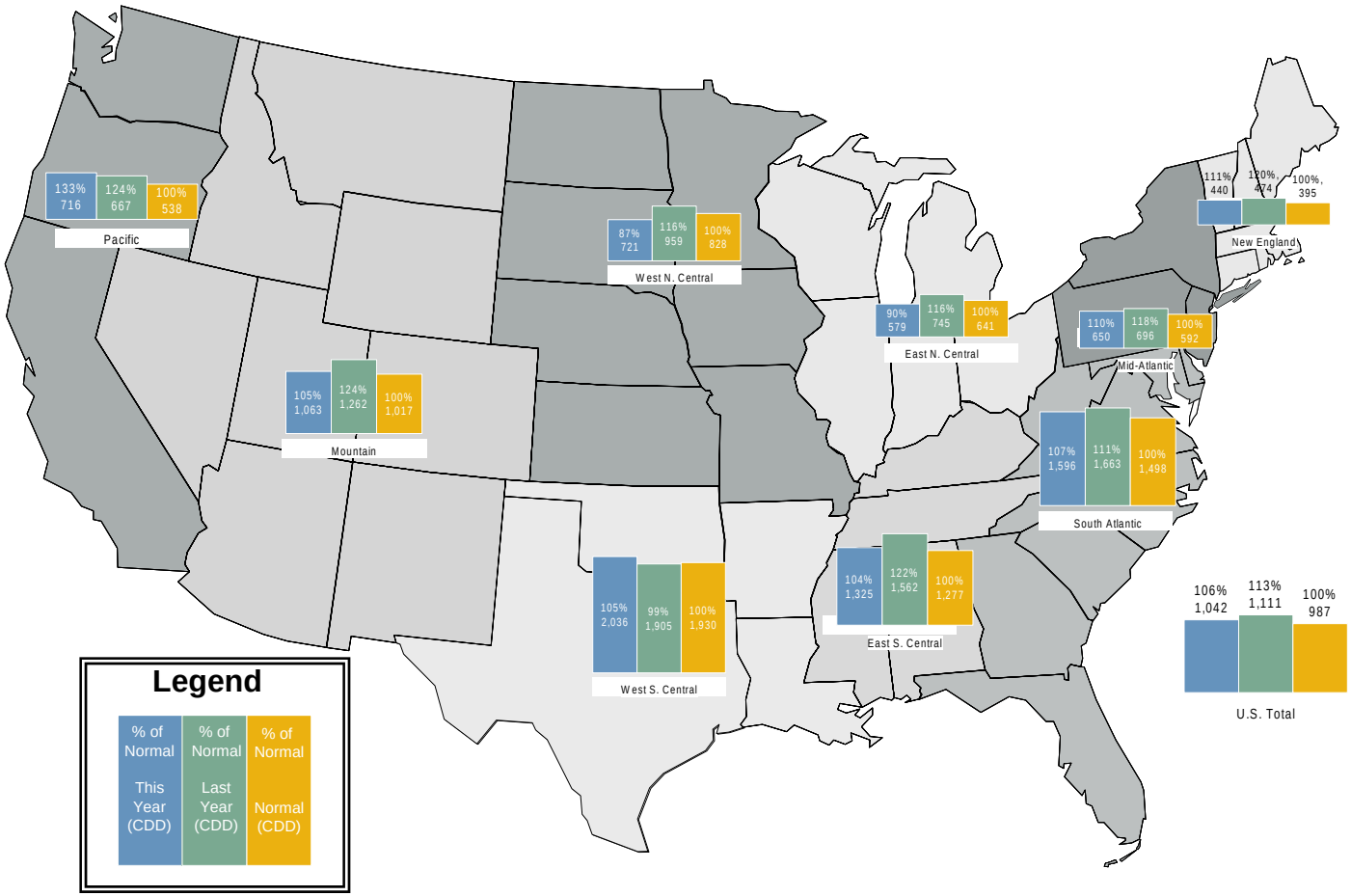
U. S. Summer Cumulative Cooling Degree Days



Source: Derived from *NOAA* data.

Updated September 5, 2008

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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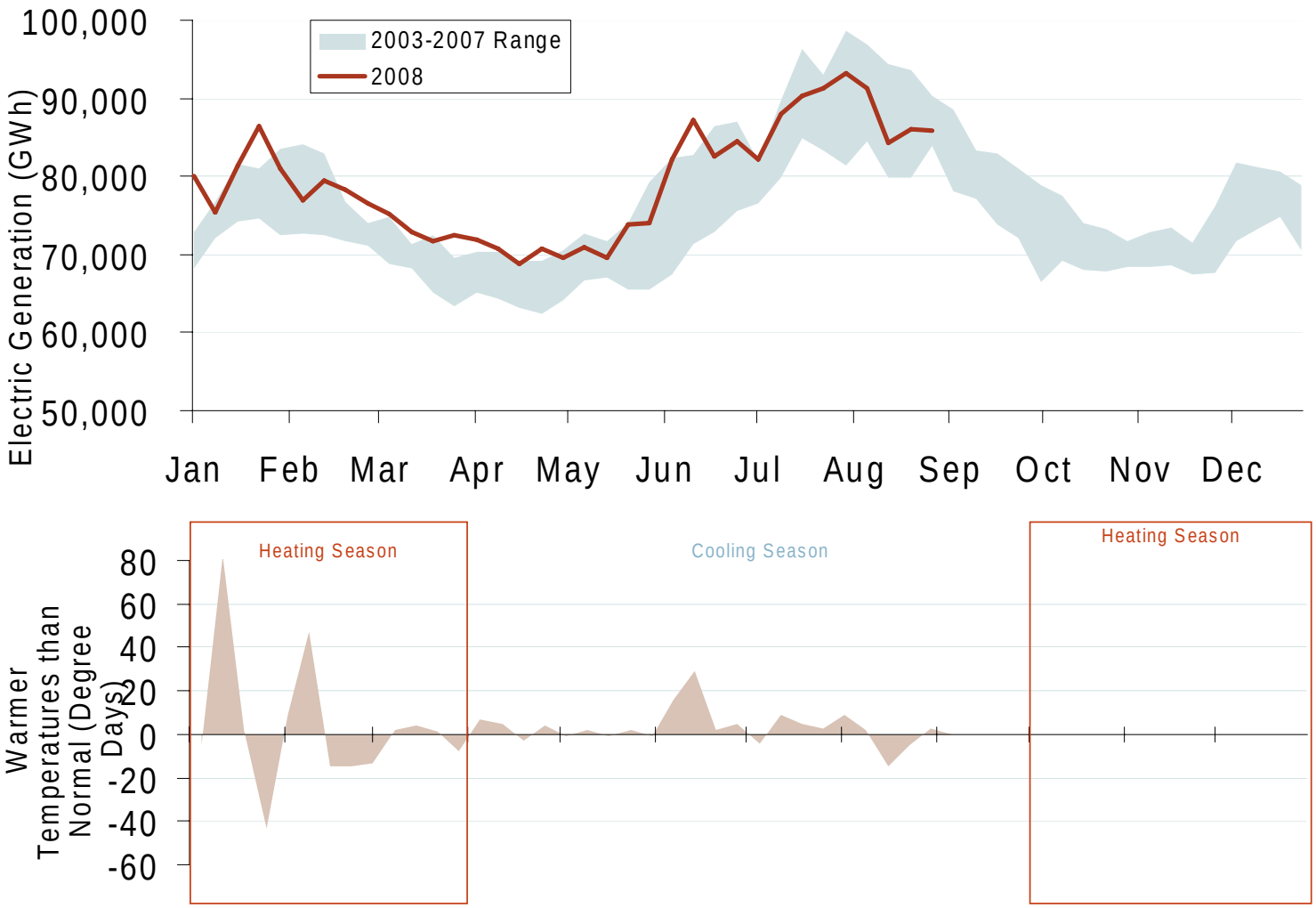
Weekly U.S. Electric Generation Output and Temperatures



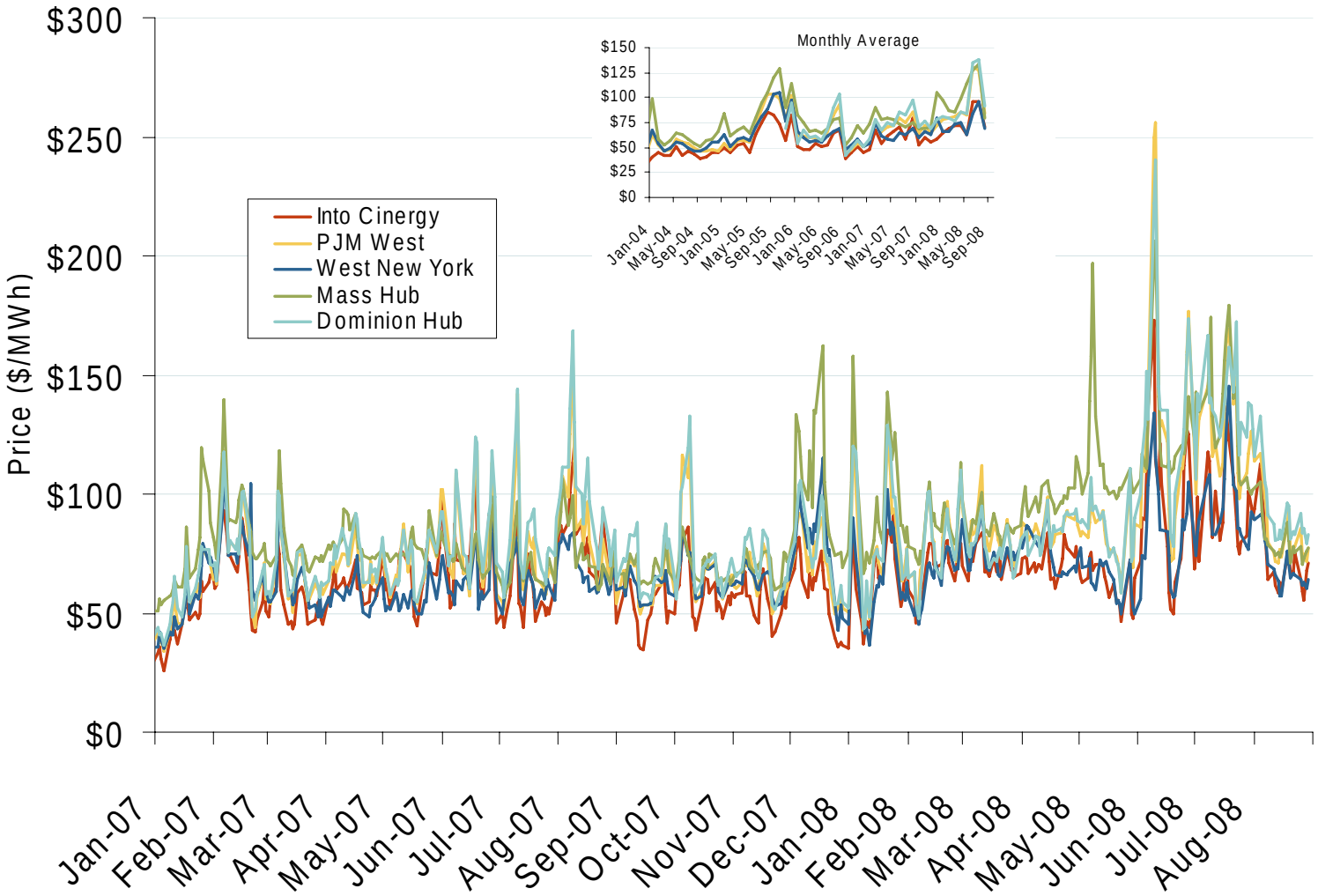
Source: Derived from *EEI* and *NOAA* data.

Updated September 5, 2008

Prices and Market Analysis

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

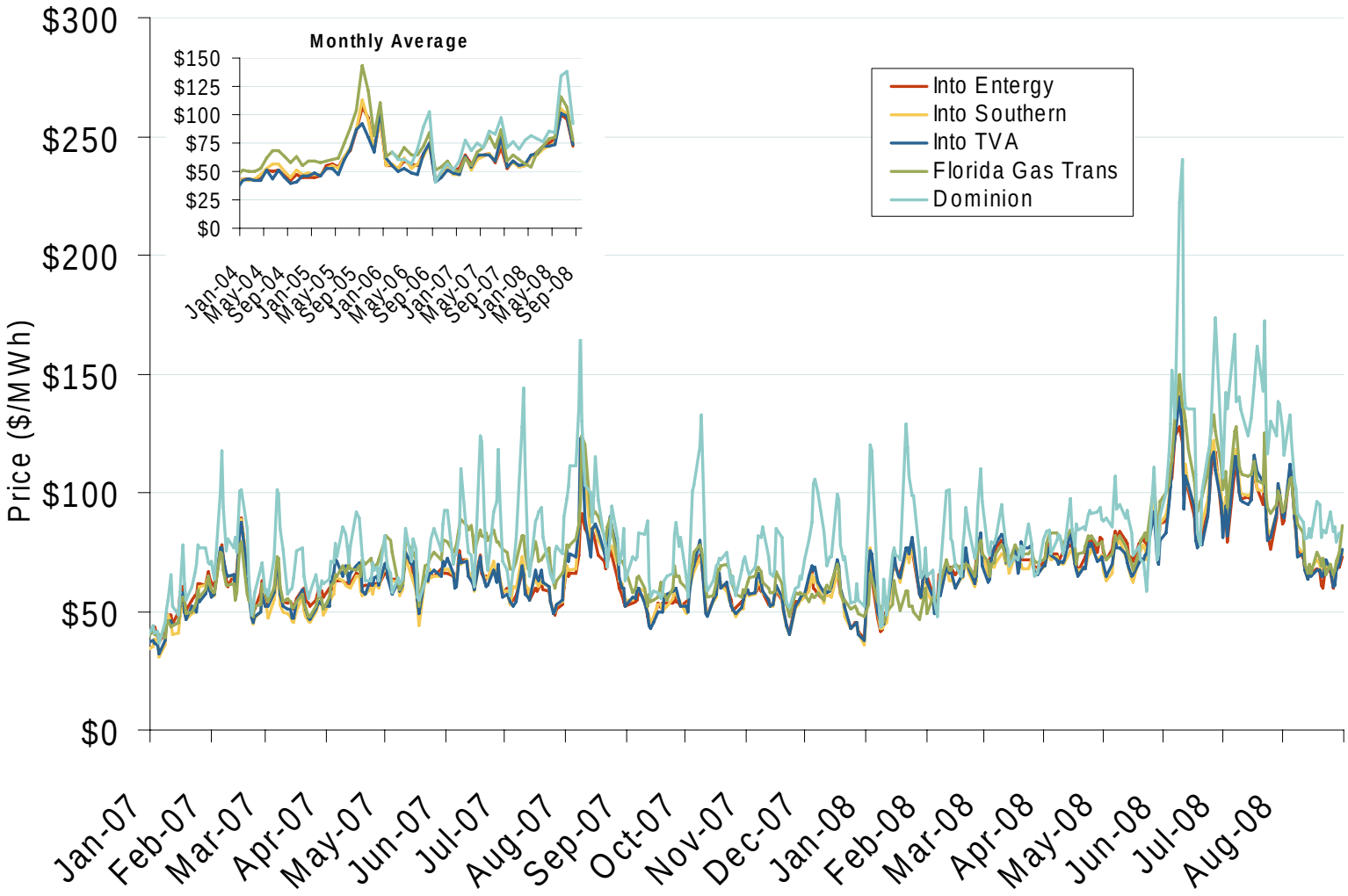
Eastern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated September 5, 2008

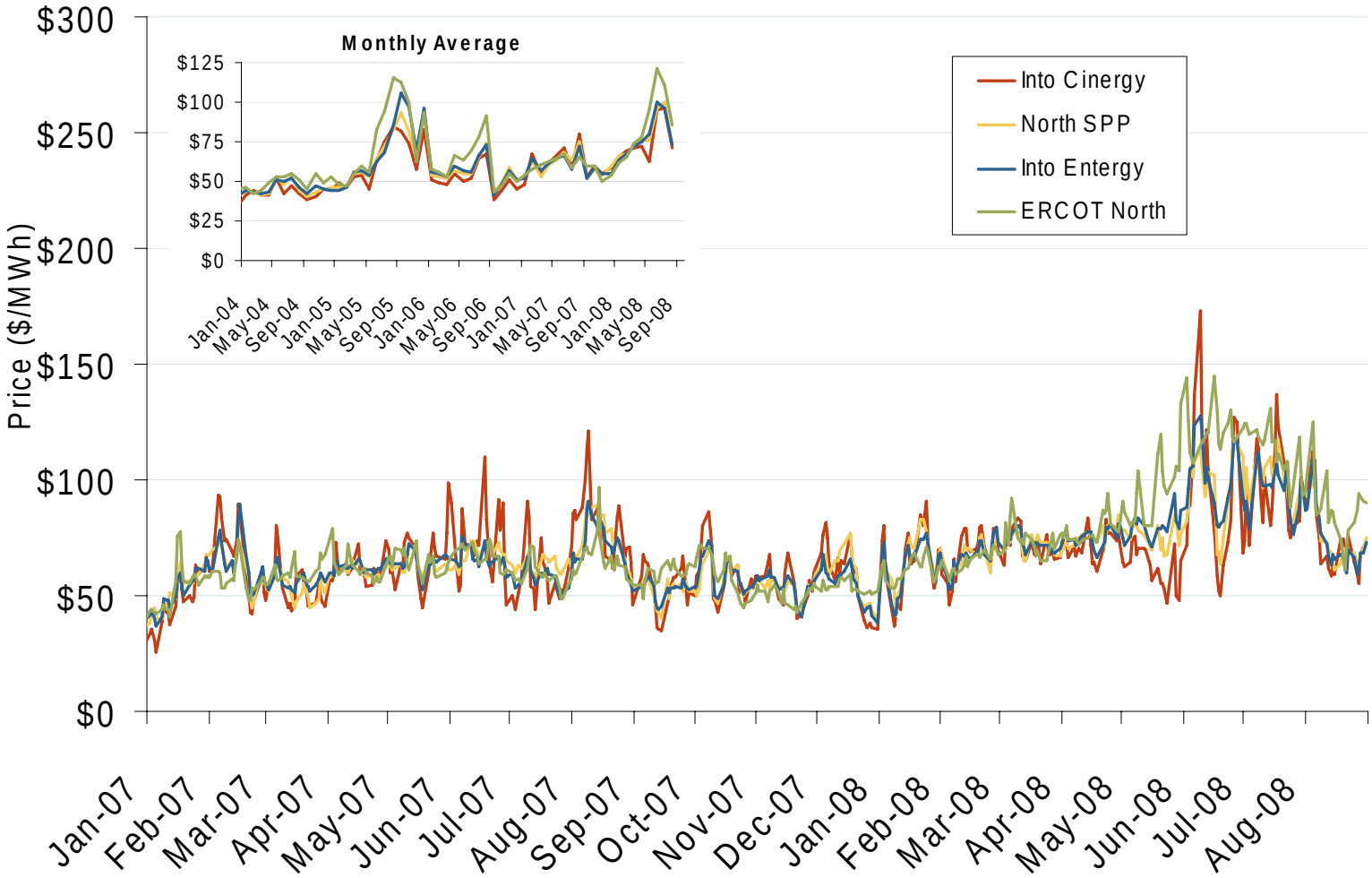
Southeastern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated September 5, 2008

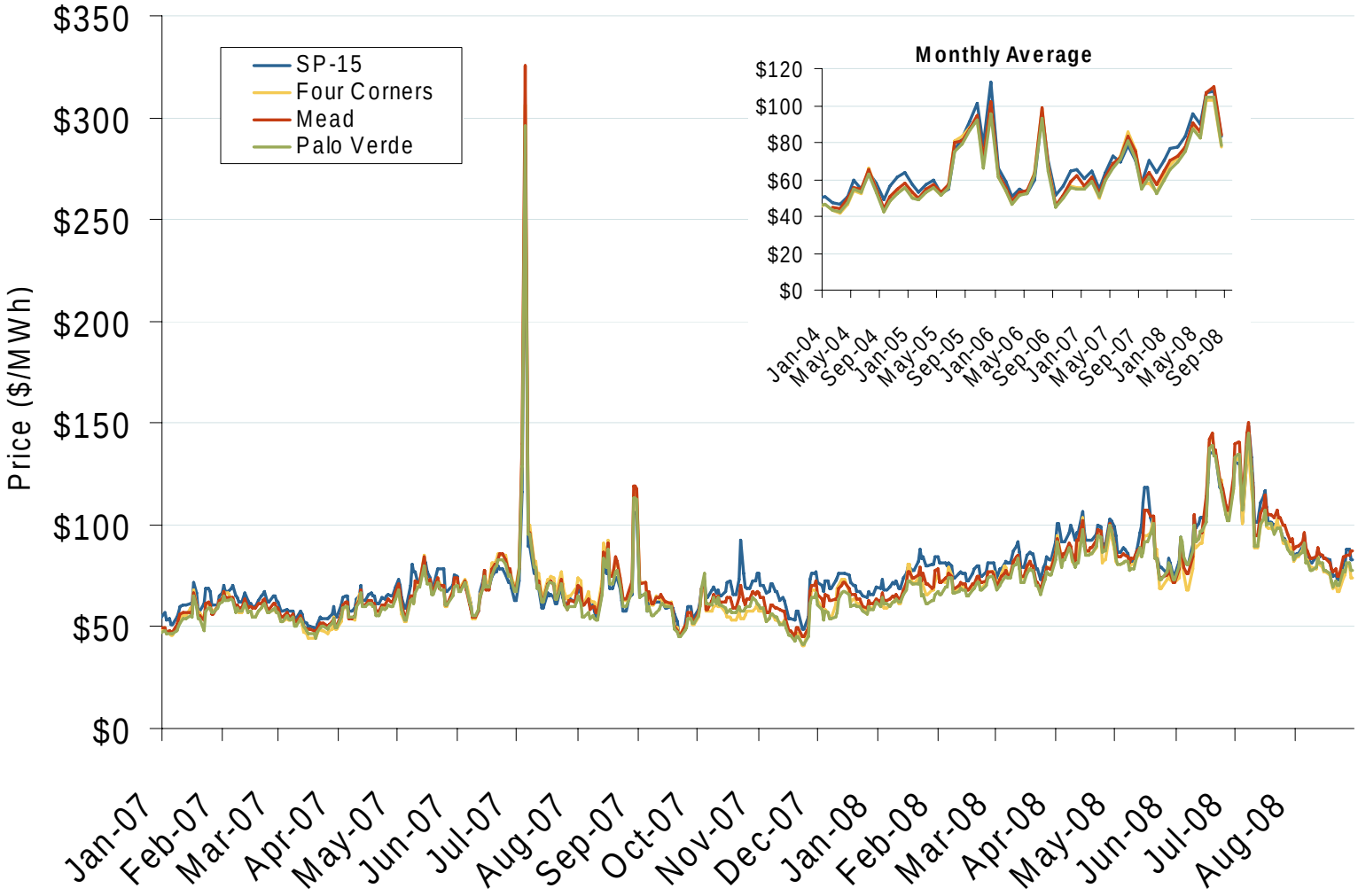
Central Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated September 5, 2008

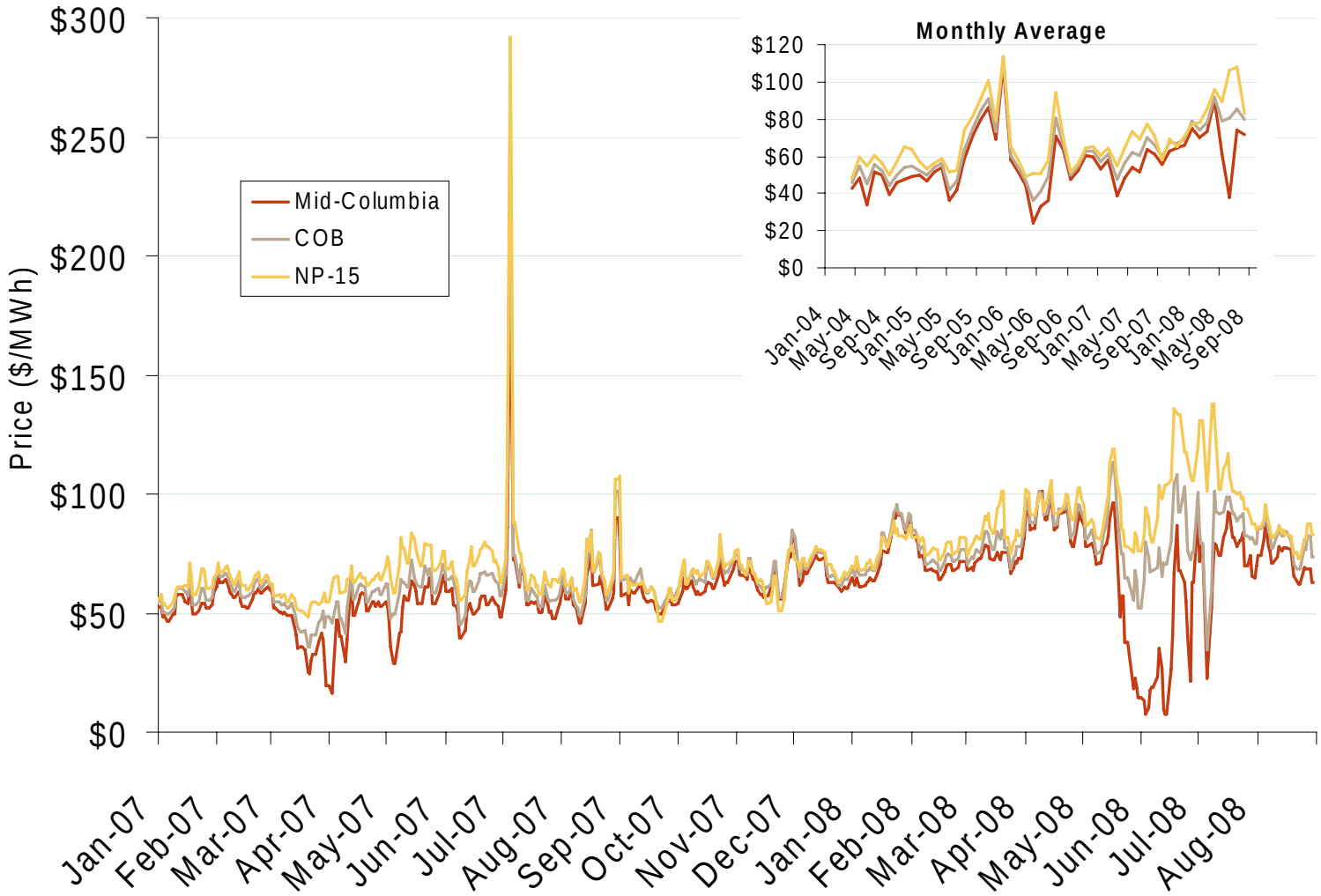
Southwestern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated September 5, 2008

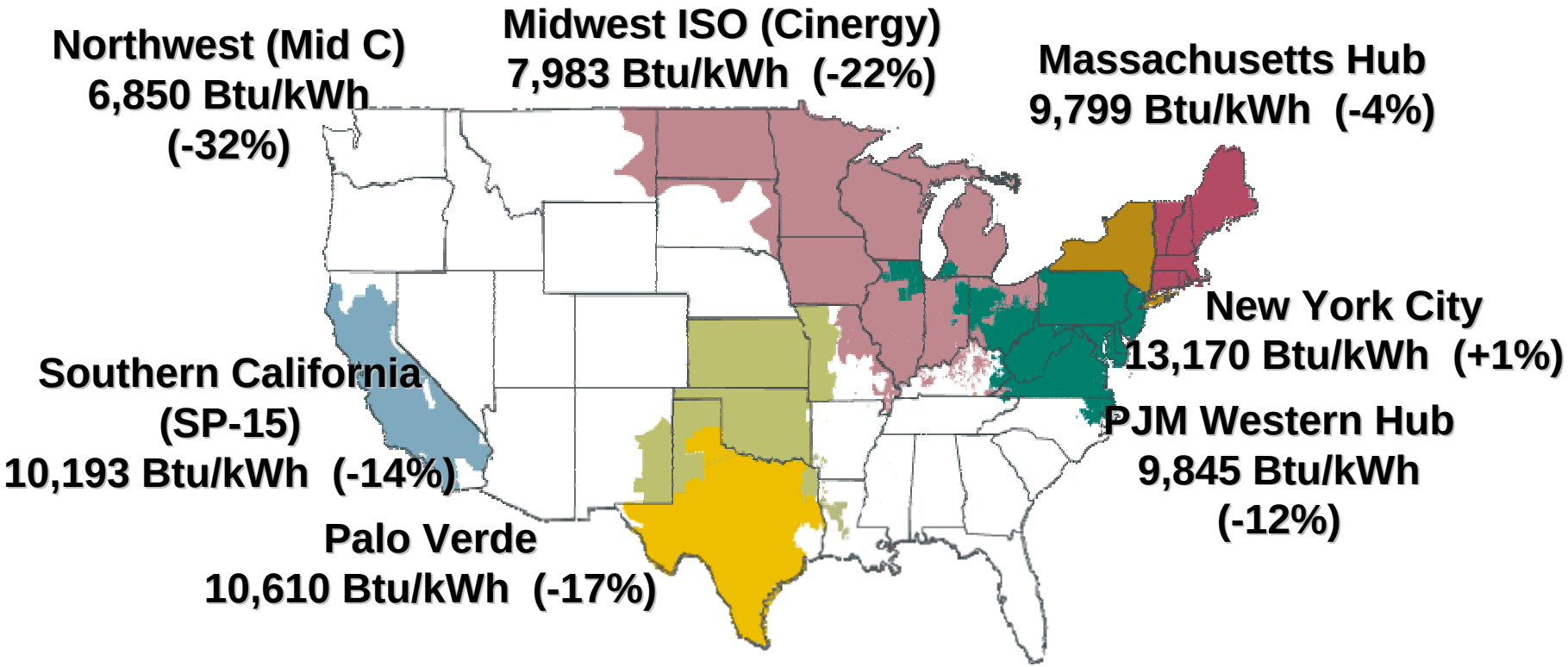
Northwestern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated September 5, 2008

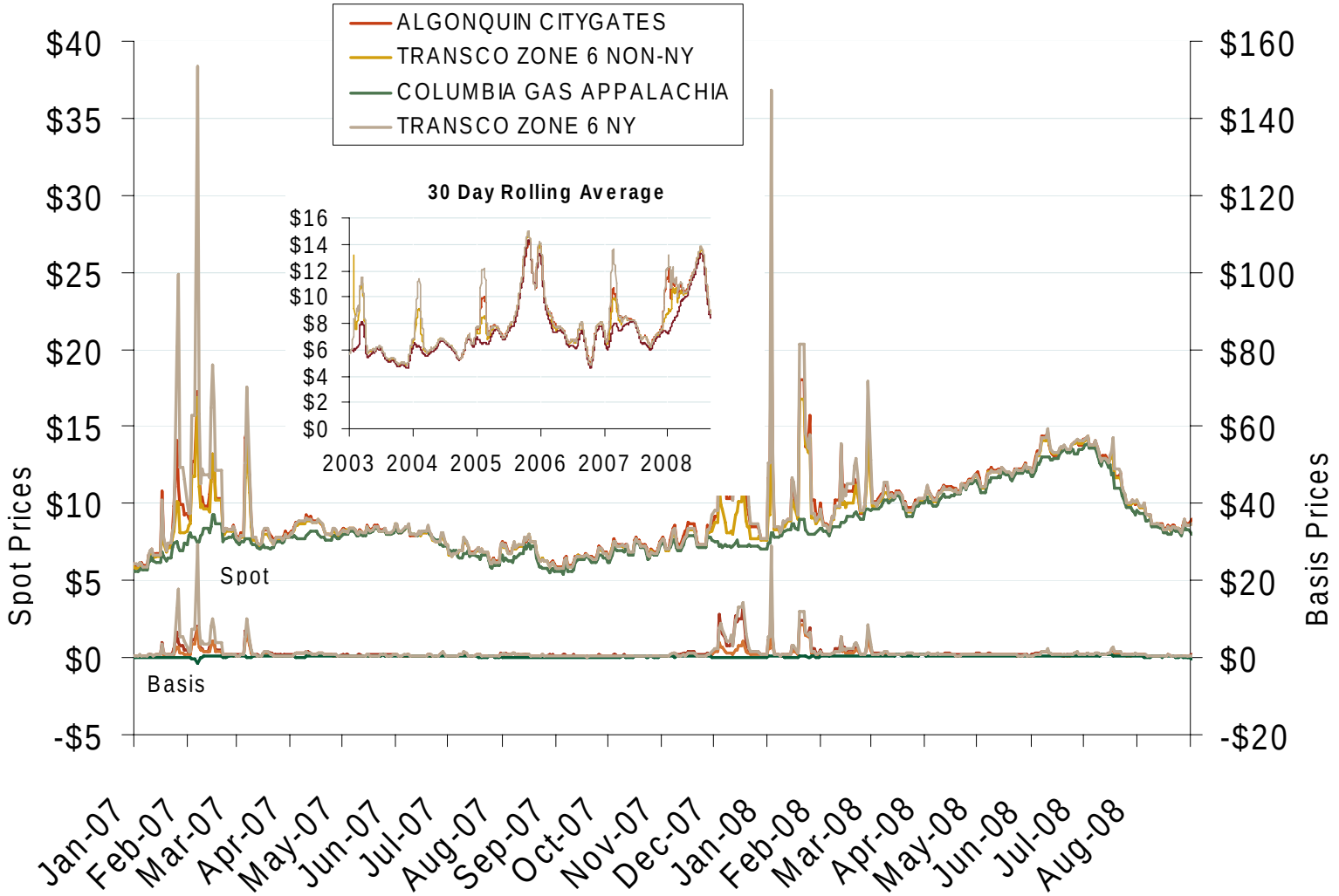
June-August Implied Heat Rates, 2008 vs. 2007



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

Updated September 9, 2008

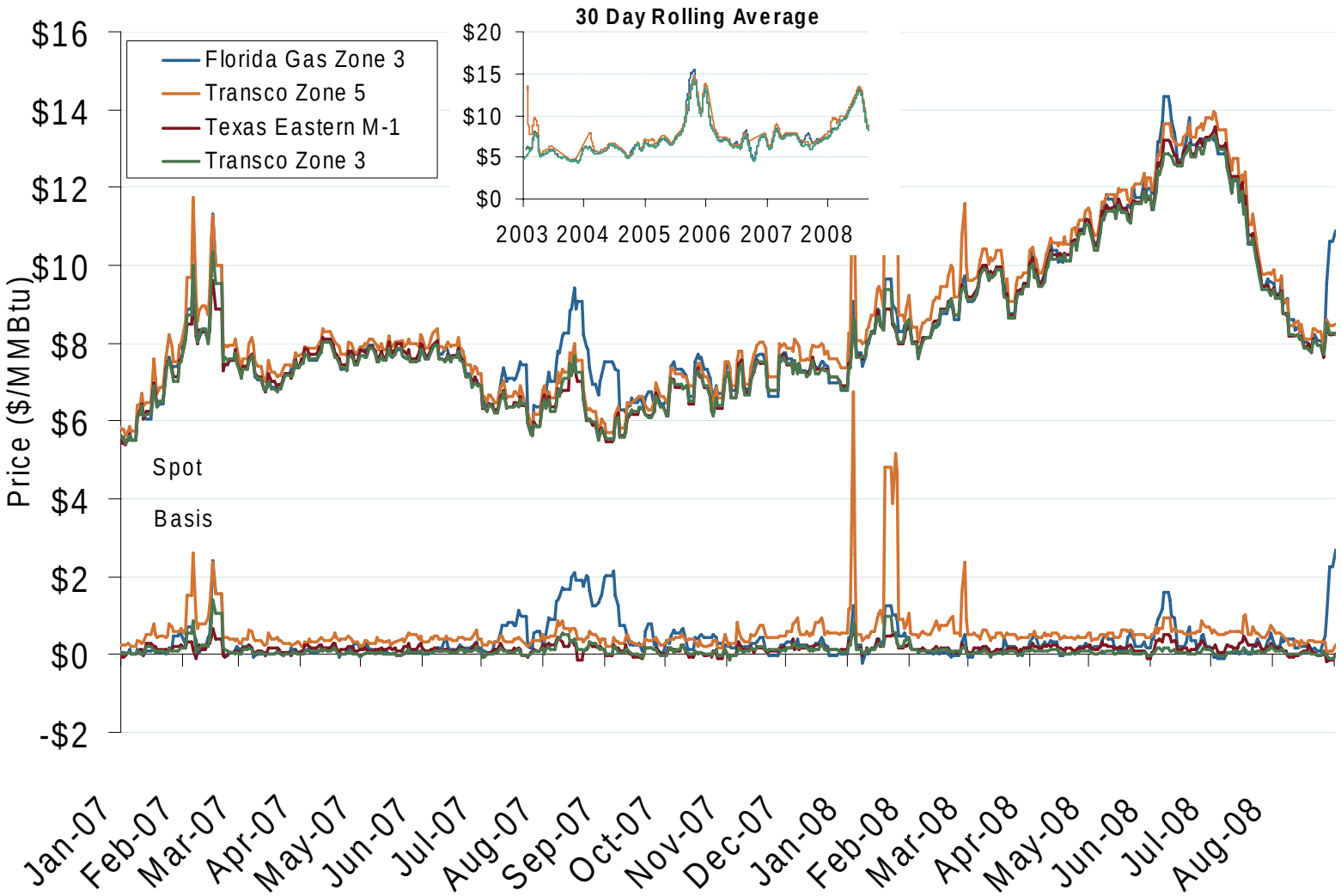
Northeastern Spot Prices and Basis



Source: Derived from *Platts* data.

Updated September 5, 2008

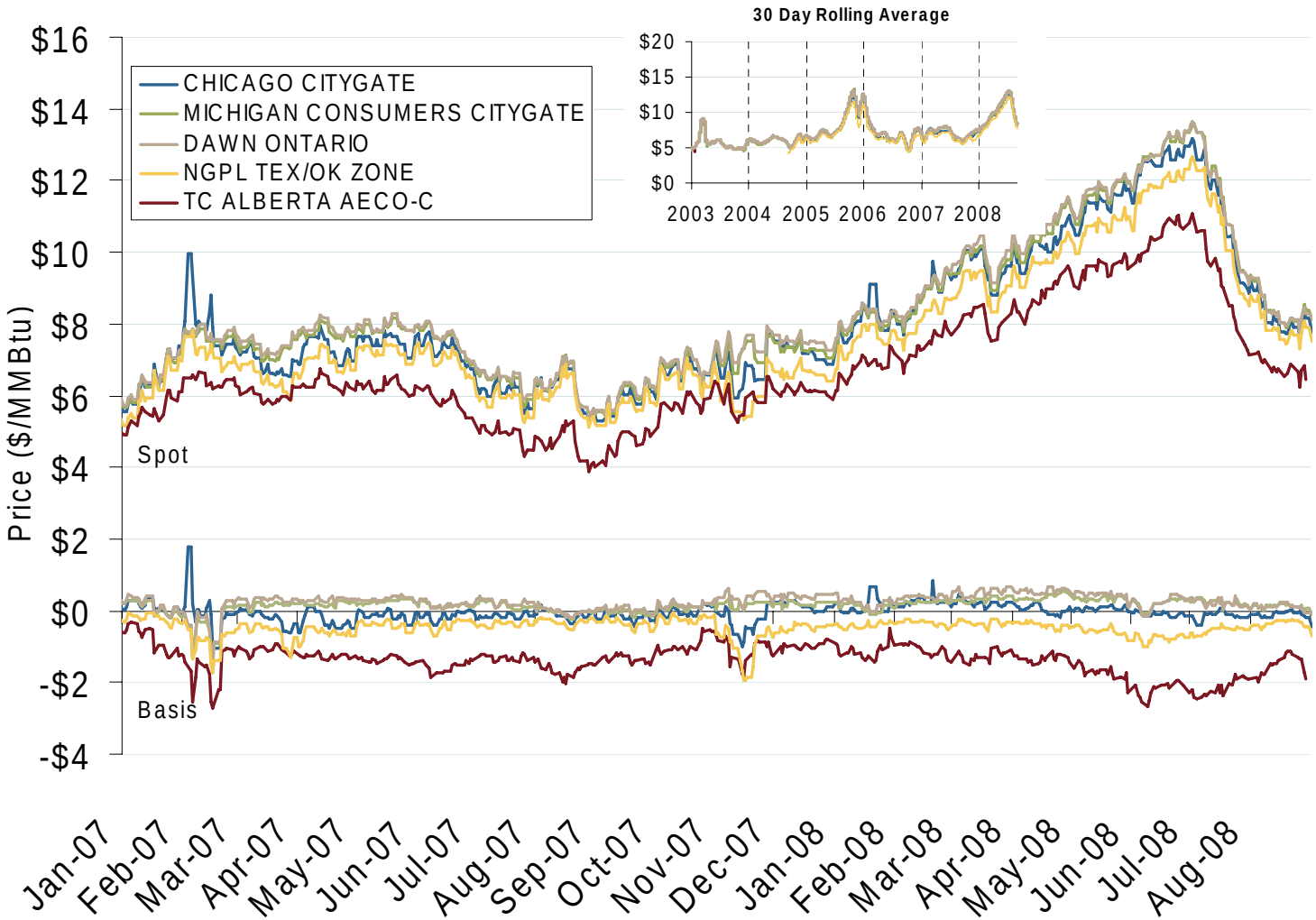
Southeastern Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated September 5, 2008

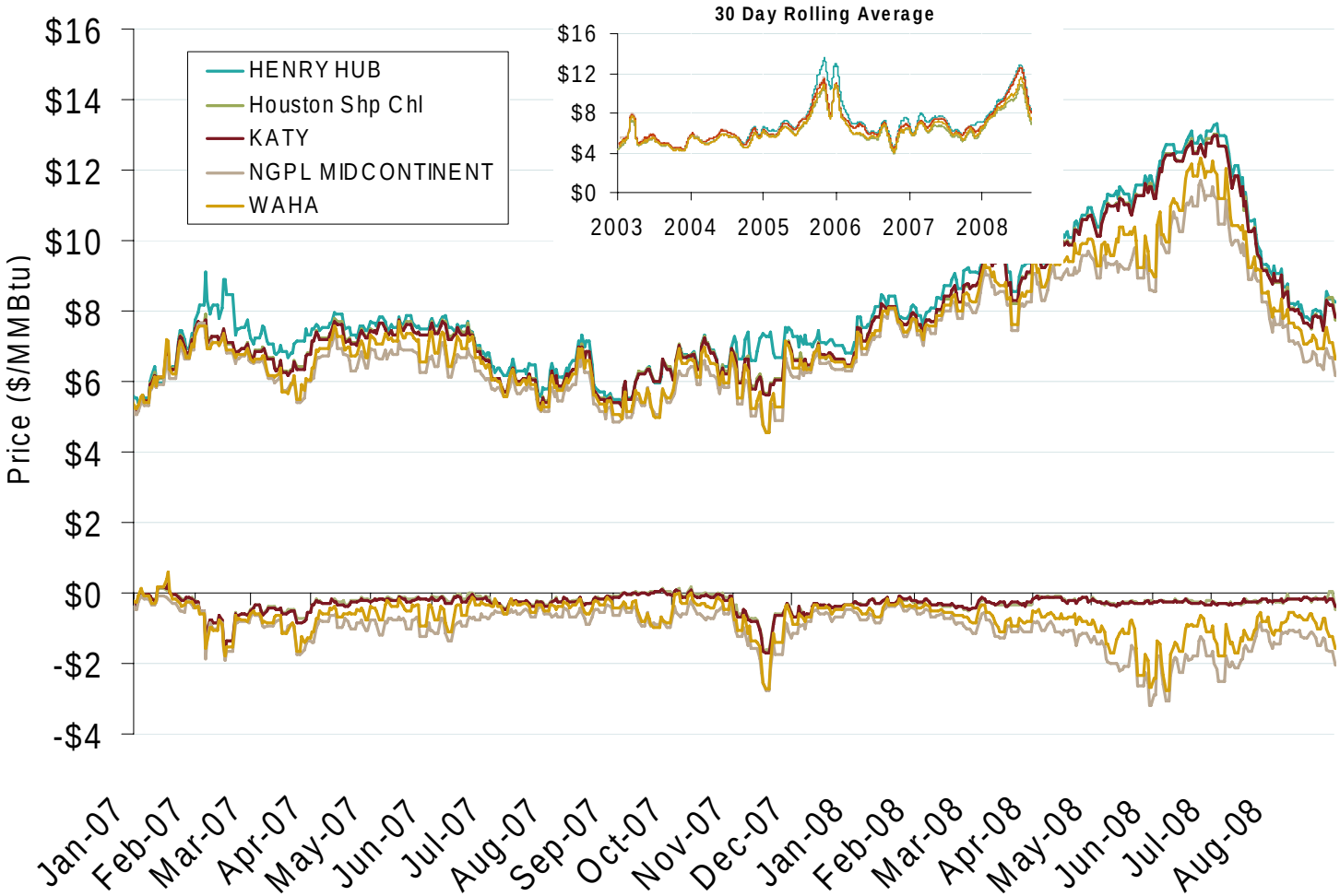
Midwestern Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated September 5, 2008

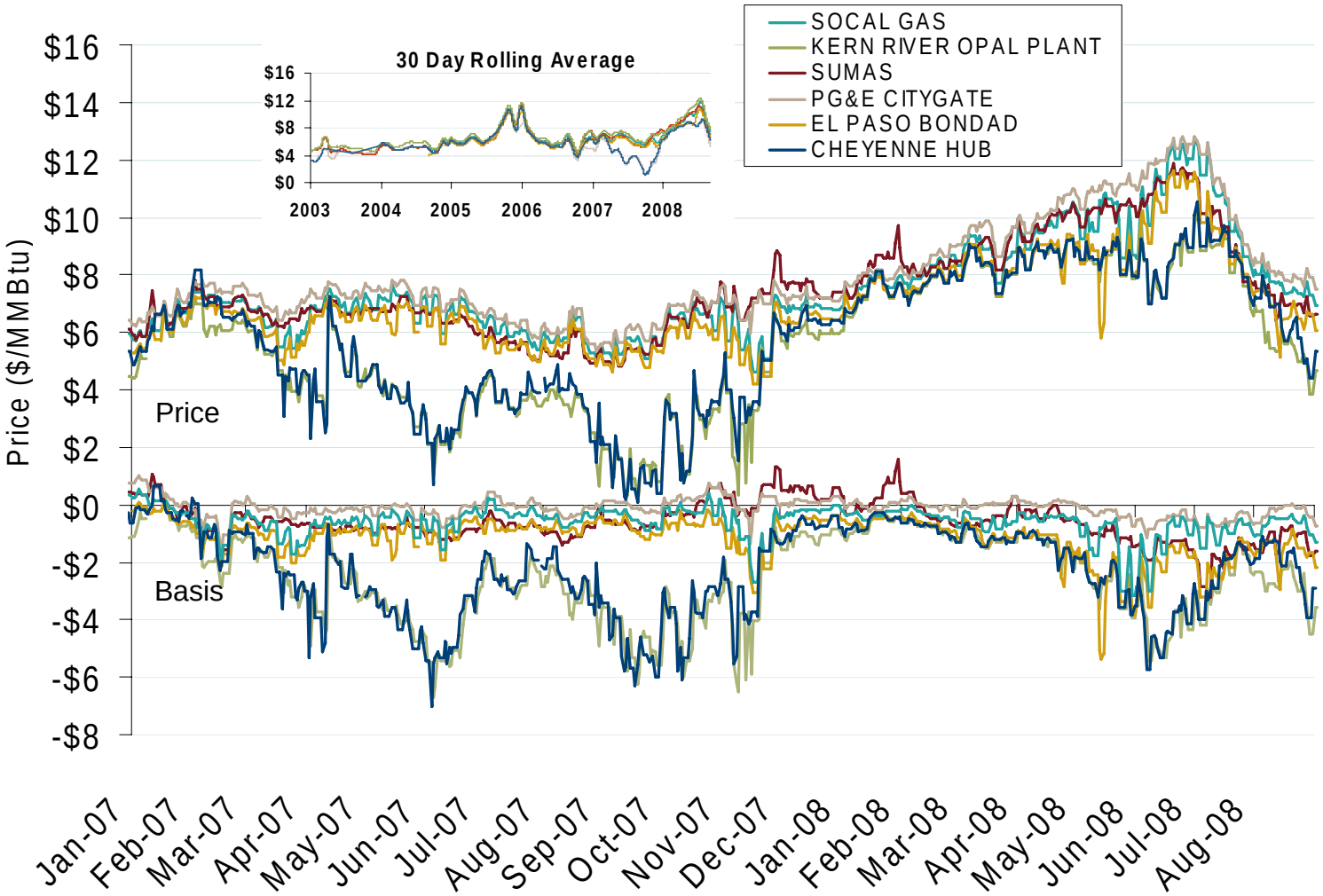
South Central Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated September 5, 2008

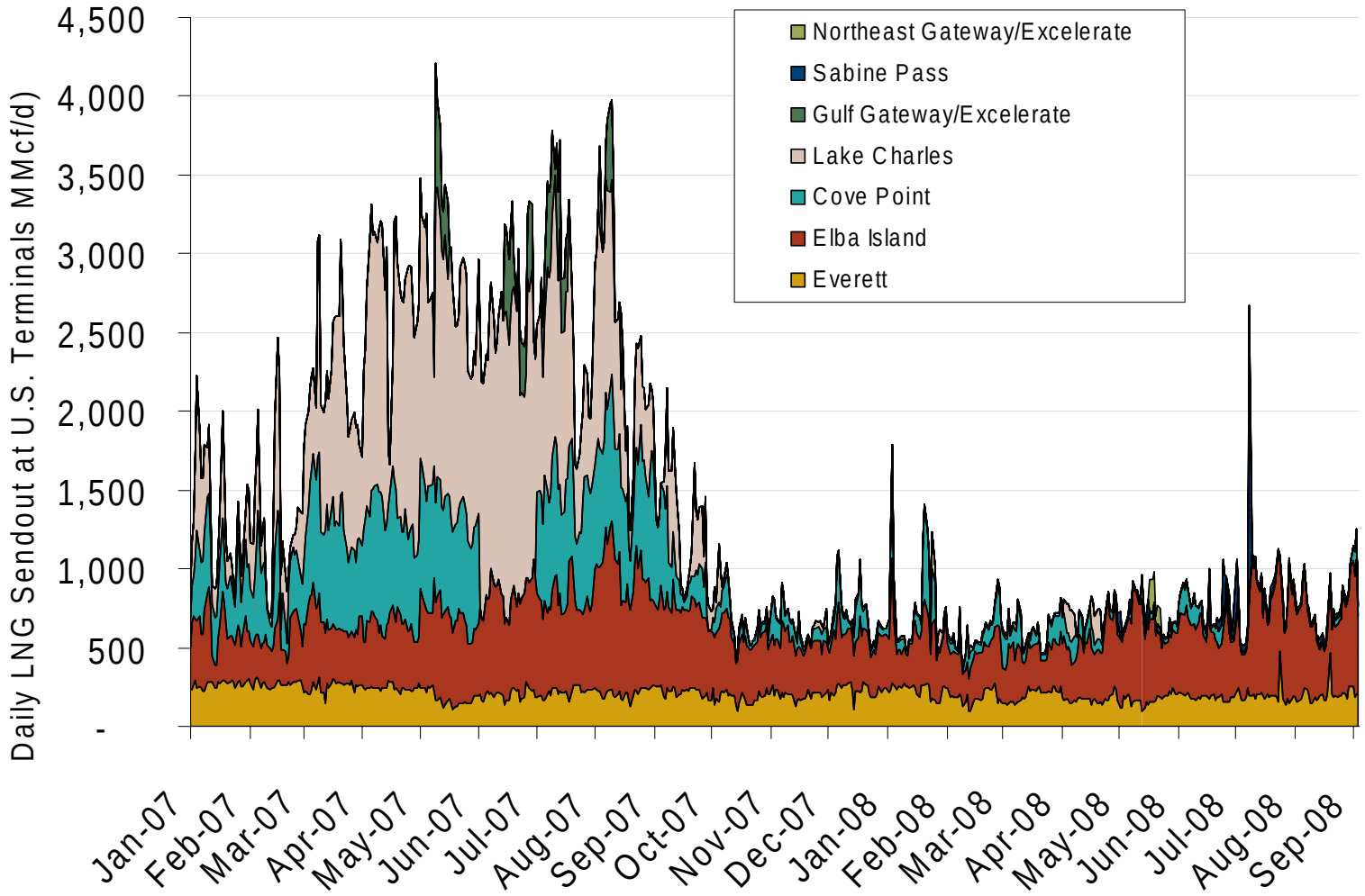
Western Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated September 5, 2008

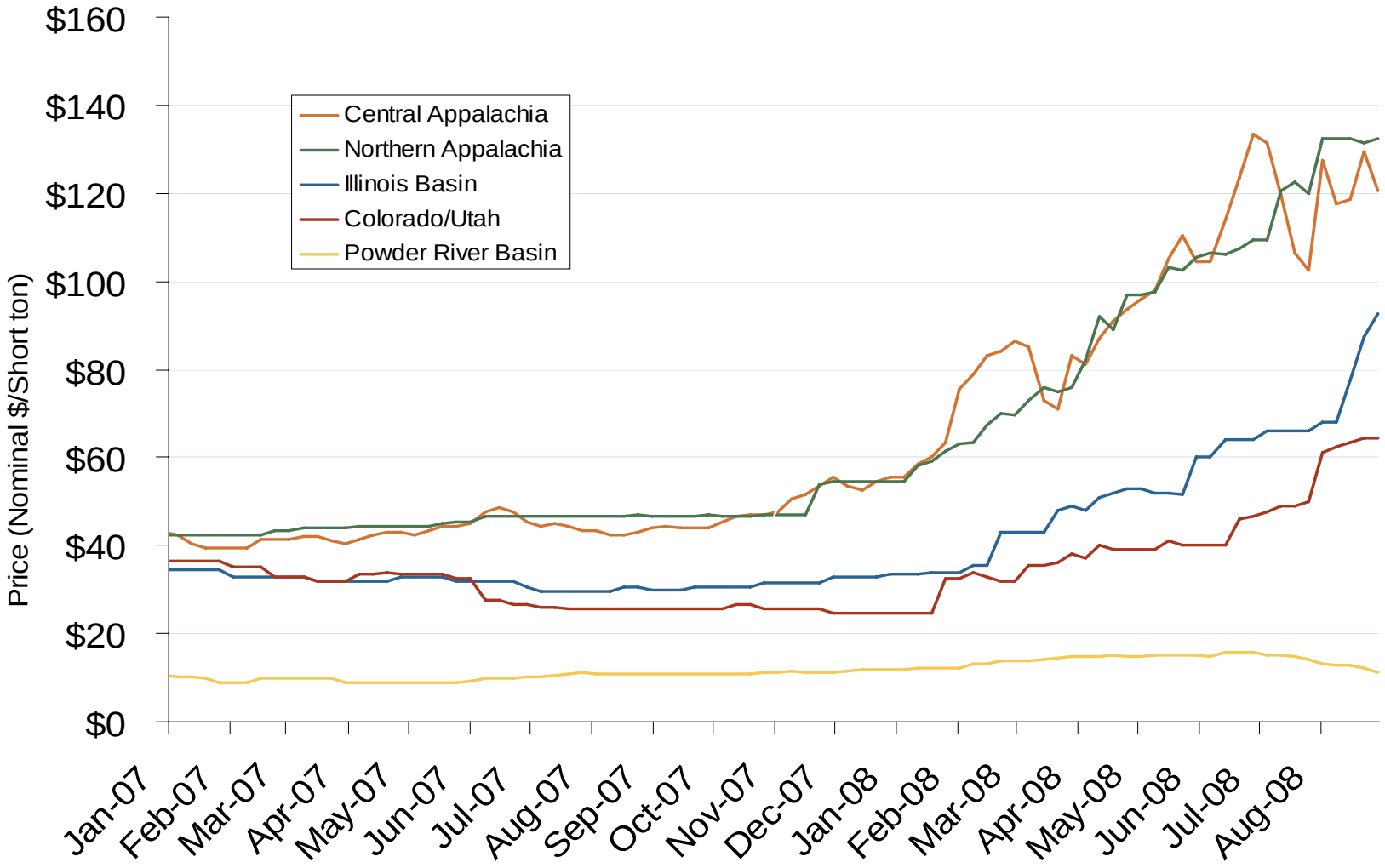
Daily Gas Sendout from Existing U.S. LNG Facilities



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.

Updated September 5, 2008

Regional Coal Spot Prices

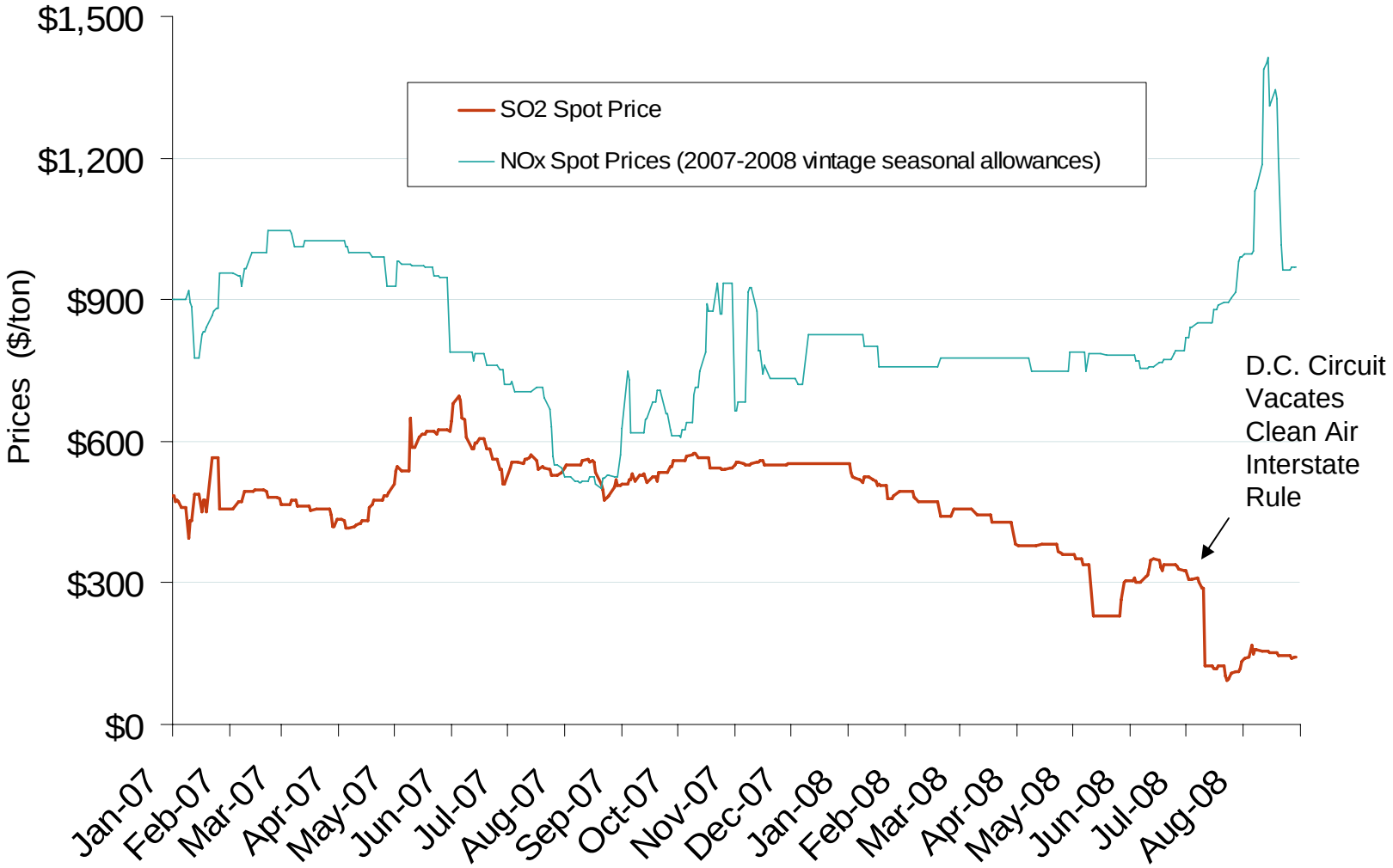


Note: Does not reflect the delivered price of coal; excludes incremental cost of emissions allowances.

Source: Derived from *Bloomberg* data.

Updated September 5, 2008

SO_2 Allowance Spot Prices and NOx Seasonal Allowance Spot Prices



Source: Derived from *Cantor Fitzgerald* data.

See notes on following pages.

Updated August 14, 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

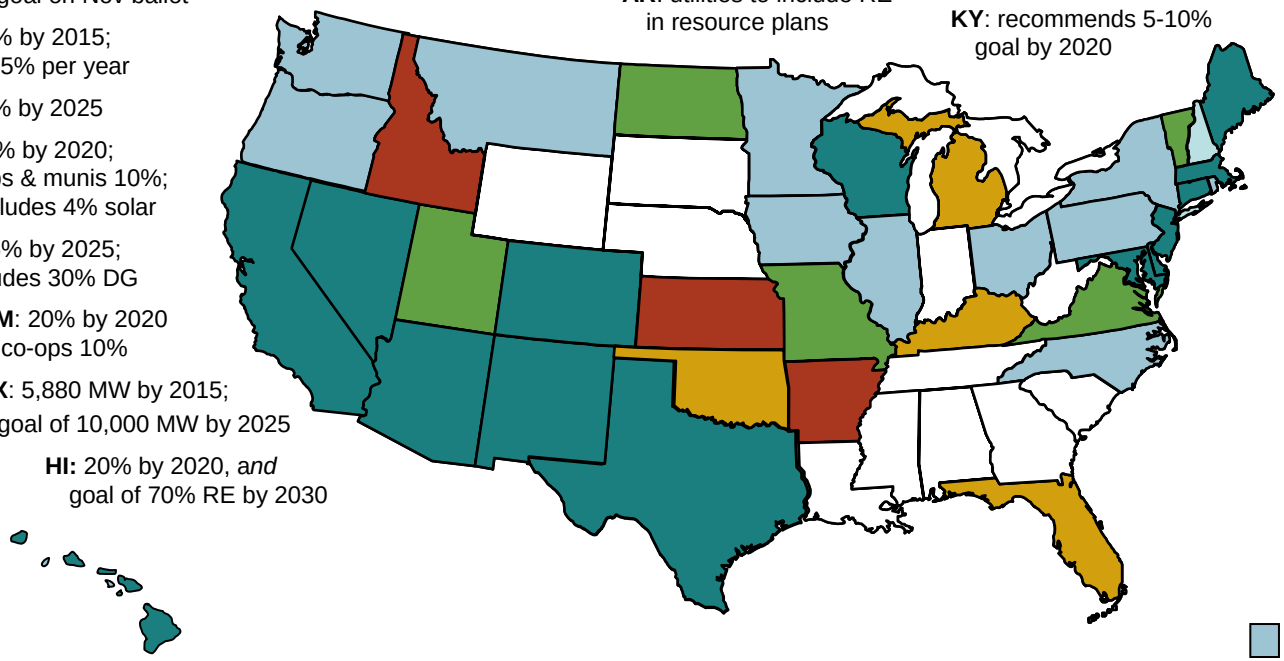
WI: 10% by 2015

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

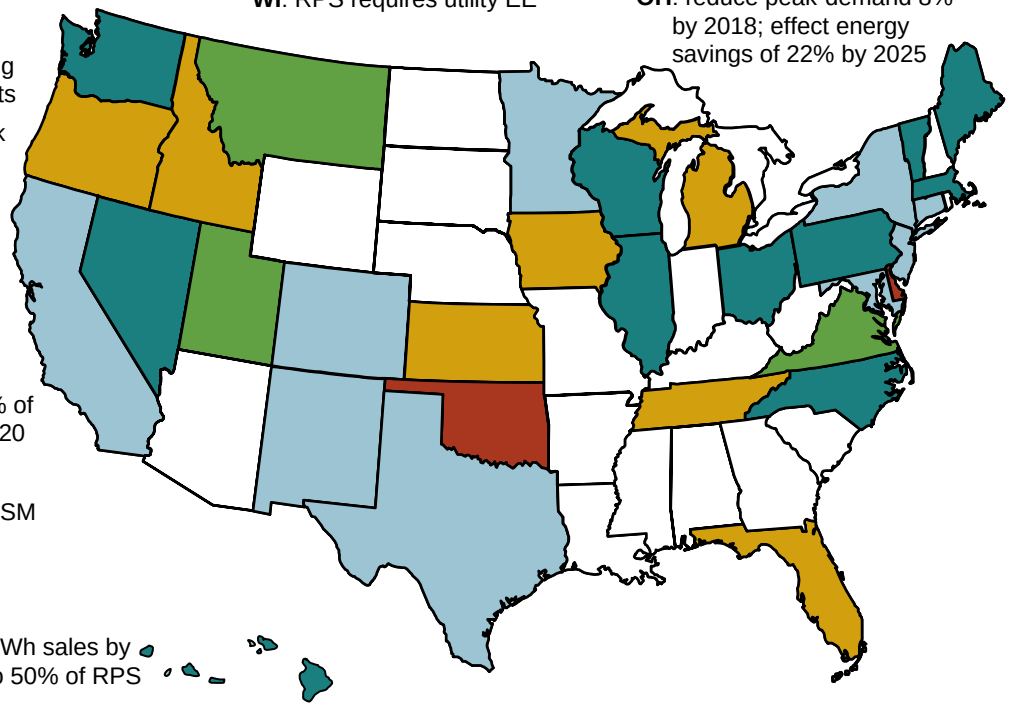
NM: use EE and DR to save 10% of 2005 retail electric sales by 2020

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