OE ENERGY MARKET SNAPSHOT

Western States Version – March 2009 Data

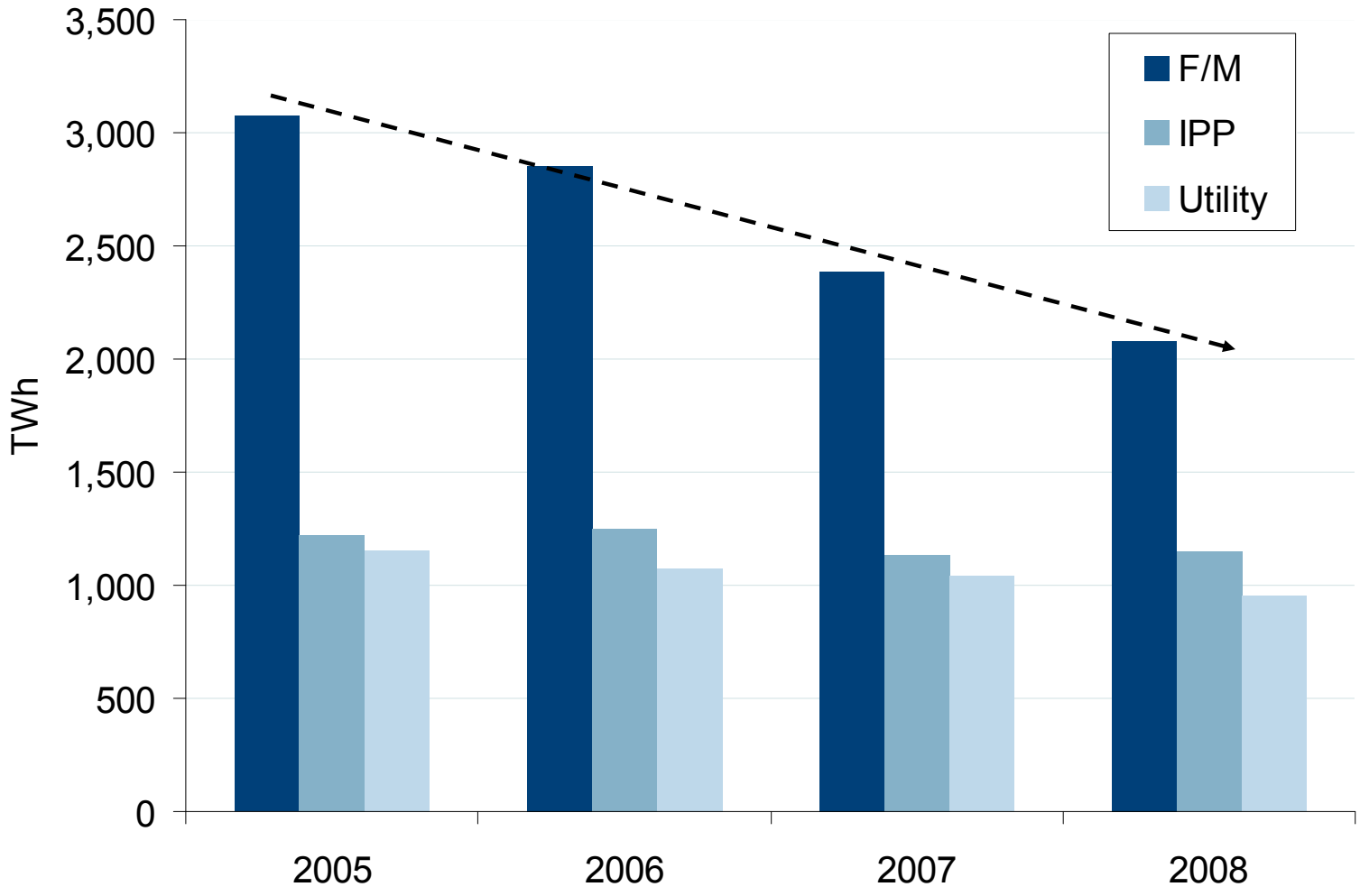
- **Special Report**
- **Natural Gas and Fuel Markets**
- **Electricity Markets**

Office of Enforcement
Federal Energy Regulatory Commission
April 2009

Special Report:

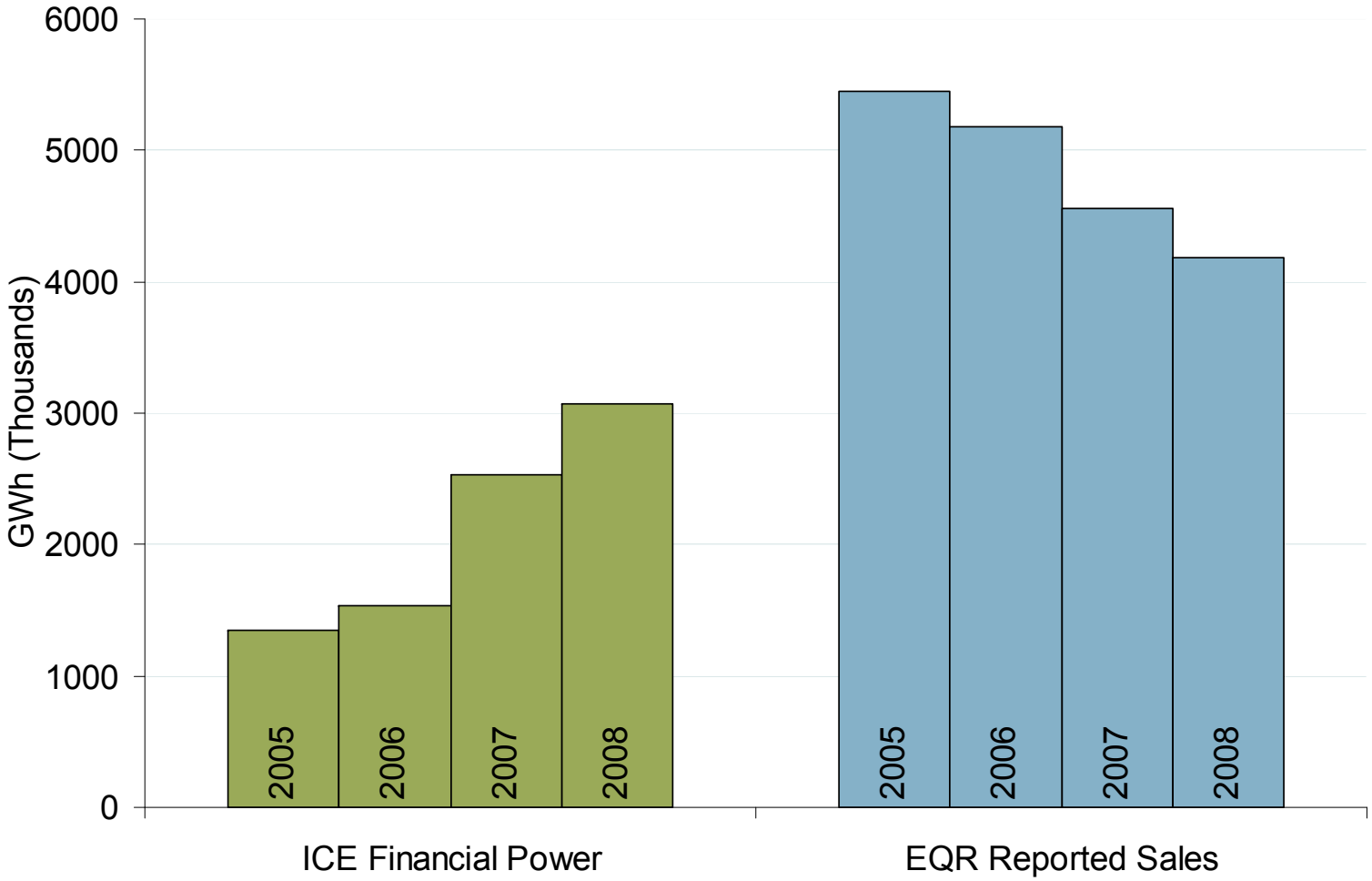
- **ICE and EQR Electric Transaction Volumes**

EQR Volume Declines led by Financial/Marketer Sellers



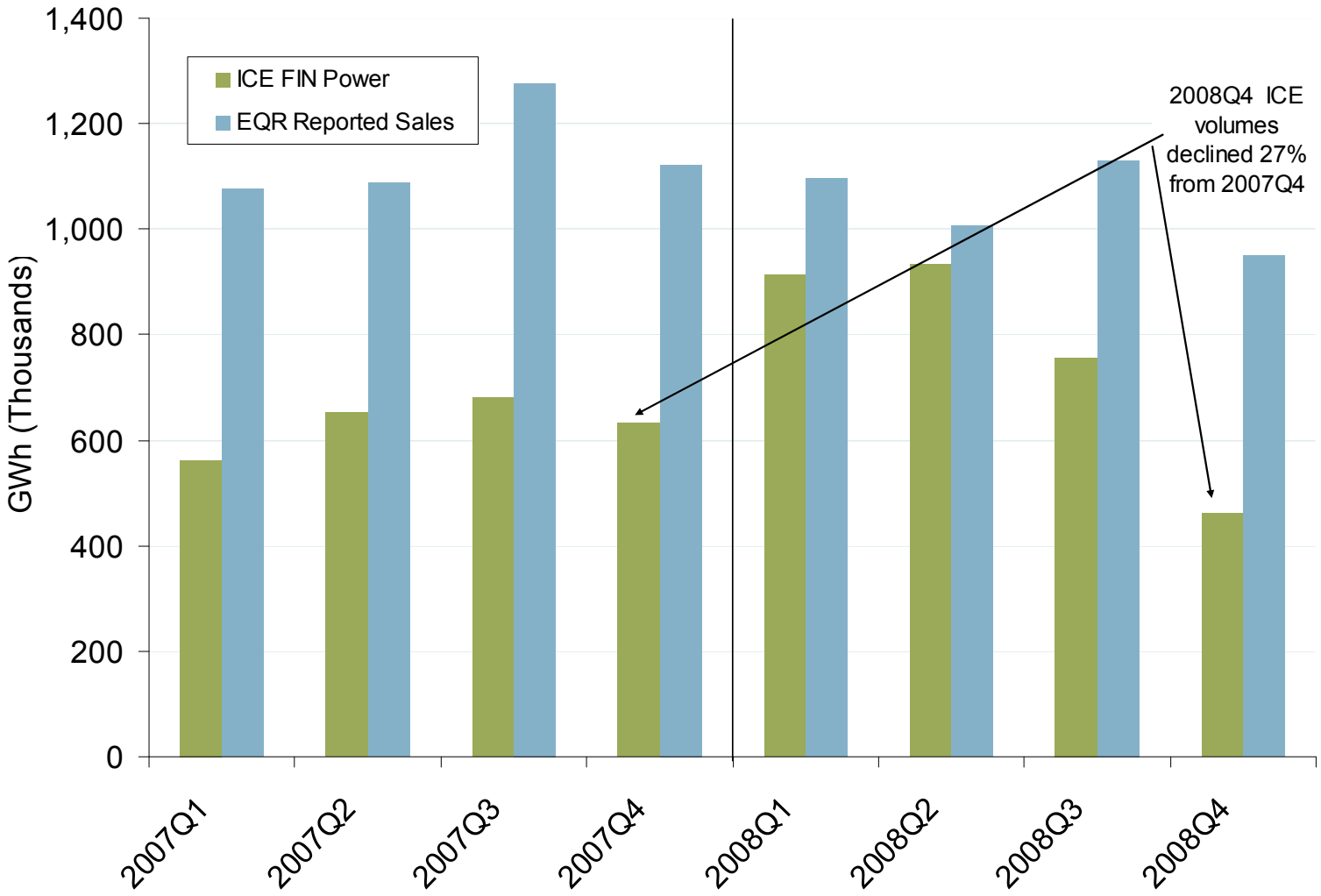
Source: Derived from *EQR* data.

Annual ICE and EQR Volumes: 2005-2008



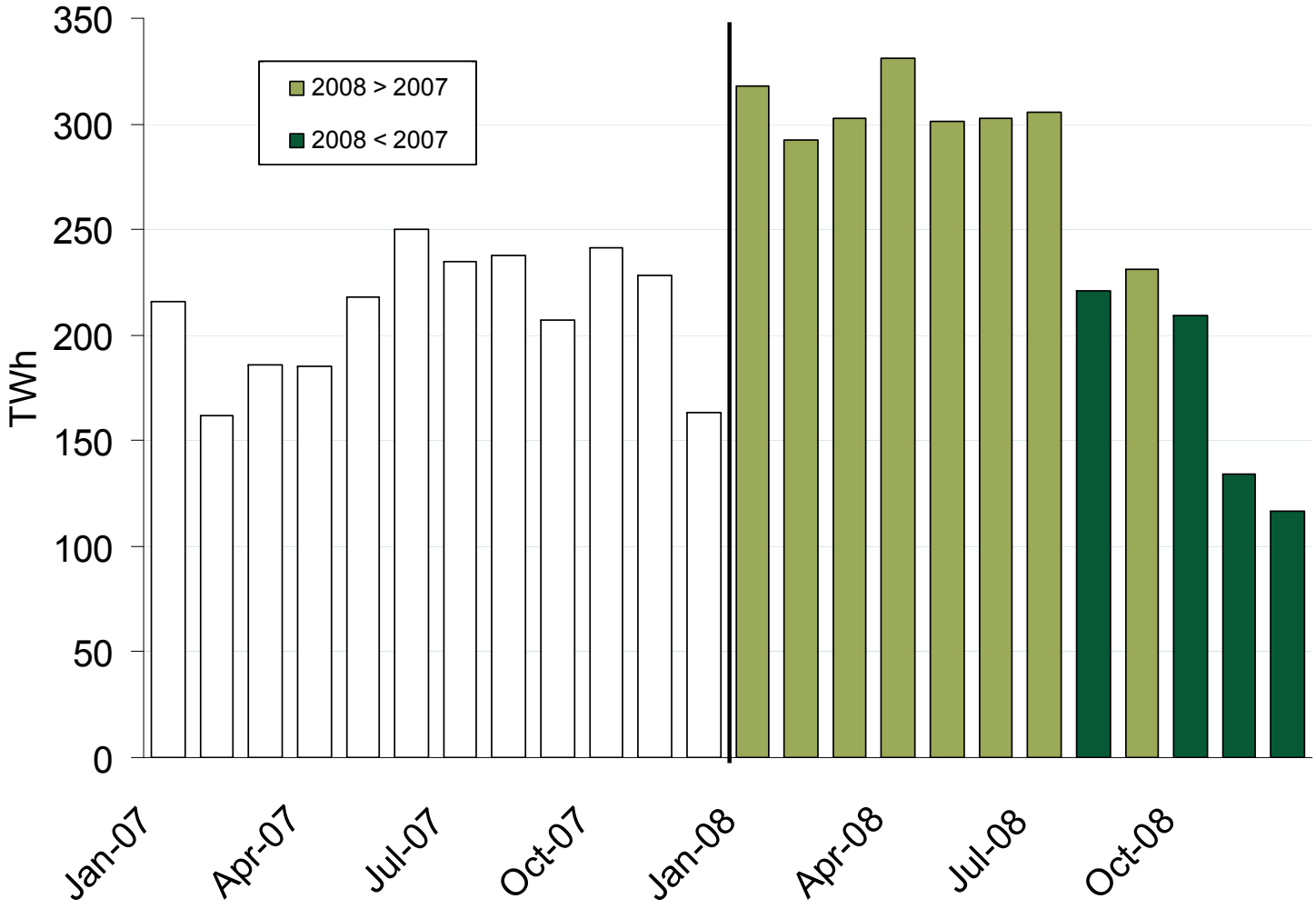
Source: Derived from *EQR and ICE* data.

Quarterly ICE and EQR Volumes: 2007-2008



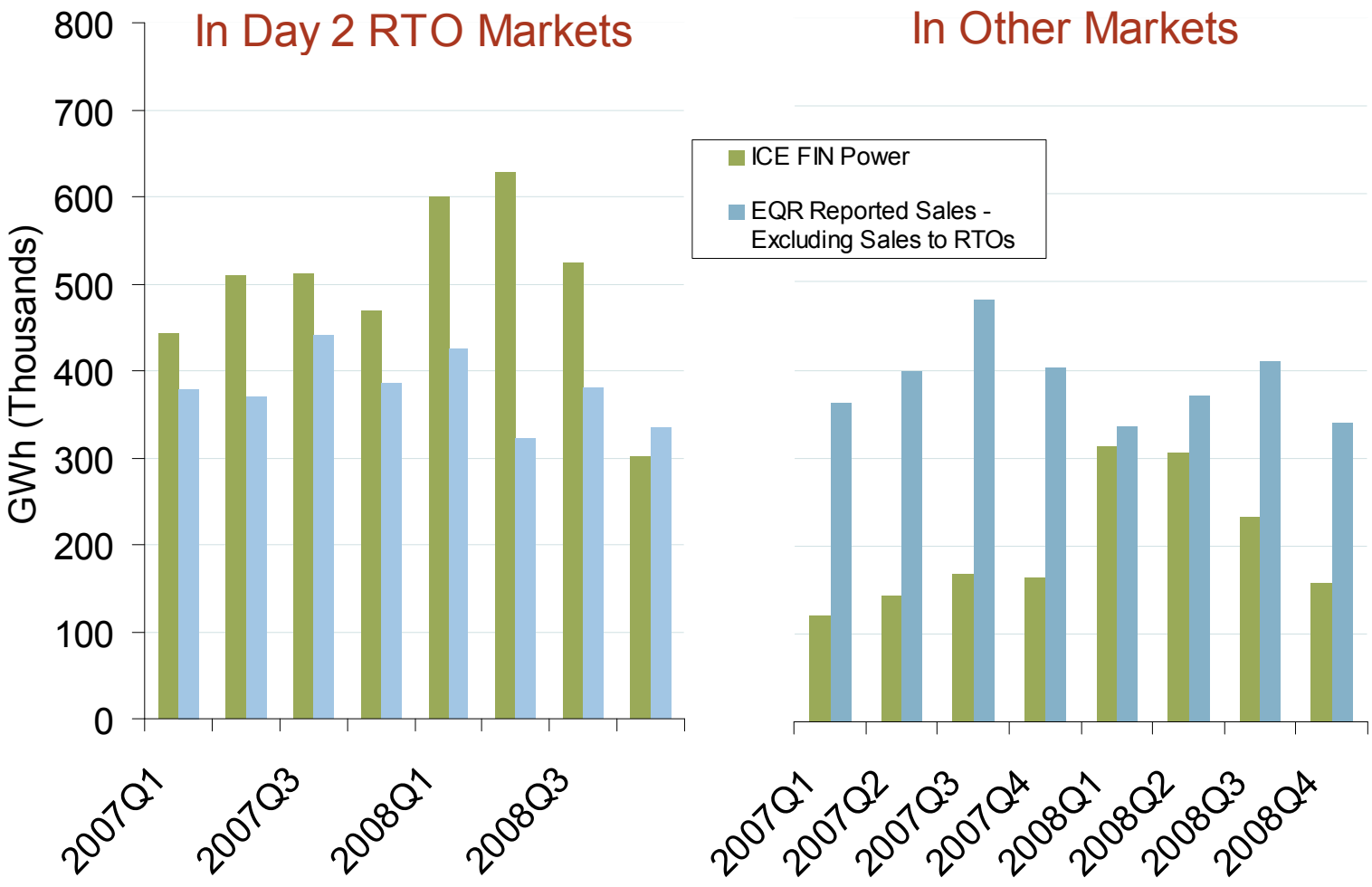
Source: Derived from *EQR and ICE* data.

Monthly ICE Volumes 2007-2008



Source: Derived from *ICE* data.

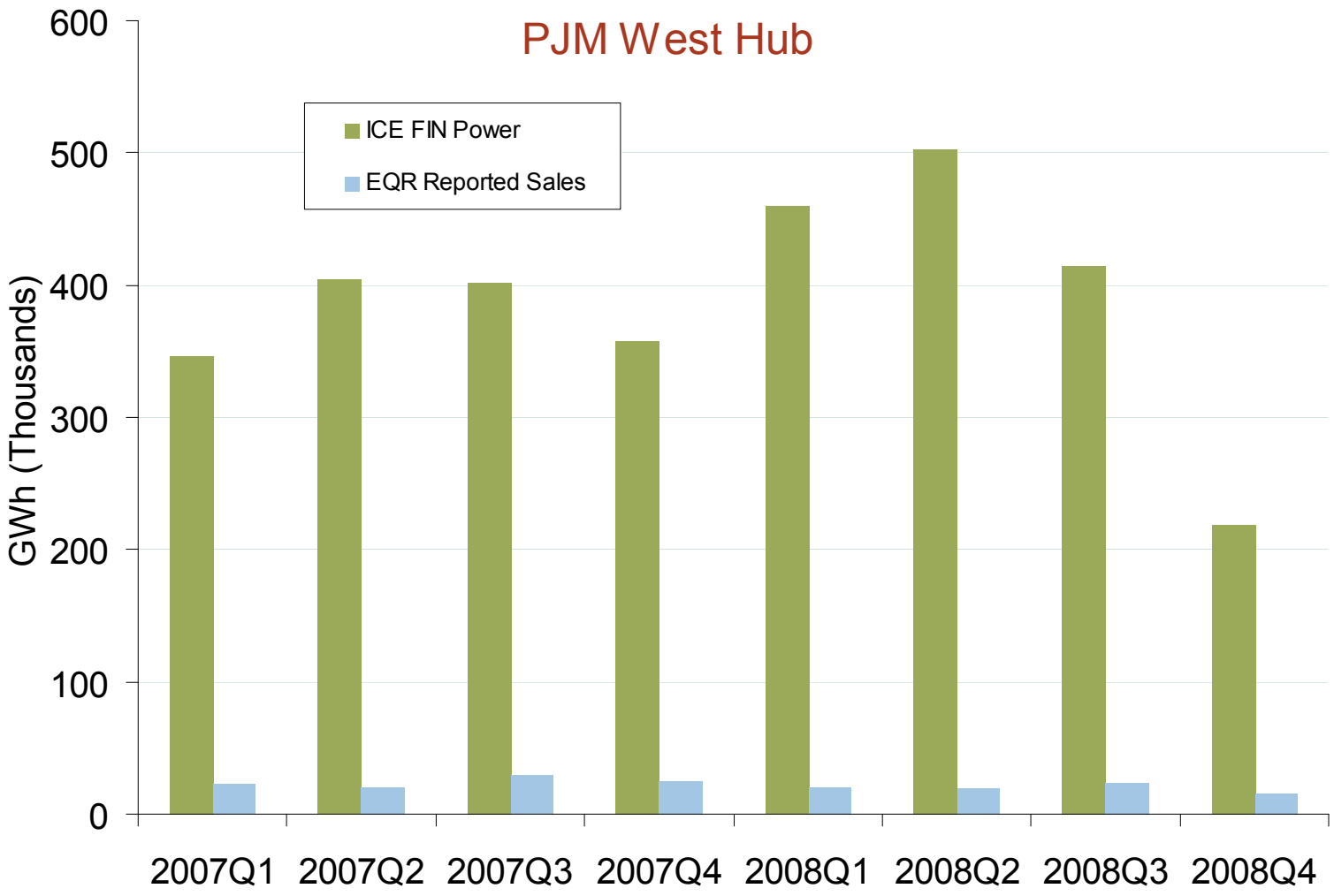
Quarterly ICE and EQR Volumes



ISO-NE, MISO, NYISO, and PJM included in Day 2 RTO Markets. CAISO, SPP and non-RTO areas included in Other Markets.

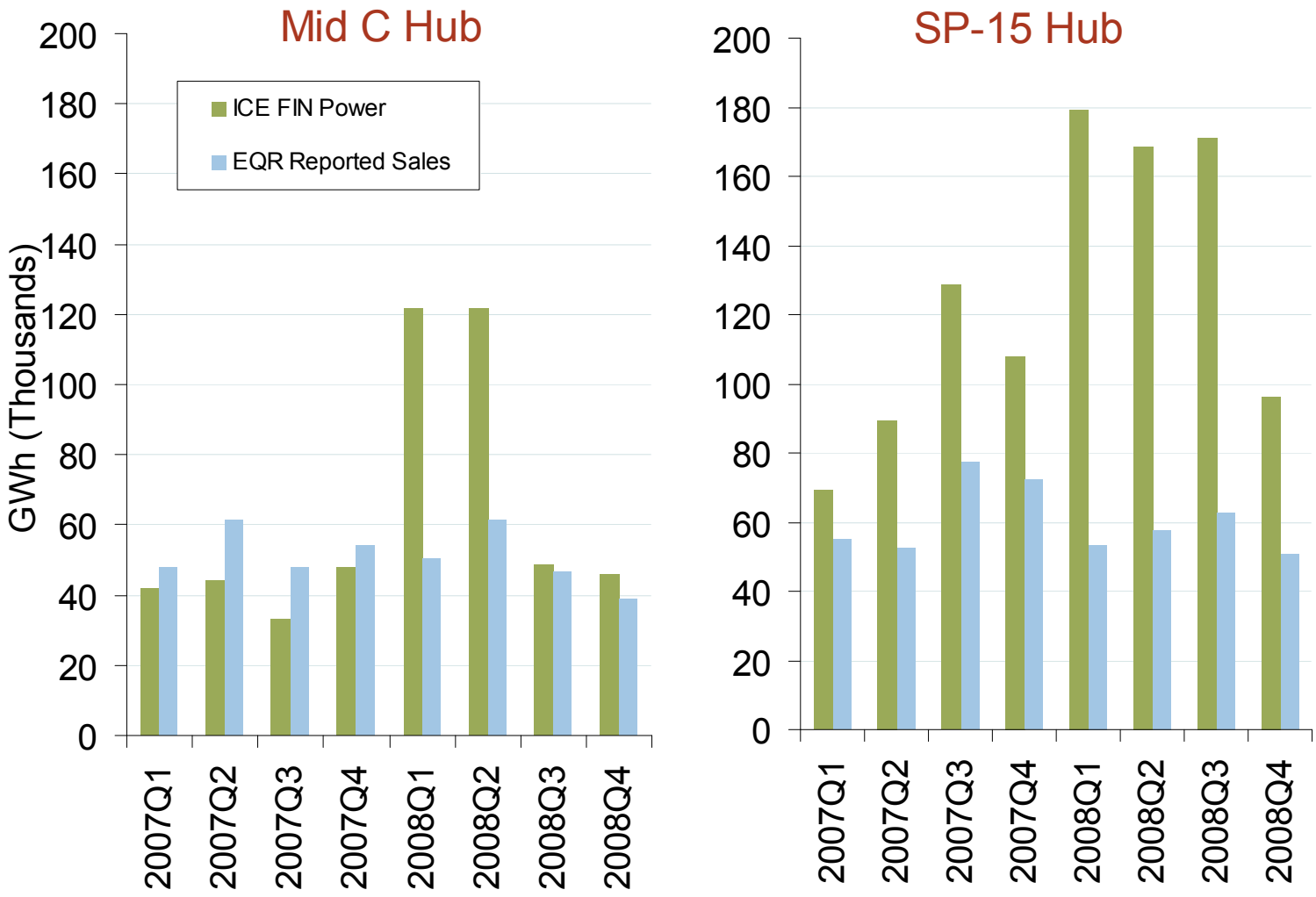
Source: Derived from *EQR and ICE* data.

Regional ICE and EQR Volumes



Source: Derived from *EQR and ICE* data.

Regional ICE and EQR Volumes



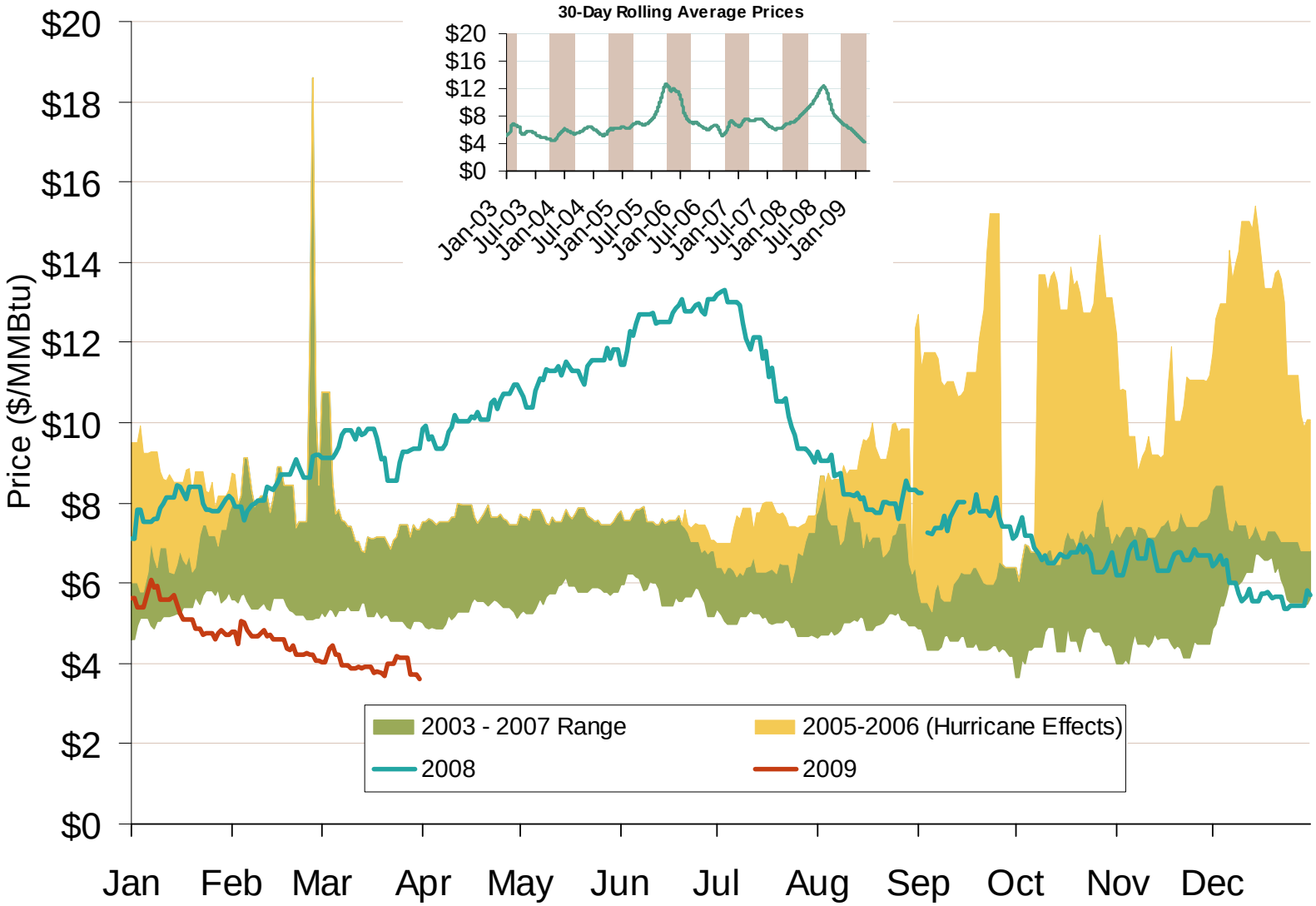
Source: Derived from *EQR and ICE* data.

Natural Gas and Fuel Markets

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
2008, 2009 and 2003-2007 Year Range



Source: Derived from *Platts* data.

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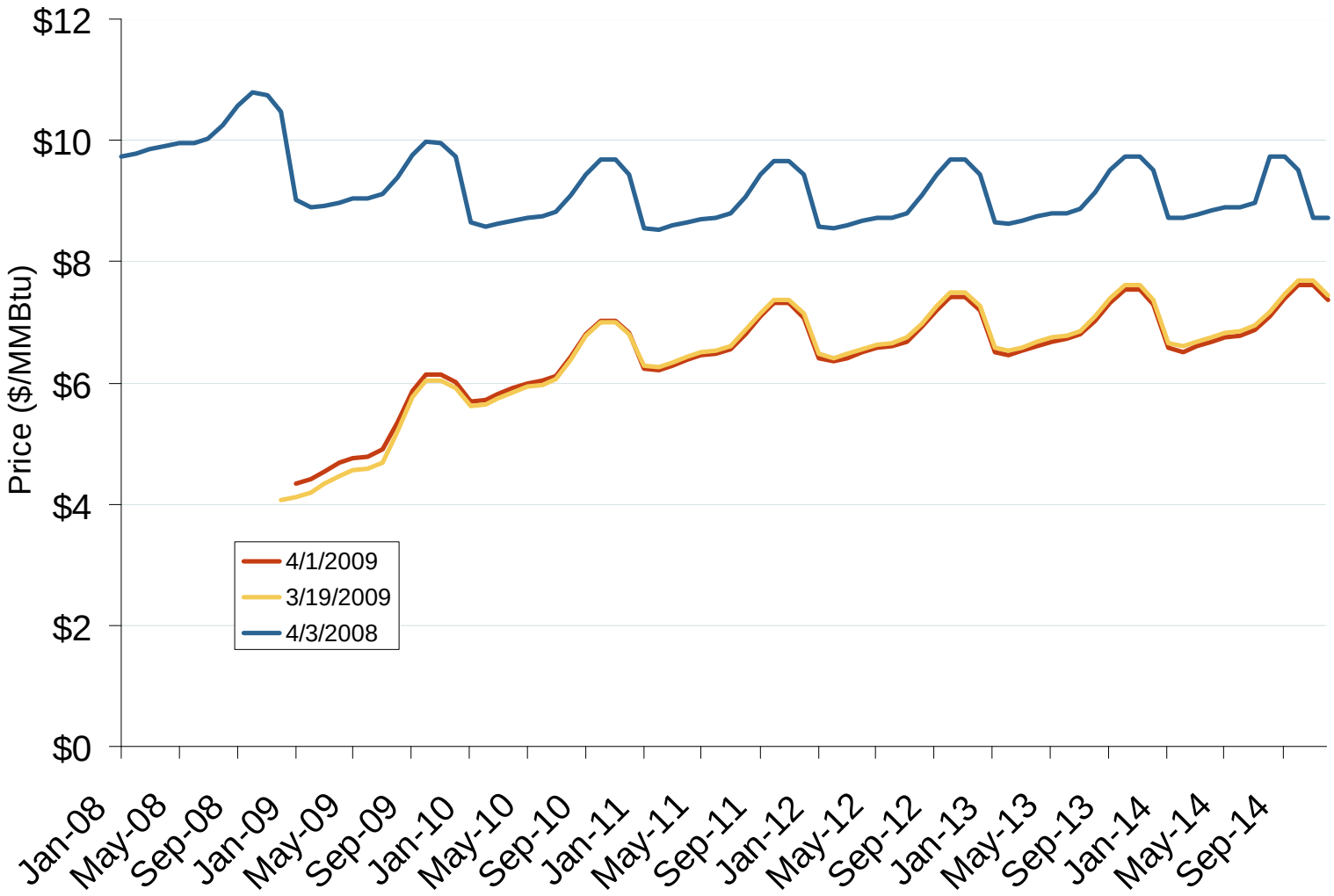
NYMEX Natural Gas Forward Price Curve



Source: Derived from *NYMEX* data.

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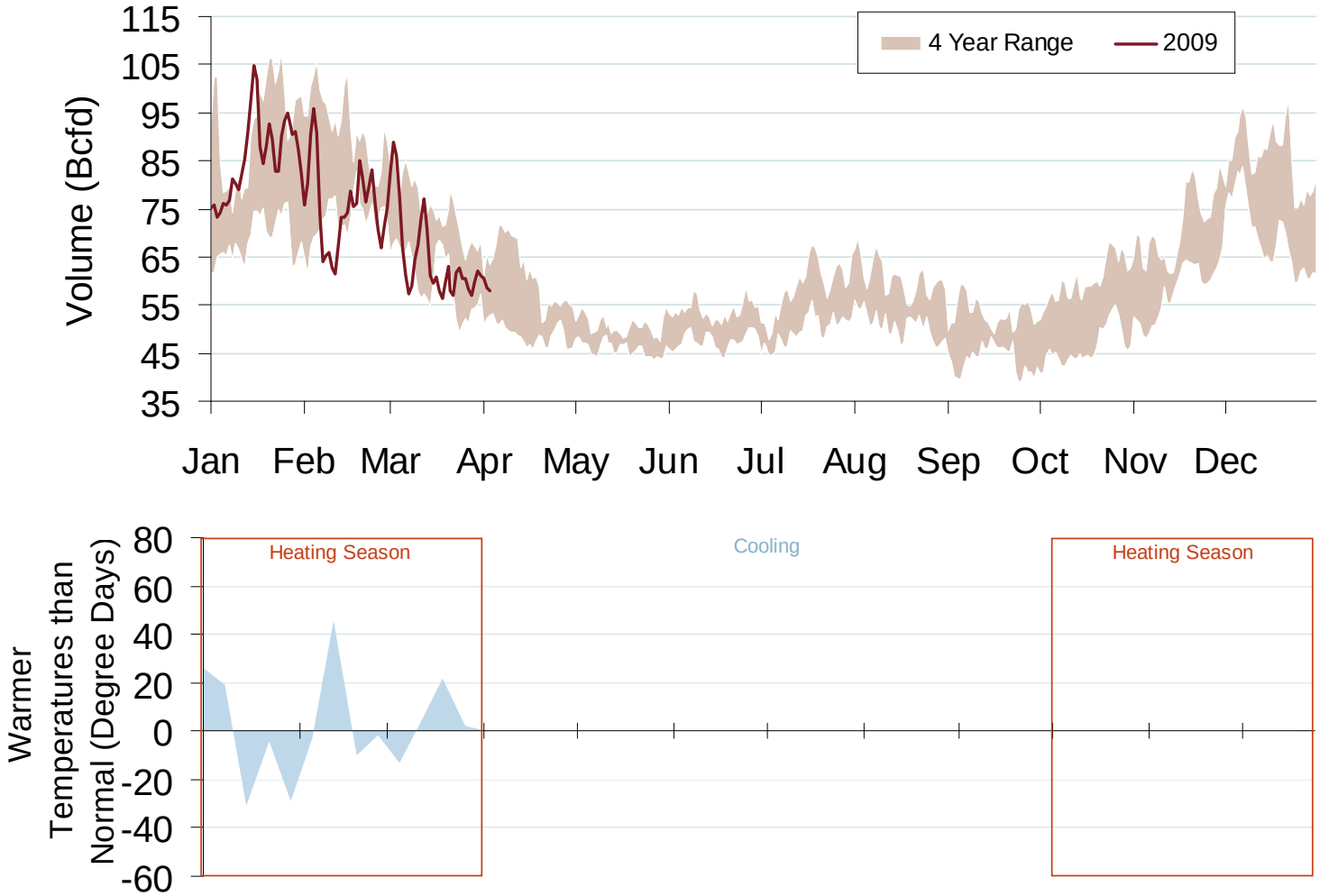
Total U.S. Natural Gas Demand (All Sectors) and Temperatures



Source: Derived from *Bentek Energy* data.

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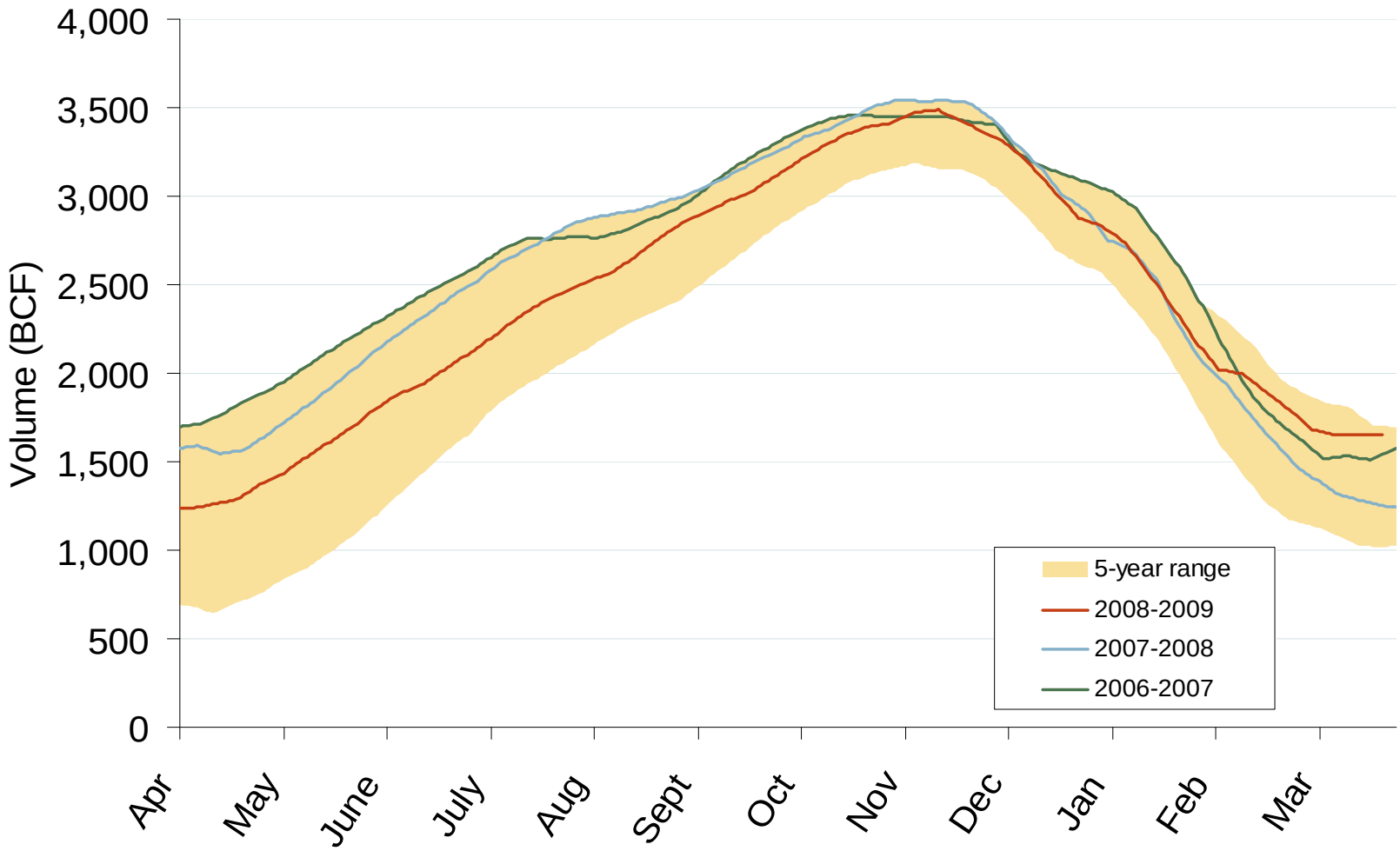
Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Total U.S. Working Gas in Storage



Source: Derived from *EIA* data.

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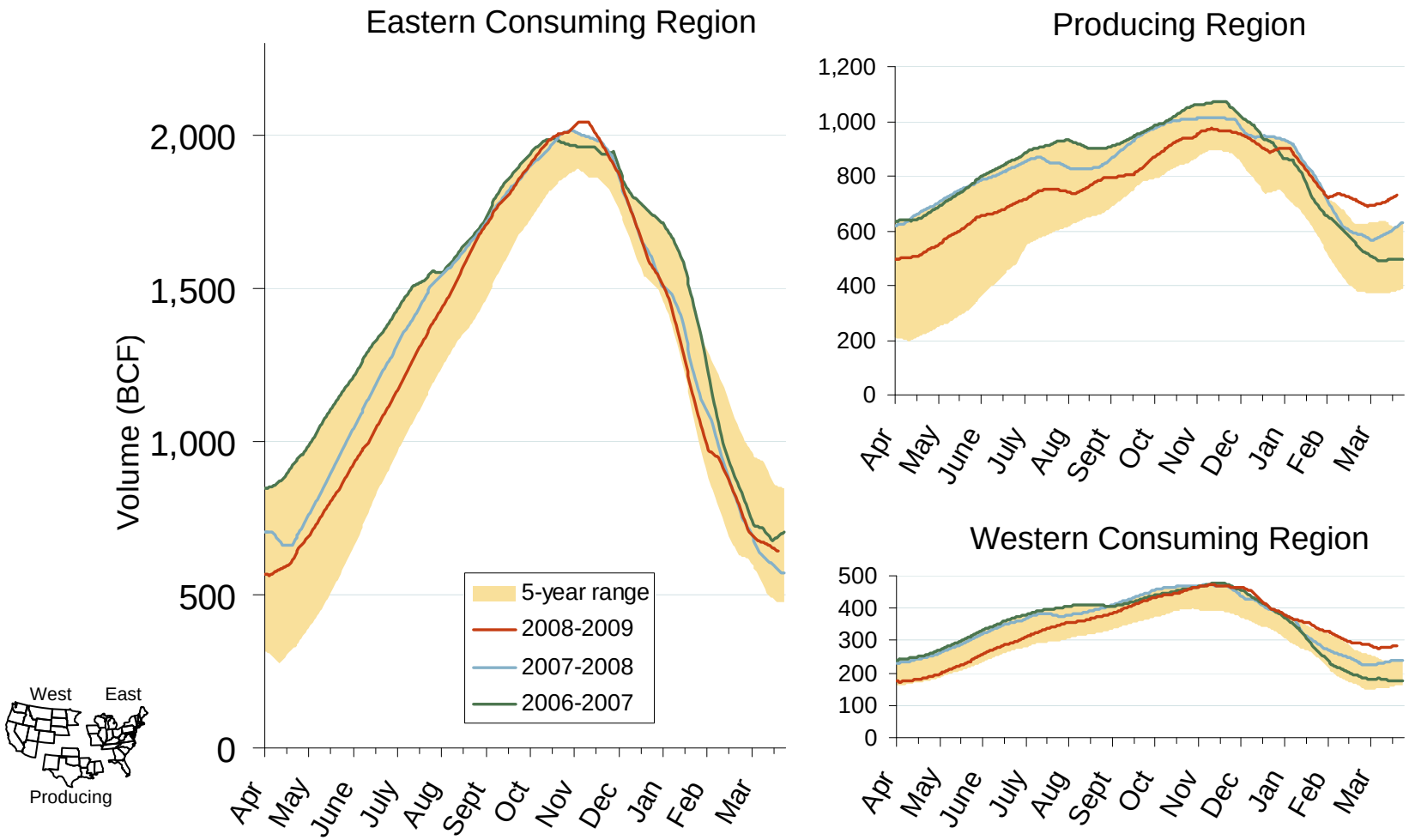
Regional Totals of Working Gas in Storage



Source: Derived from *EIA* data.

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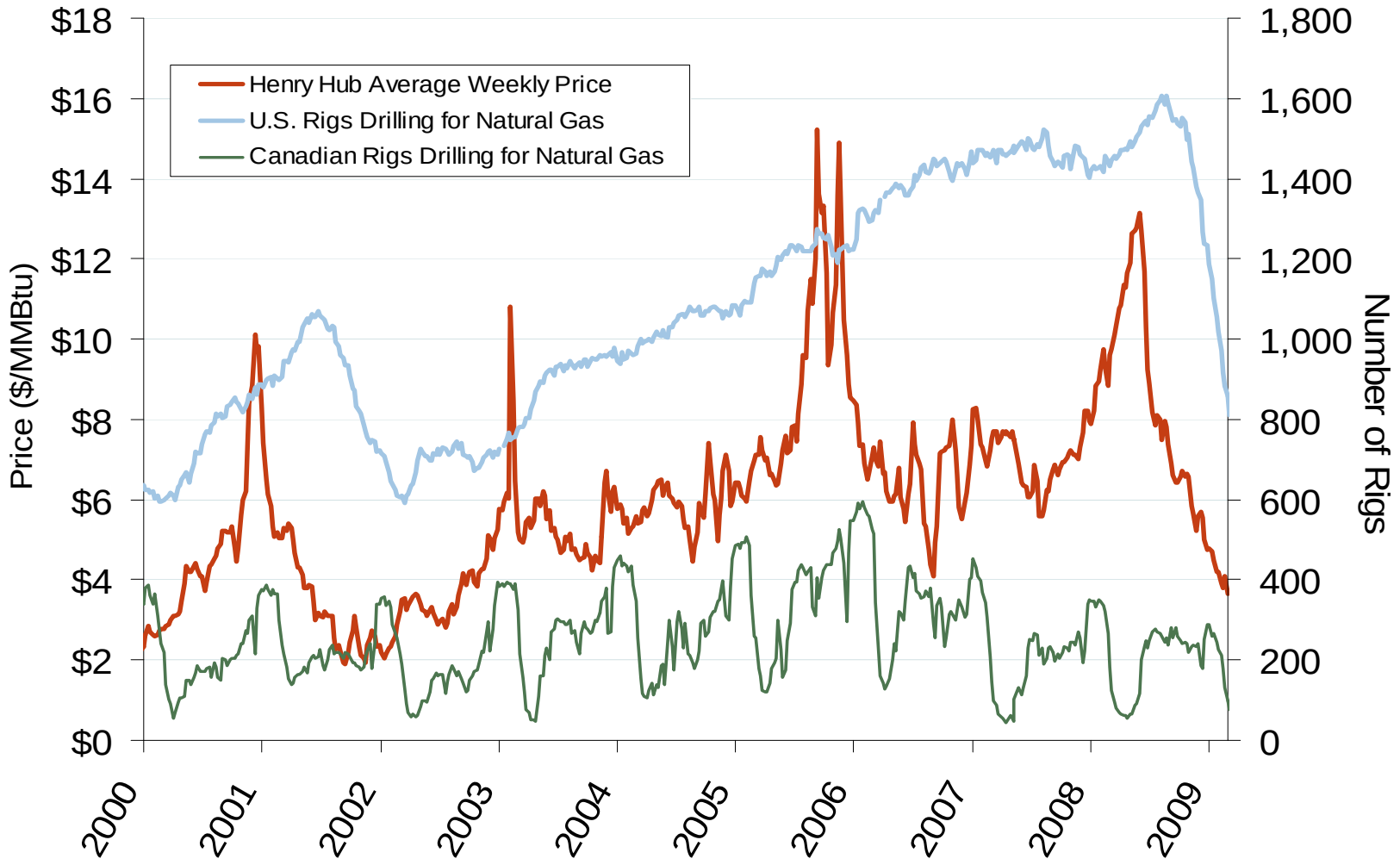
U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



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

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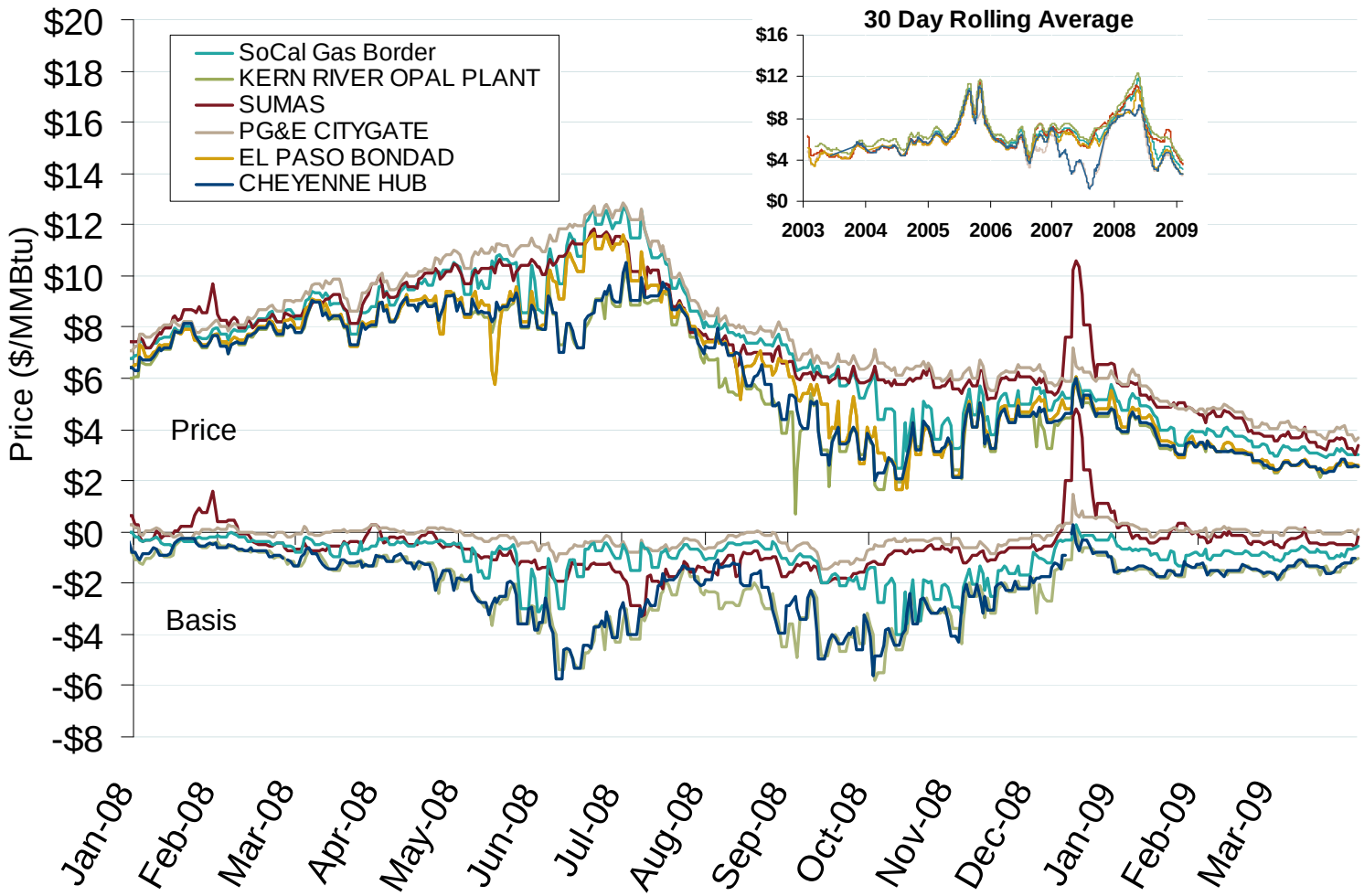
Western Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

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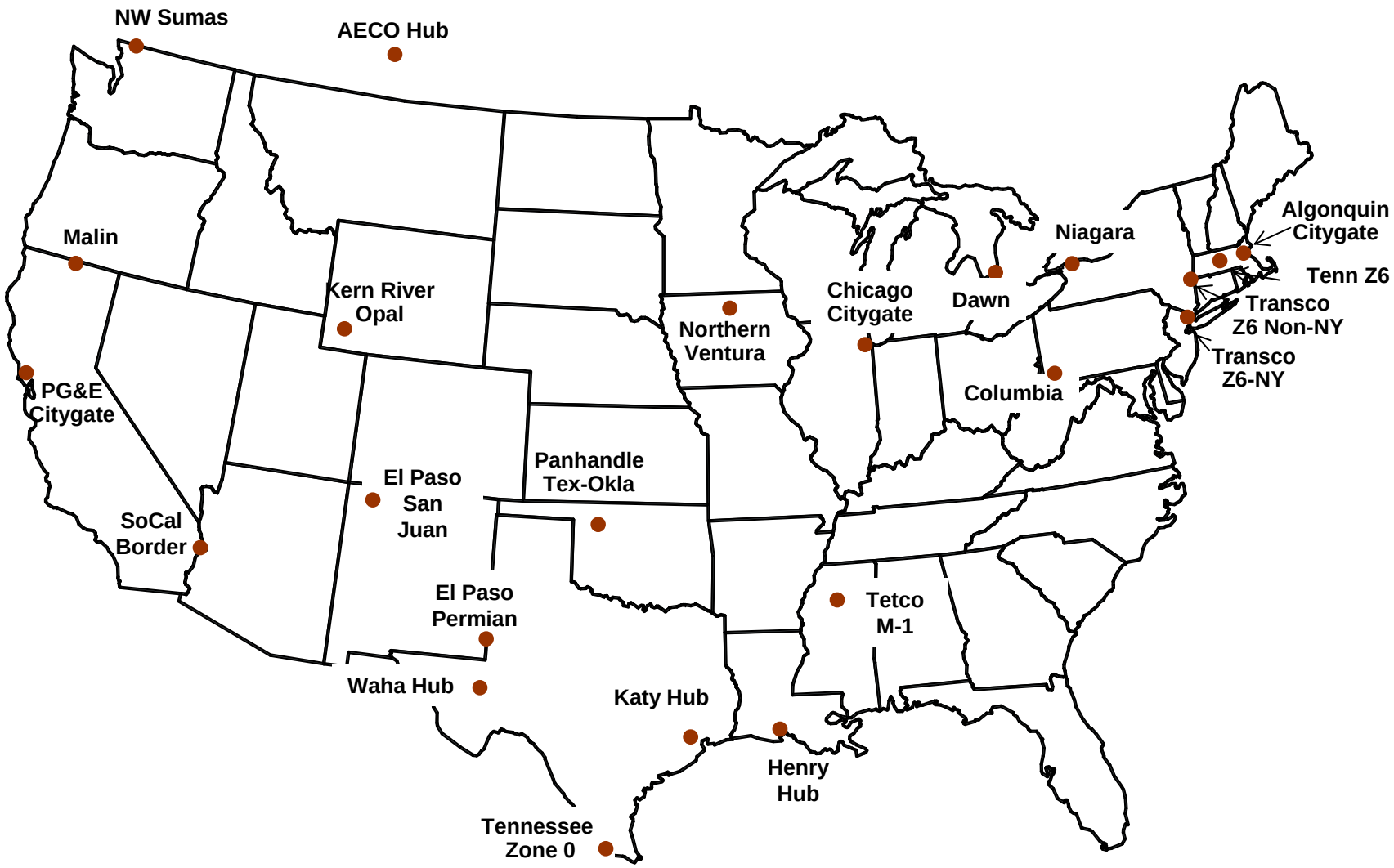
Gas Pricing Points



Note: Price Points reflect general locations.

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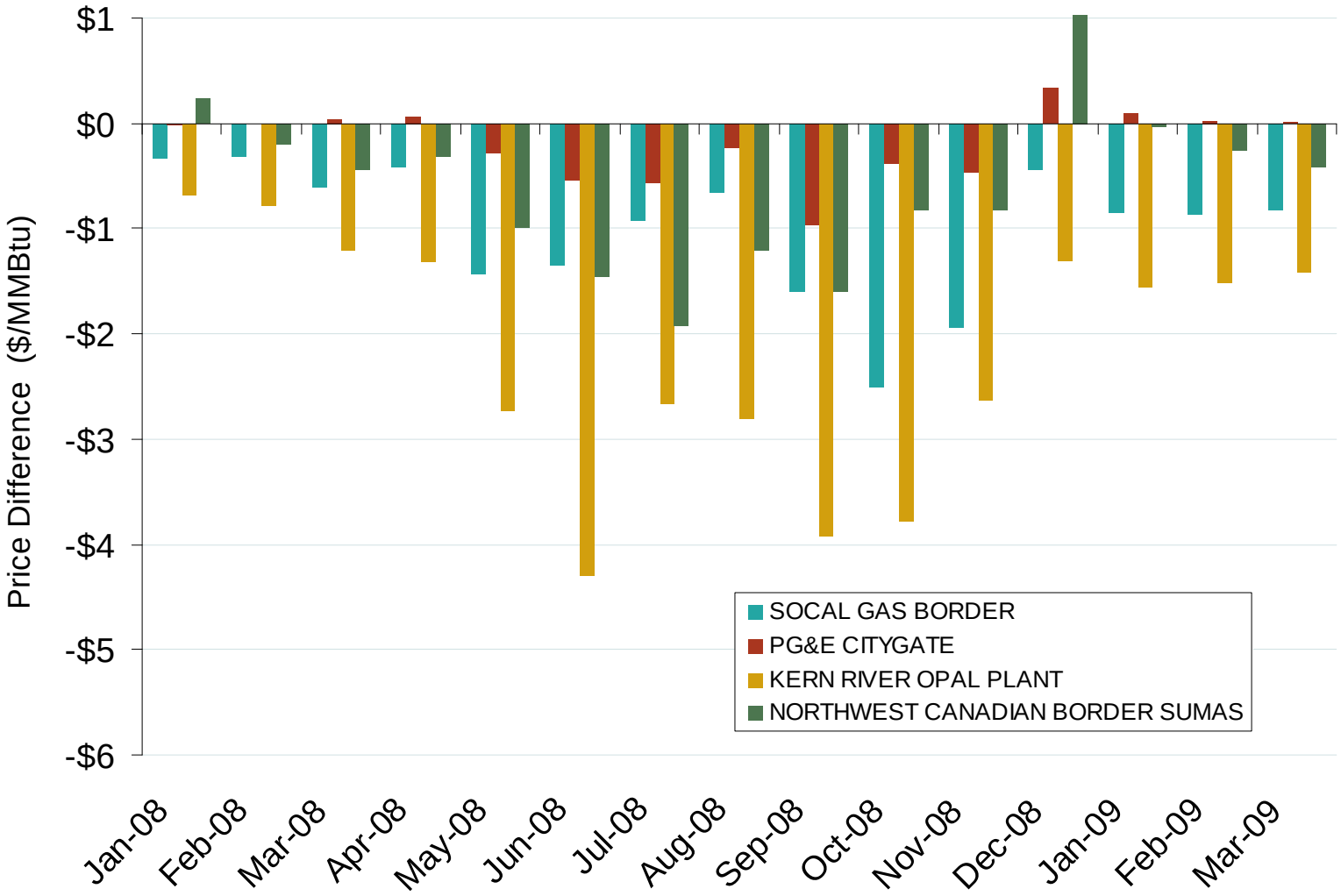
Western Monthly Average Basis Value to Henry Hub



Source: Derived from *Platts* data.

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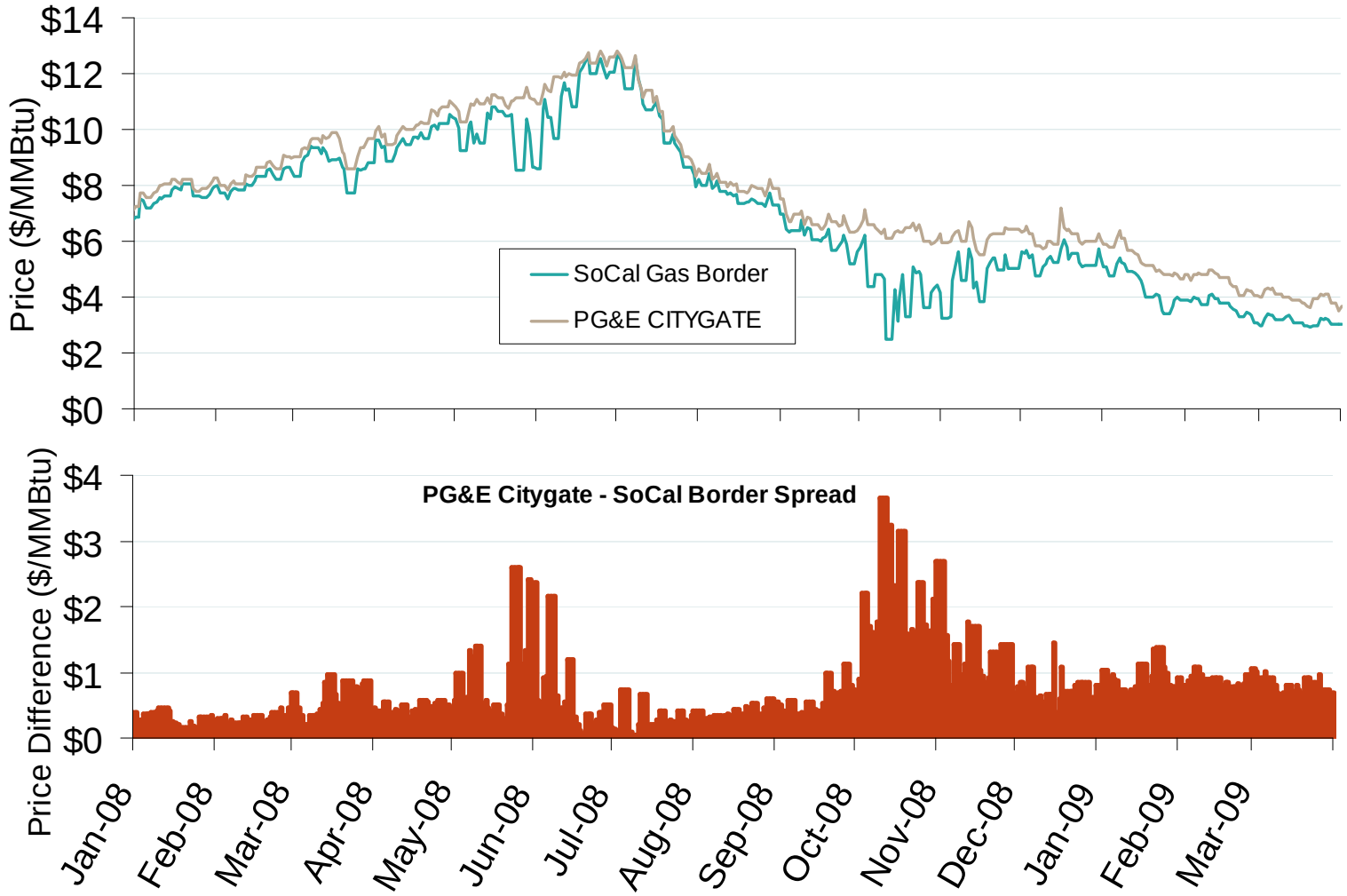
Difference in Northern and Southern California Daily Spot Prices



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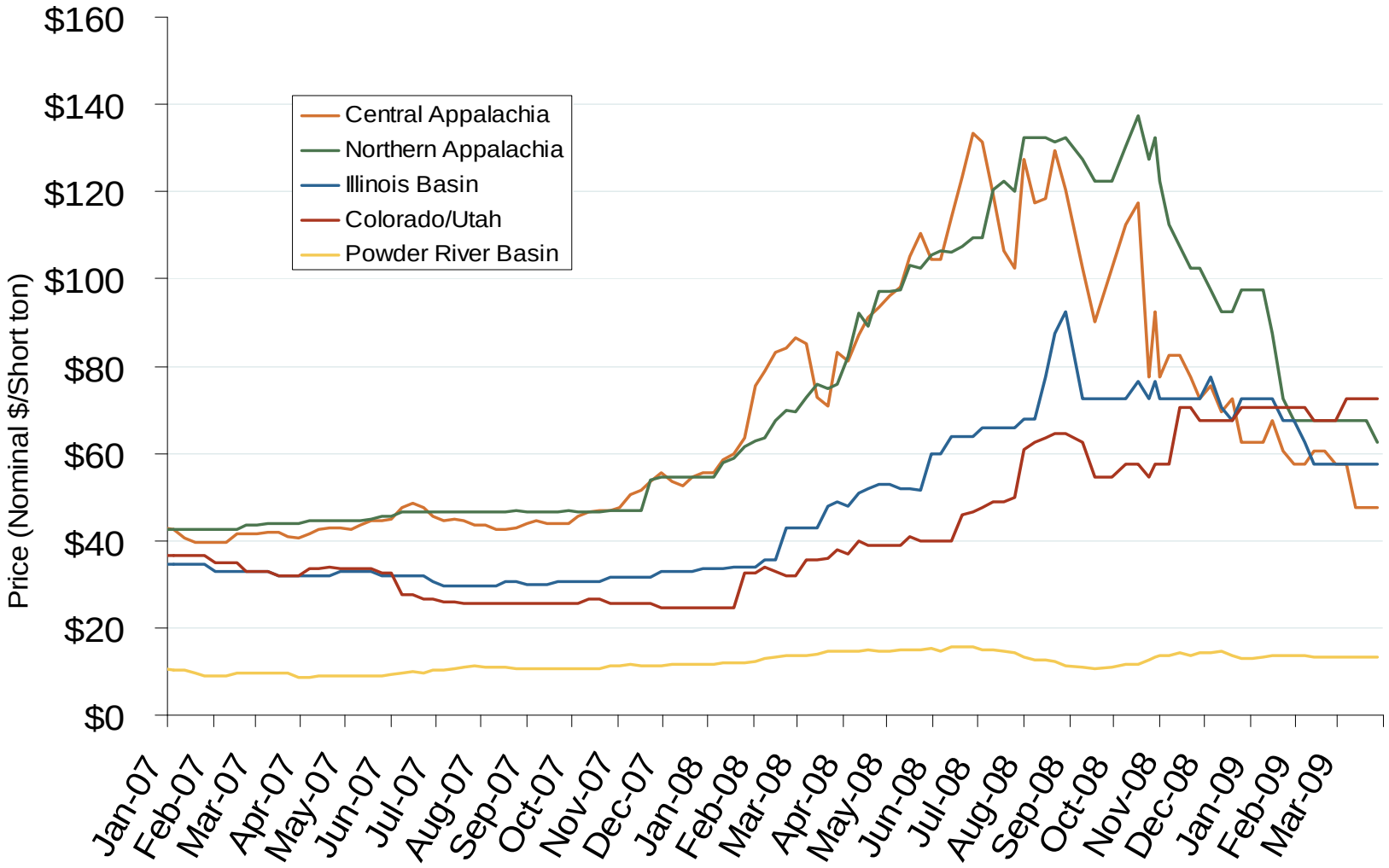
Source: Derived from *Platts* data.

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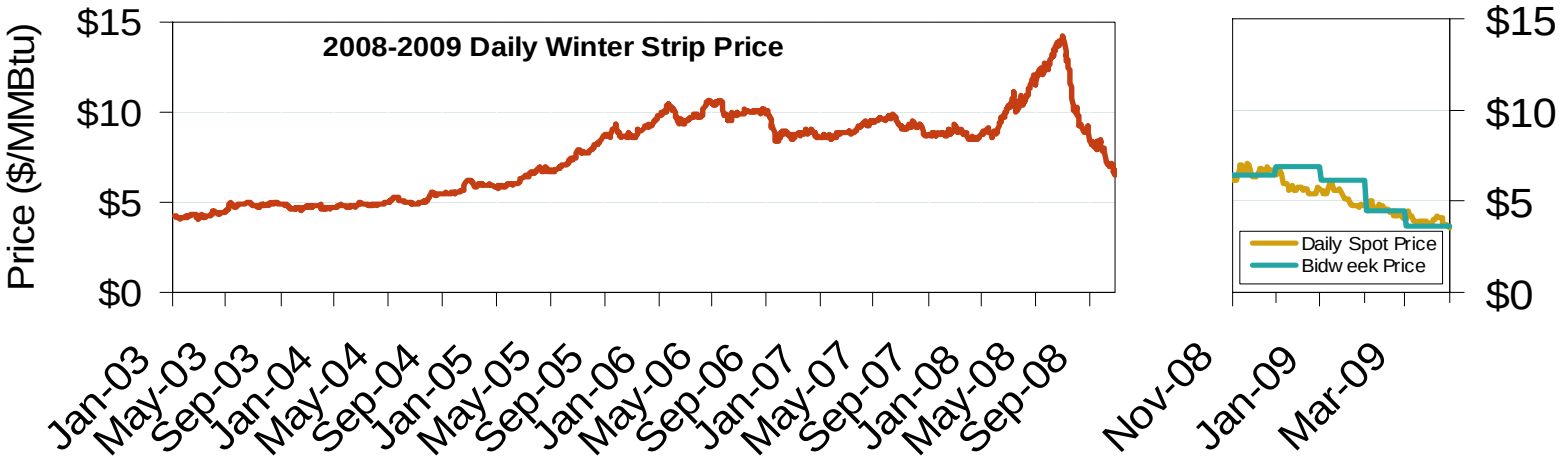
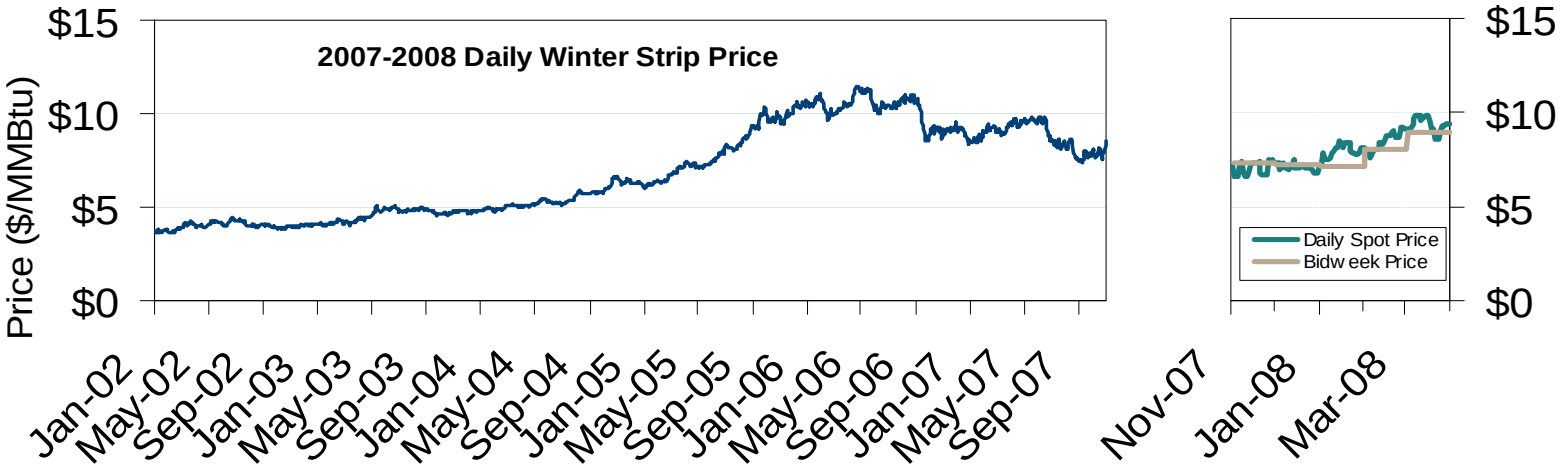
Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices





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

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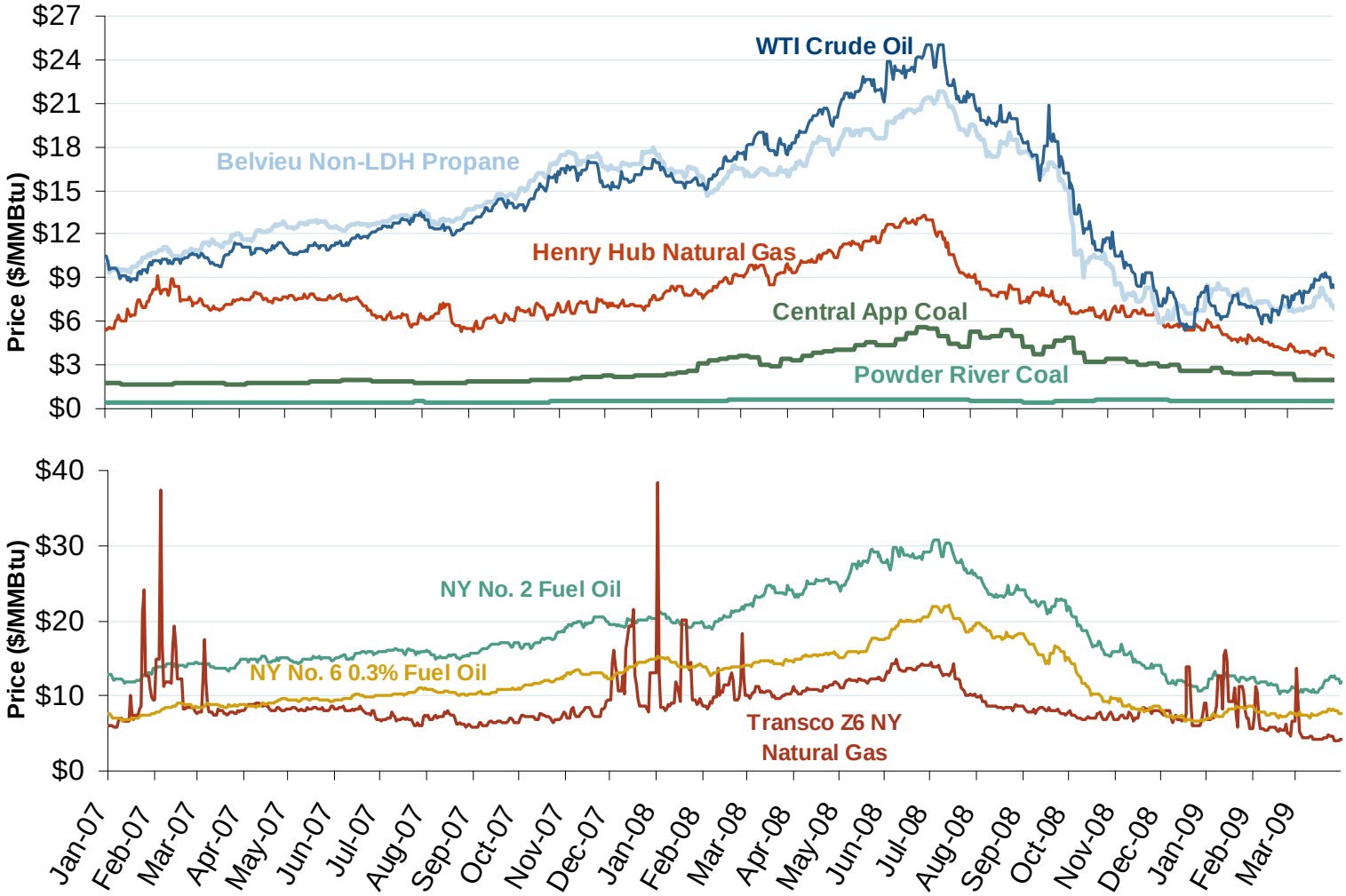
Oil, Coal, Natural Gas and Propane Daily Spot Prices



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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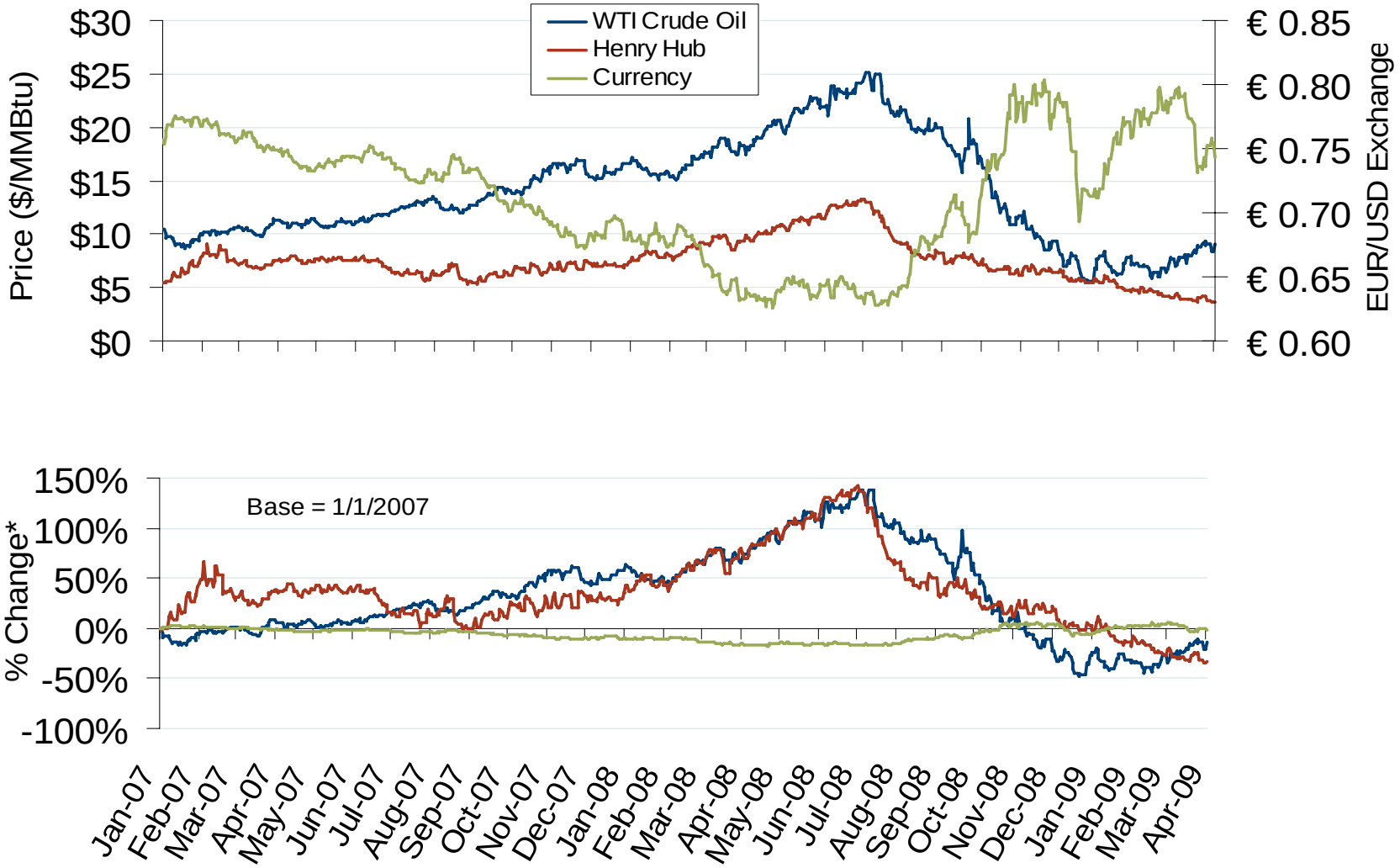
Oil, Natural Gas and Currency Spot Prices



Source: Derived from *Bloomberg* data.

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World LNG Estimated April 2009 Landed Prices

Source: *Waterborne Energy, Inc.* Data in $US/MMBtu.
April 2009 Western Snapshot Report

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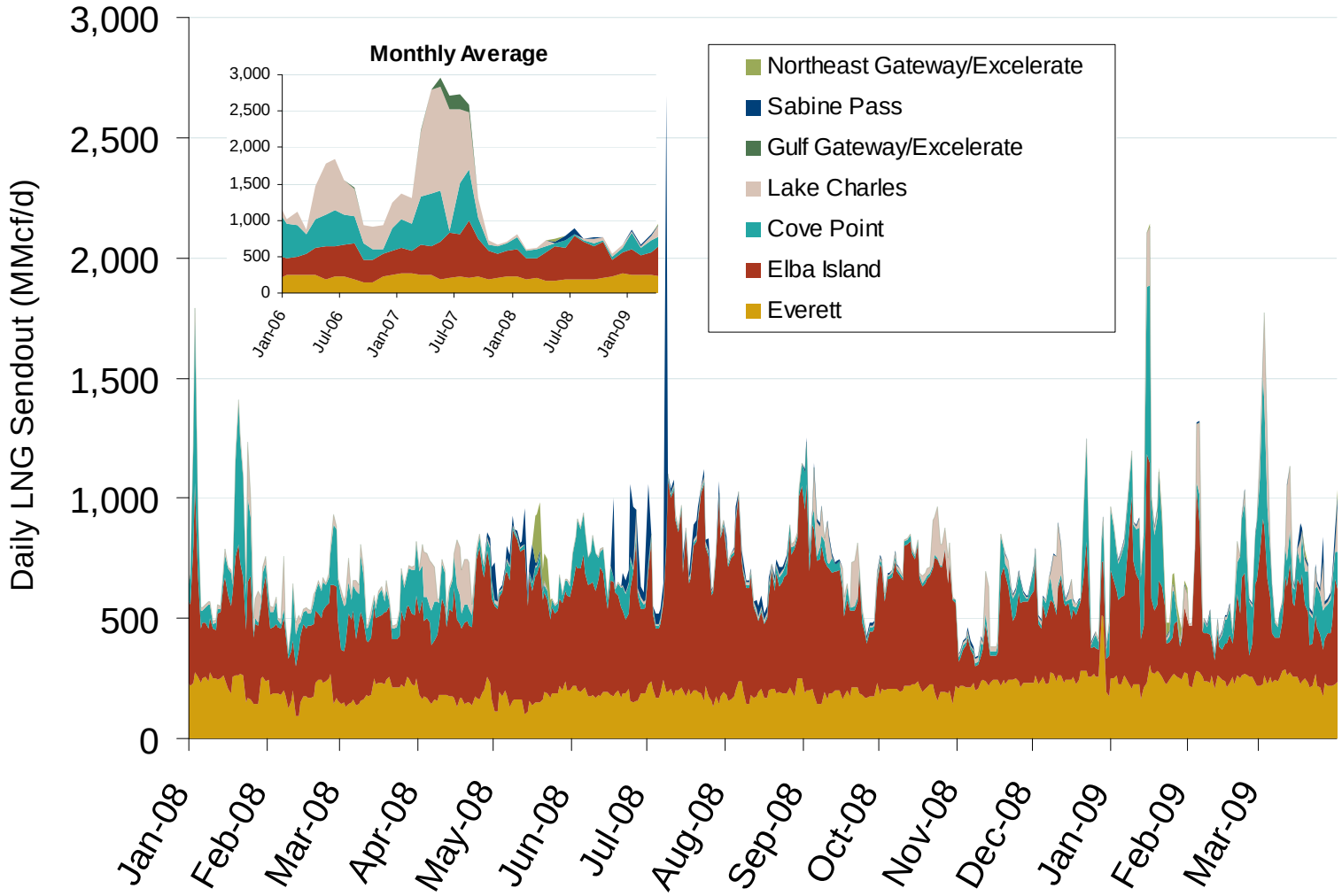
Daily Gas Sendout from Existing U.S. LNG Facilities



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.

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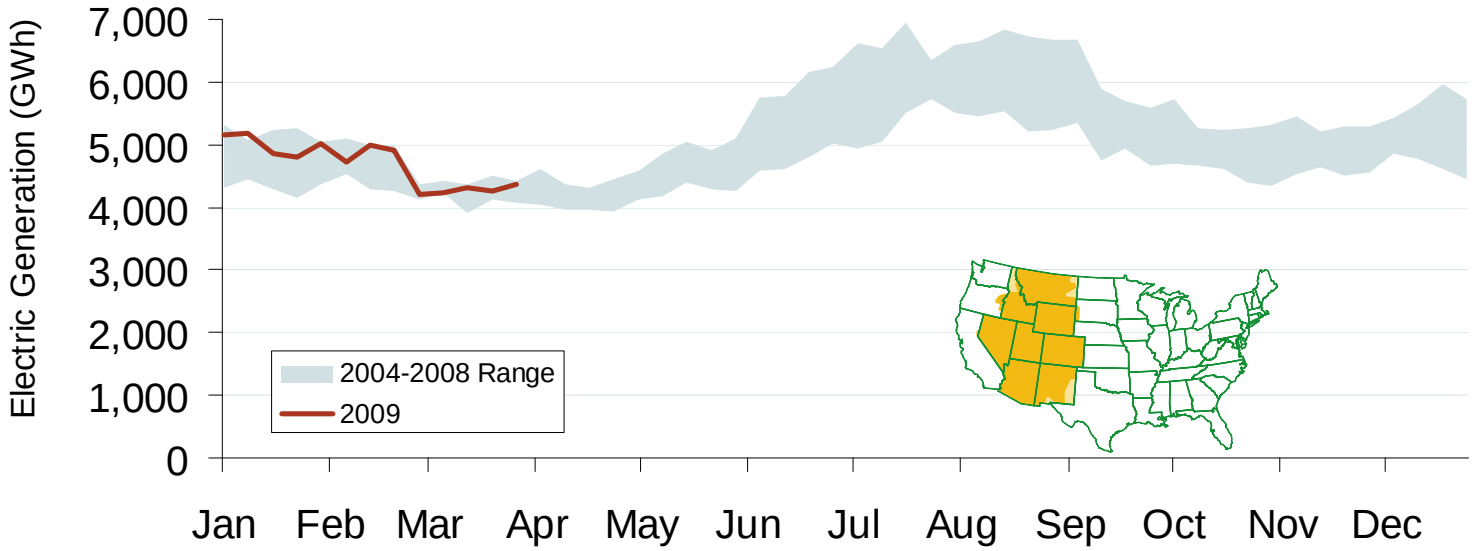
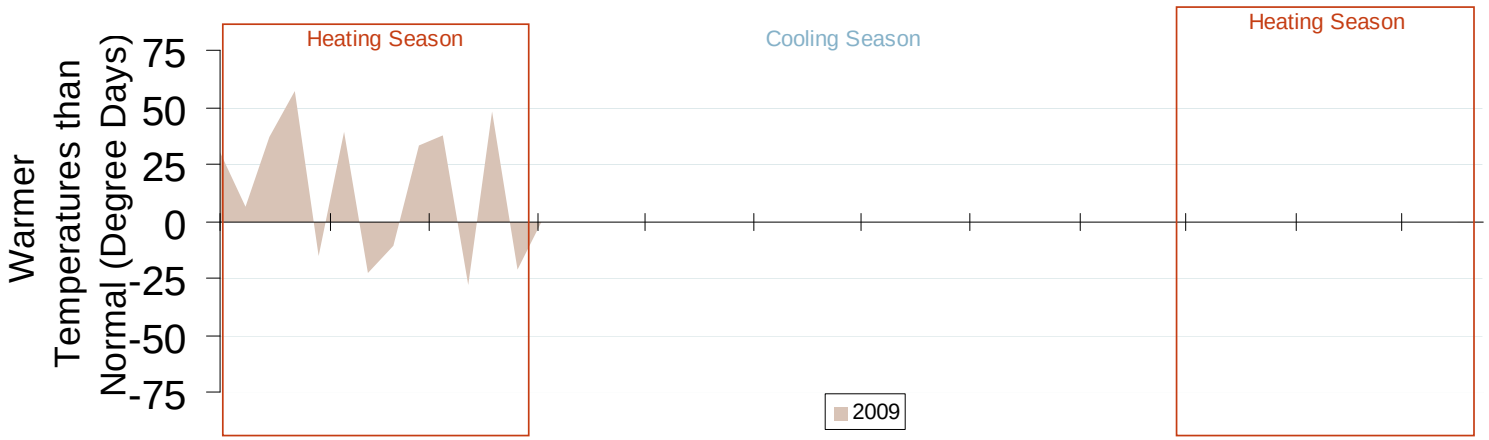
Electricity Markets

Weekly Electric Generation Output and Temperatures Rocky Mountains Region





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

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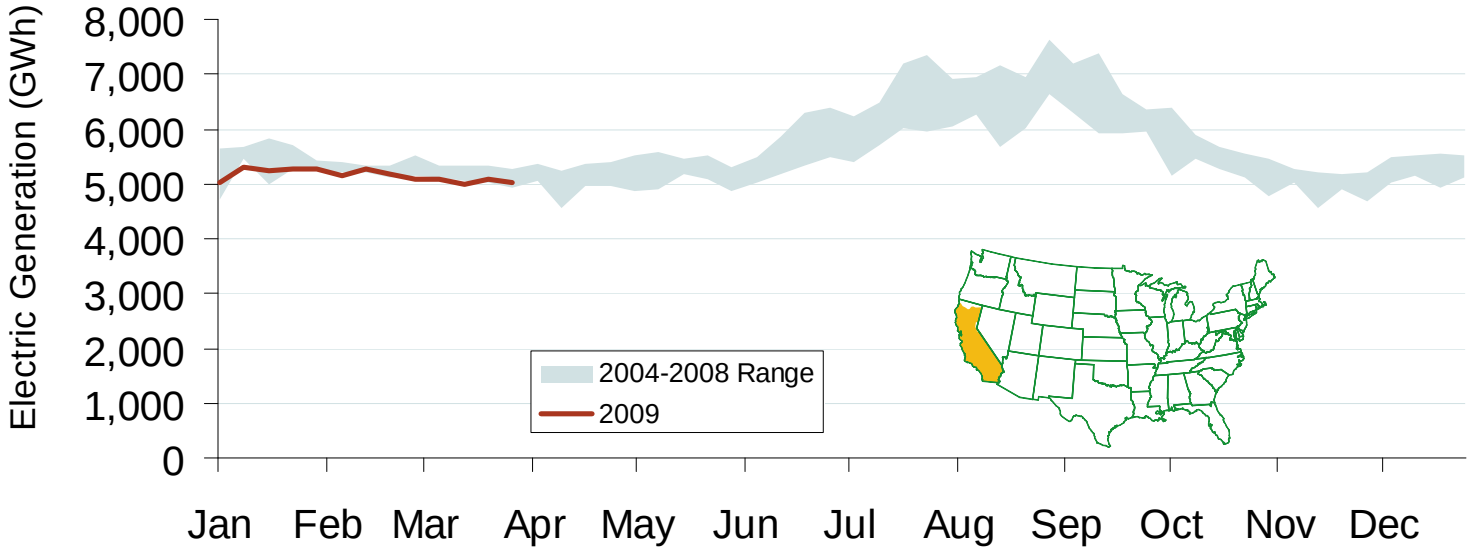
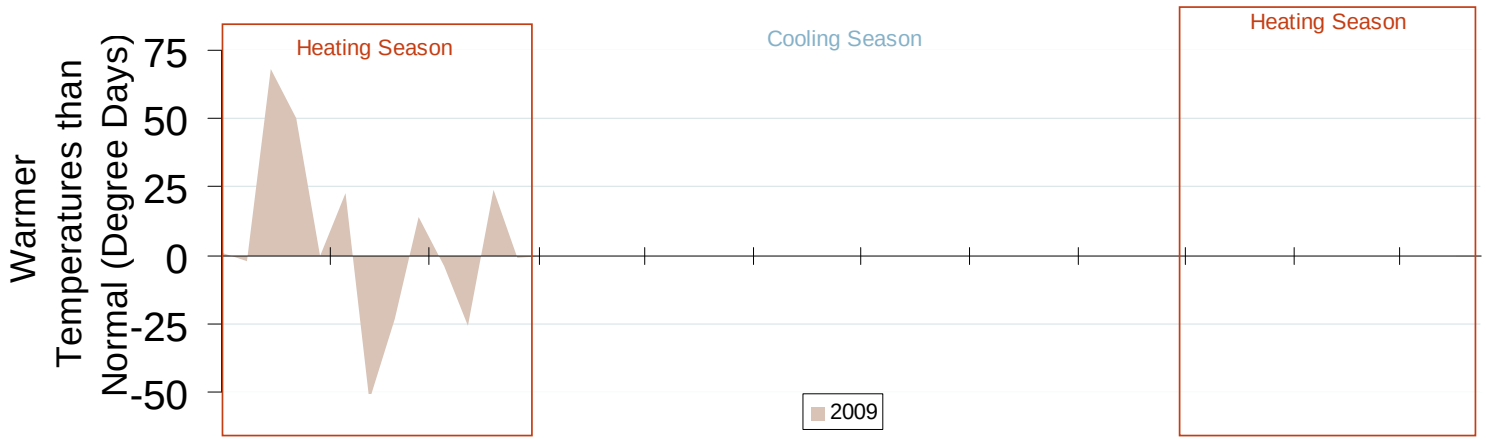
Weekly Electric Generation Output and Temperatures California





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

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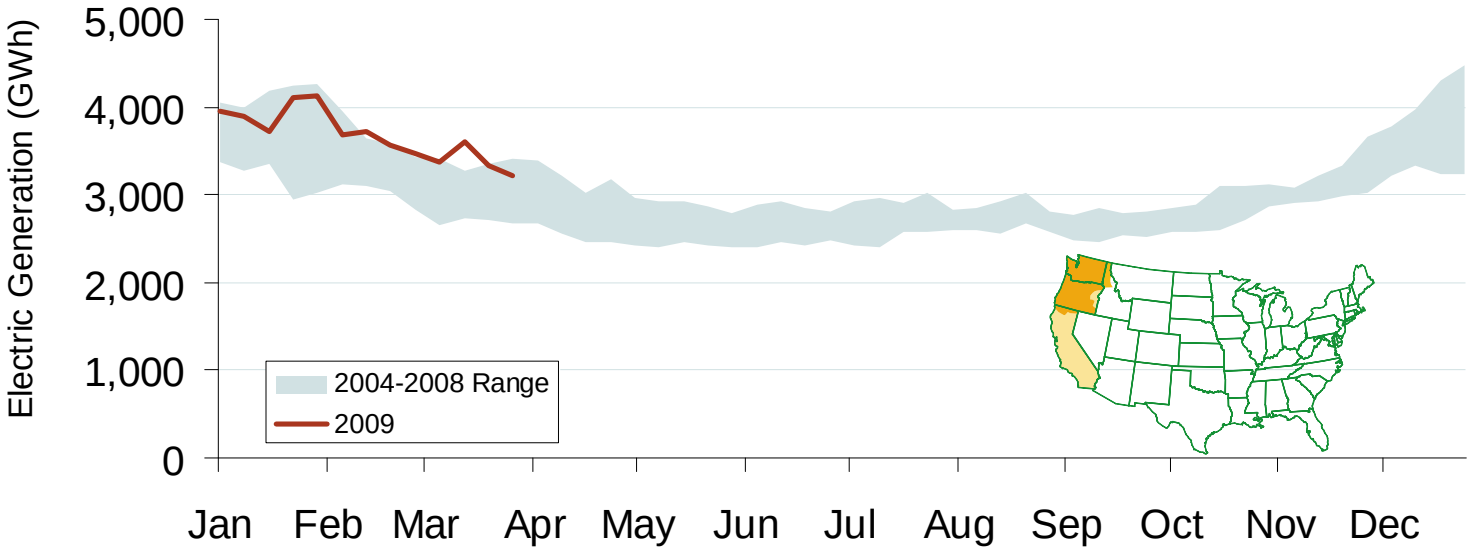
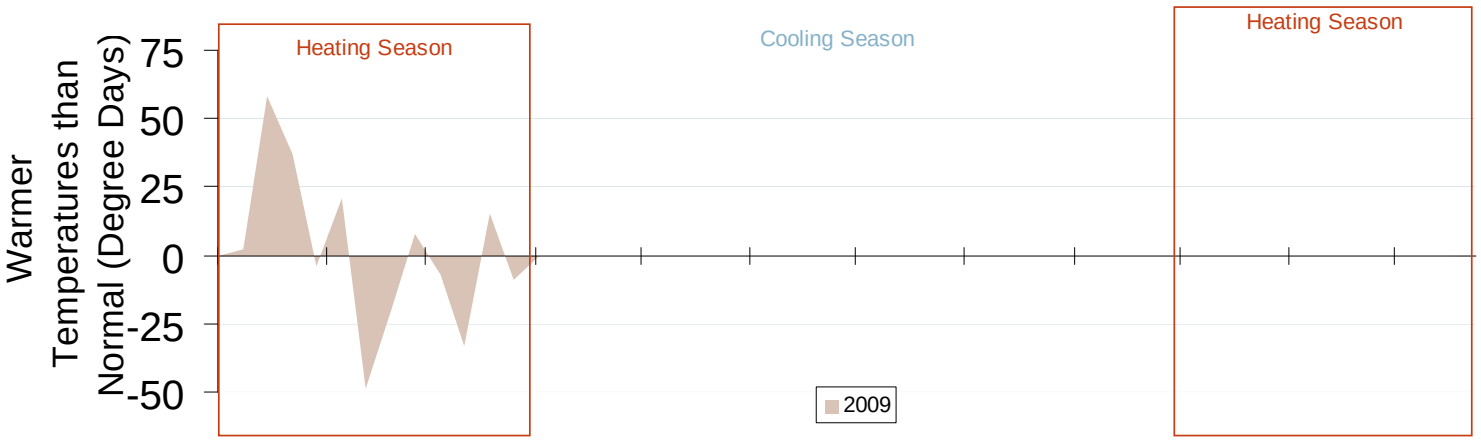
Weekly Electric Generation Output and Temperatures Pacific Northwest Region





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

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Pacific/Northwest Hydro and Snowpack Levels

	Hydro Generation		Snow Water Equivalent[3]		
	In-State Capacity (MW)[1]	Additional Capacity Created Downstream (MW)[2]	One Year Ago (% of average)	3/5/09 (% of average)	3/27/09 (% of average)
Washington	21,500	0	130%	74%	90%
Oregon	9,100	0	145%	83%	100%
California	10,400	0	98%	88%	88%
Idaho	2,700	19,700	104%	83%	88%
Montana	2,700	16,200	110%	87%	94%
British Columbia	10,000	16,200	105%	85%	89%

1 Net summer capacity in megawatts by state (EIA).

2 Approximate electric capacity created by water flow through the downstream states (EIA and BPA). The capacity estimates reflect the water flow pattern of the series of hydro facilities on the Snake and Columbia Rivers.

3 Snow Water Equivalent, in percent of the historical average for the same date, is the ratio of current snow water daily data (collected by the Natural Resources Conservation Services' Snowtel Telemetry sites) compared to the average snow water for the same day between 1961-1990. Total Hydro Capacity figures by state do not tie precisely to Snow Water Equivalent data due to such factors as snow basin terrain and complex distribution of run-off to neighboring state hydroelectric dams or shared facilities (e.g., Columbia River hydroelectric dams on the border of Washington and Oregon) (Bloomberg, California Dept. of Water Resource and Government of British Columbia Ministry of Environment).

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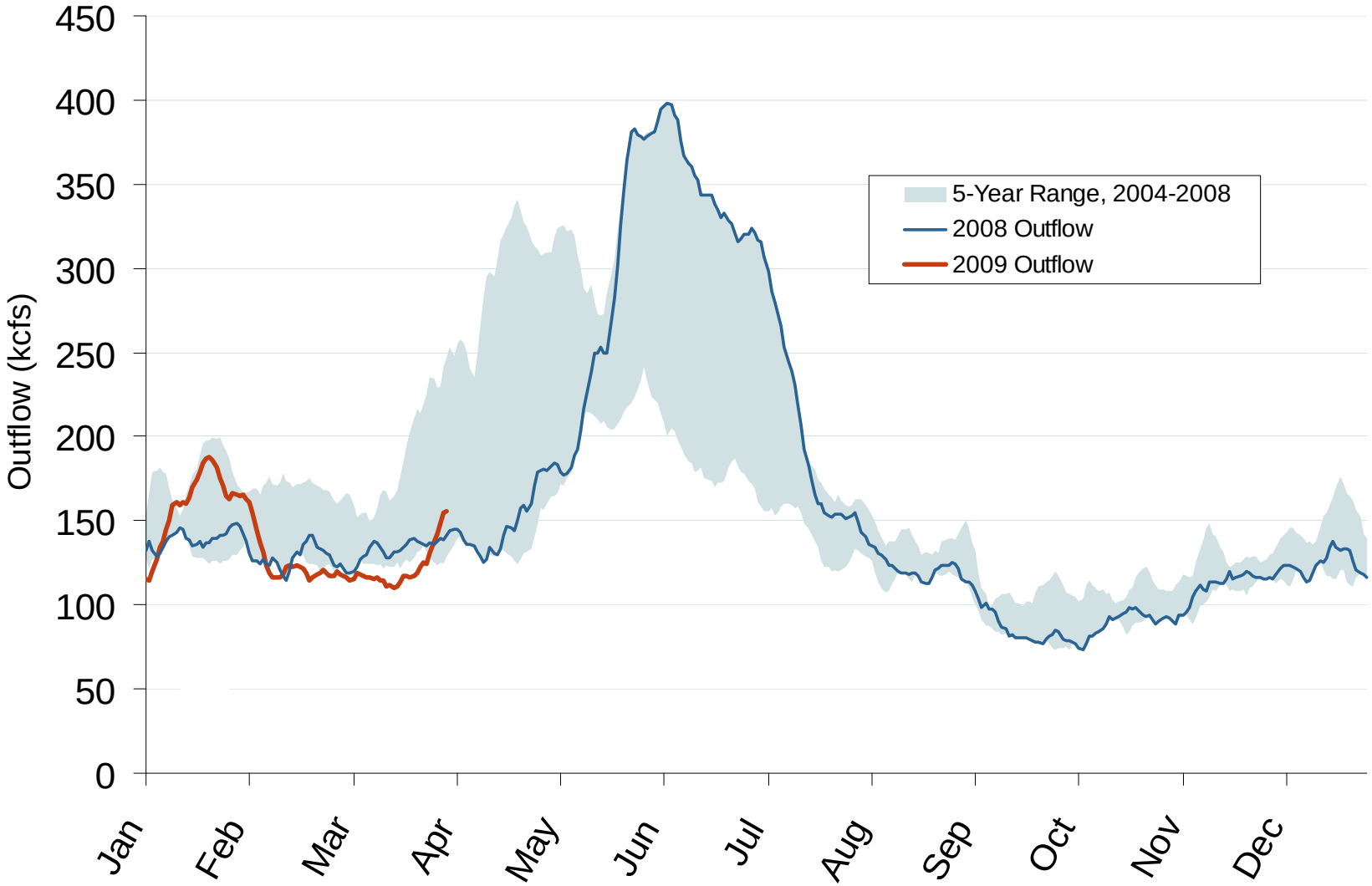
Stream Flow at The Dalles Dam



Source: Derived from *USACE* data.

Trend lines are 7-day moving averages.

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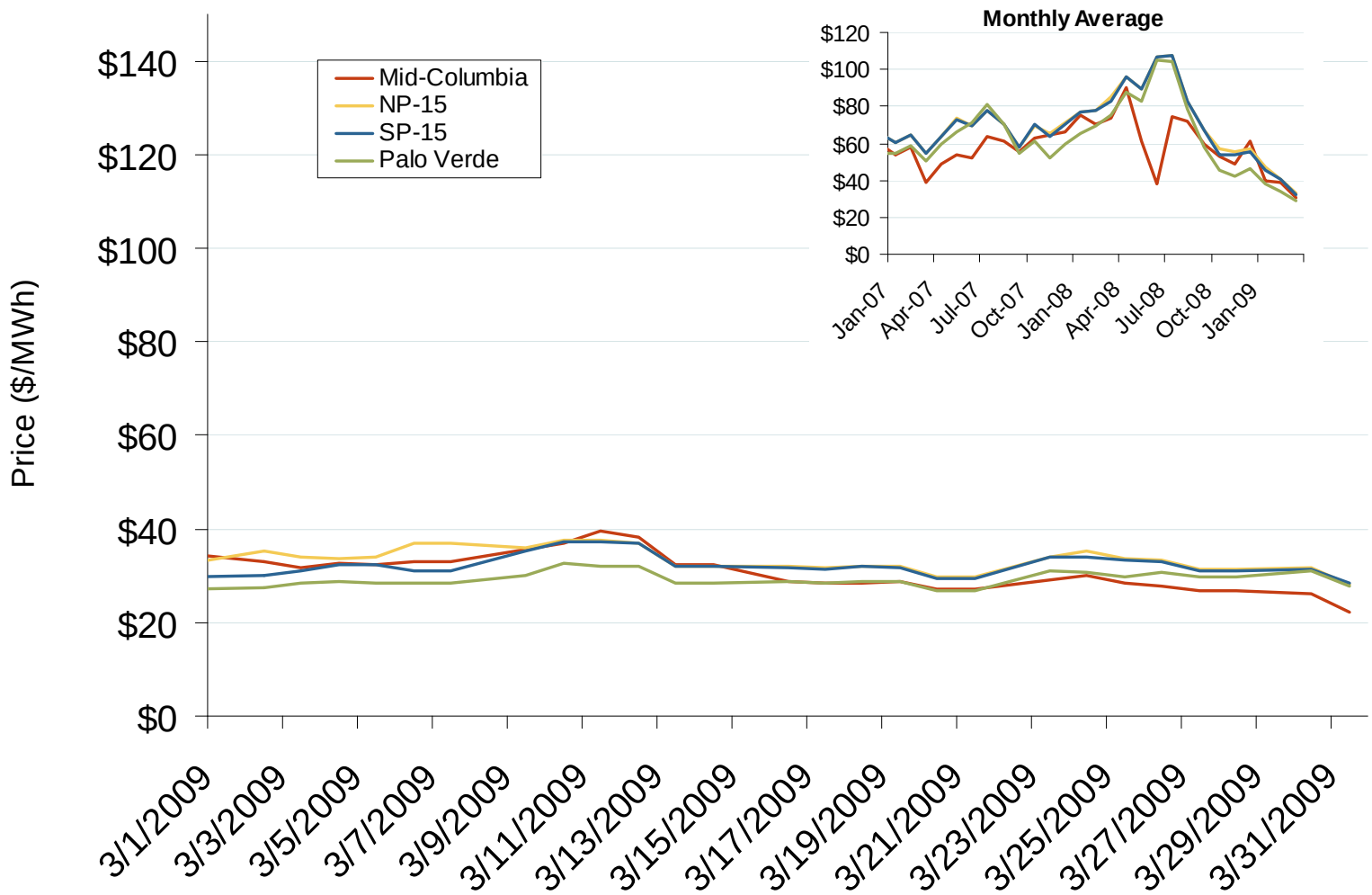
California Electric Market: Last Month's Western Bilateral Prices

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

Western Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

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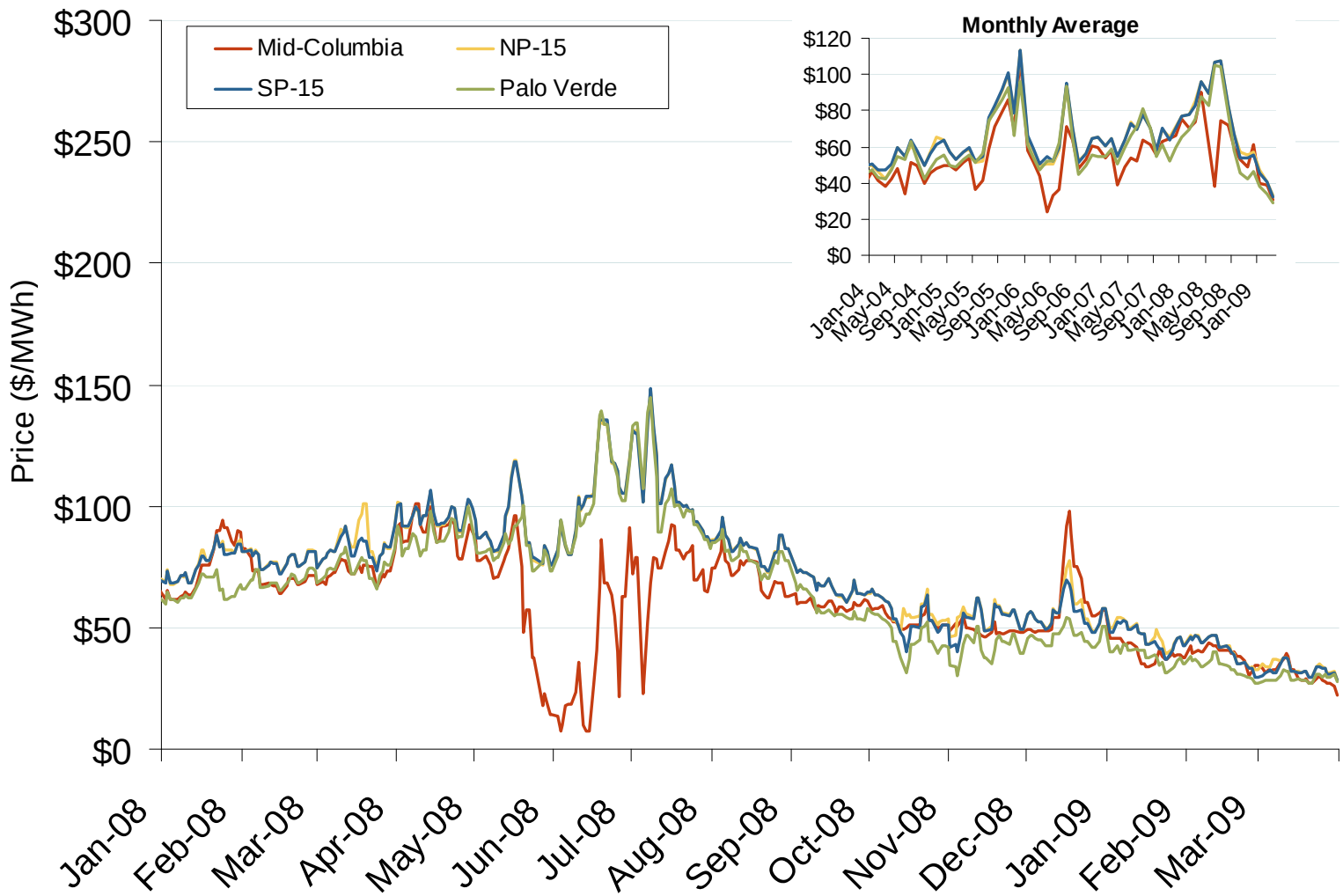
Western Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

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Electric Pricing Points

Note: Pricing points reflect general locations. Actual trading regions may not be point specific.

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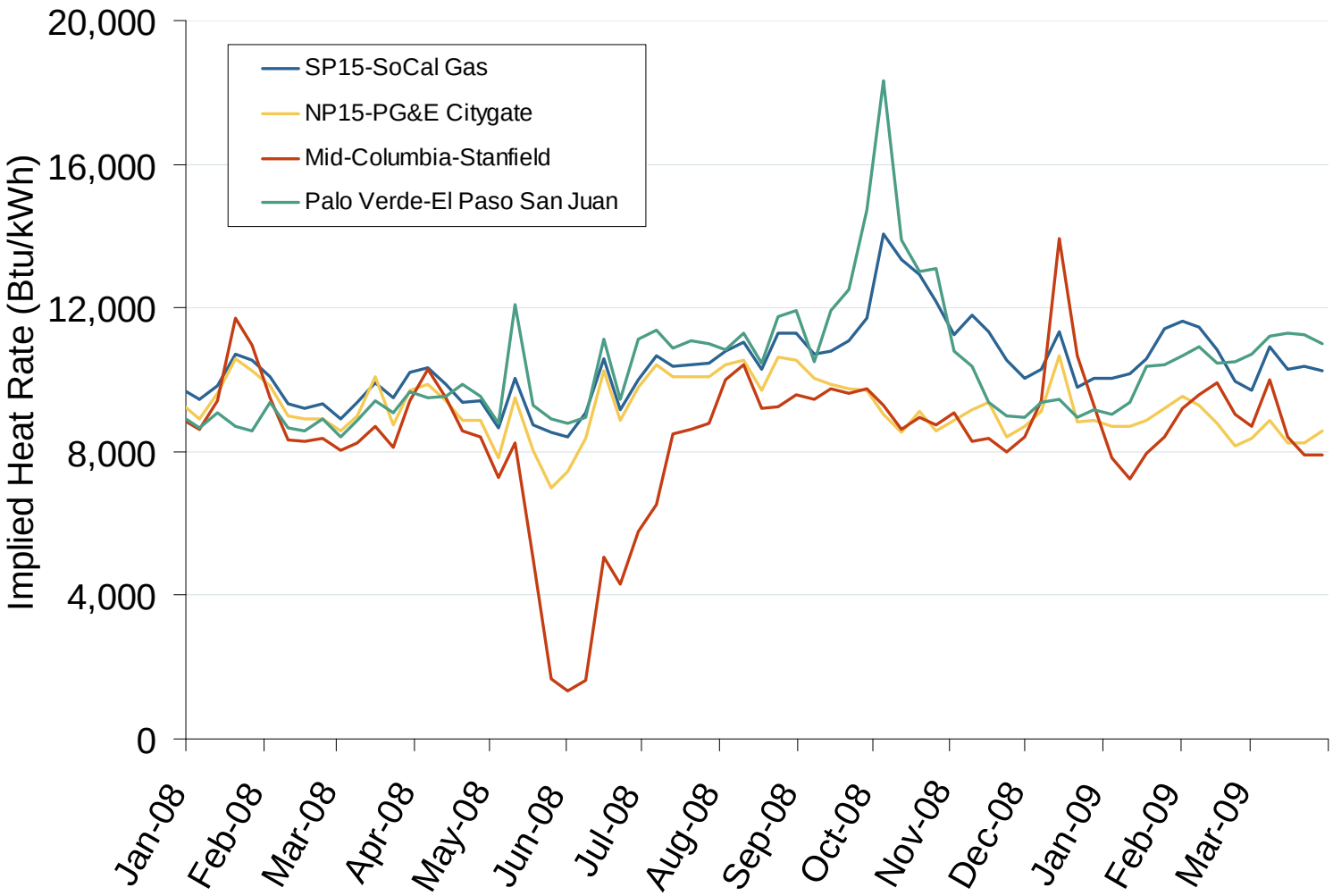
Implied Heat Rates at Western Trading Points Weekly Averages



Source: Derived from *Platts* data

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18 States have Energy Efficiency Resource Standards

NE: Energy Plan stresses multi-sector EE improvements

KS: Advocates voluntary utility programs, not mandate

OK: PSC approved quick-start DR programs, including EE

MN: 1.5% annual savings based on prior-3 years average, to 2015

IA: utilities to submit EE goals to achieve 1.5% annual savings; awaiting approval

MI: 1% annual savings from prior year's sales to 2012

WI: EE in RPS

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

OH: reduce peak 8% by 2018; 22% energy savings by '25, starting 2009

KY: proposed RPS-EE to offset 18% of projected 2025 demand

ME: 10% EE by 2017 – new since 2005; DR & EE as SOS priority resources

VT: 2009 – 2011 goals of 2% annual savings; administered by Efficiency VT

MA: 25% of electric load from DSR, EE by 2020: capacity and energy

NY: 15% electric use reduction by 2015 from levels projected in 2008

CT: 1.5% annual savings 2009-19, from 2007, using all cost-effective EE

RI: reduce 10% of 2006 sales by 2022

NJ: BPU proceeding on EERS to reduce consumption, peak demand

DE: creating a Sustainable Energy Utility; EE, RE, DG, DR as SOS priorities

PA: reduce energy consumption 3% and peak 4.5% by 2013 as percent of 2009-10 sales

MD: reduce per cap electricity use & peak 15% by 2015 from 2007

VA: reduce 10% of 2006 sales by 2022

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

TVA: reduce peak demand 1,400 MW by 2012 with EE, DR *

FL: PSC to adopt new goals to reduce electric consumption, peak demand

WA: must pursue all cost-effective conservation

OR: IOU 2008 goals 34 MW; administered by Energy Trust OR

CA: 1% annual energy savings 2004 – 2013 ~23,183 GWh, 4,885 peak MW by 2013

ID: Energy Plan sets conservation, DR, EE as priority resources

MT: Governor's initiative – 20% state agencies energy savings by 2010

NV: EE up to 25% of RPS by 2015

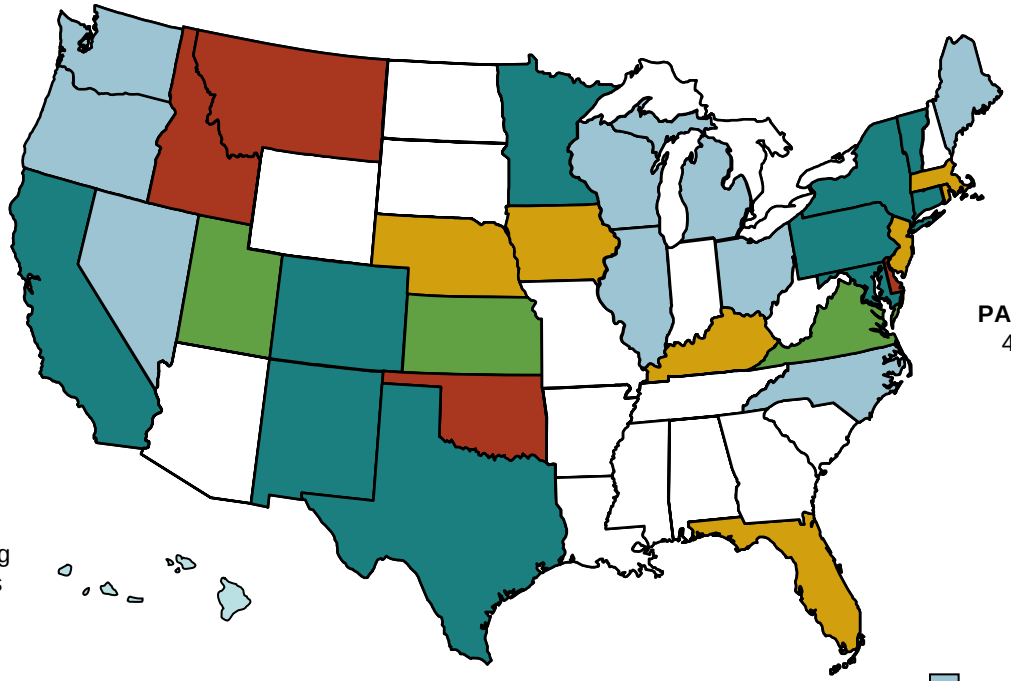
UT: EE incentives in RPS goal

CO: 11.5% energy savings 2009 – 2020 ~ 3,669 GWh

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

TX: 20% of load growth by 2010, using average growth rate of prior 5 years

HI: 20% savings of net electric sales by 2020; up to 50% of RPS



- EE as part of an RPS law, rule, or goal
- EERS by regulation or law (stand-alone)
- Voluntary standards (in or out of RPS)
- EERS pending regulations, proposed, or studied
- Other energy efficiency entity, rule, or goal

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: DG – distributed generation; DR - demand response; DSR – demand-side resources; EE - energy efficiency; E&G: electric and gas utilities; IRP – integrated resource plan; RPS: Renewable Portfolio Standard; SOS: Standard Offer Service
Sources: ACEEE, EPA, Regulatory Assistance Project, Union of Concerned Scientists, State regulatory and legislative sites; State Efficiency Agency reports; trade press

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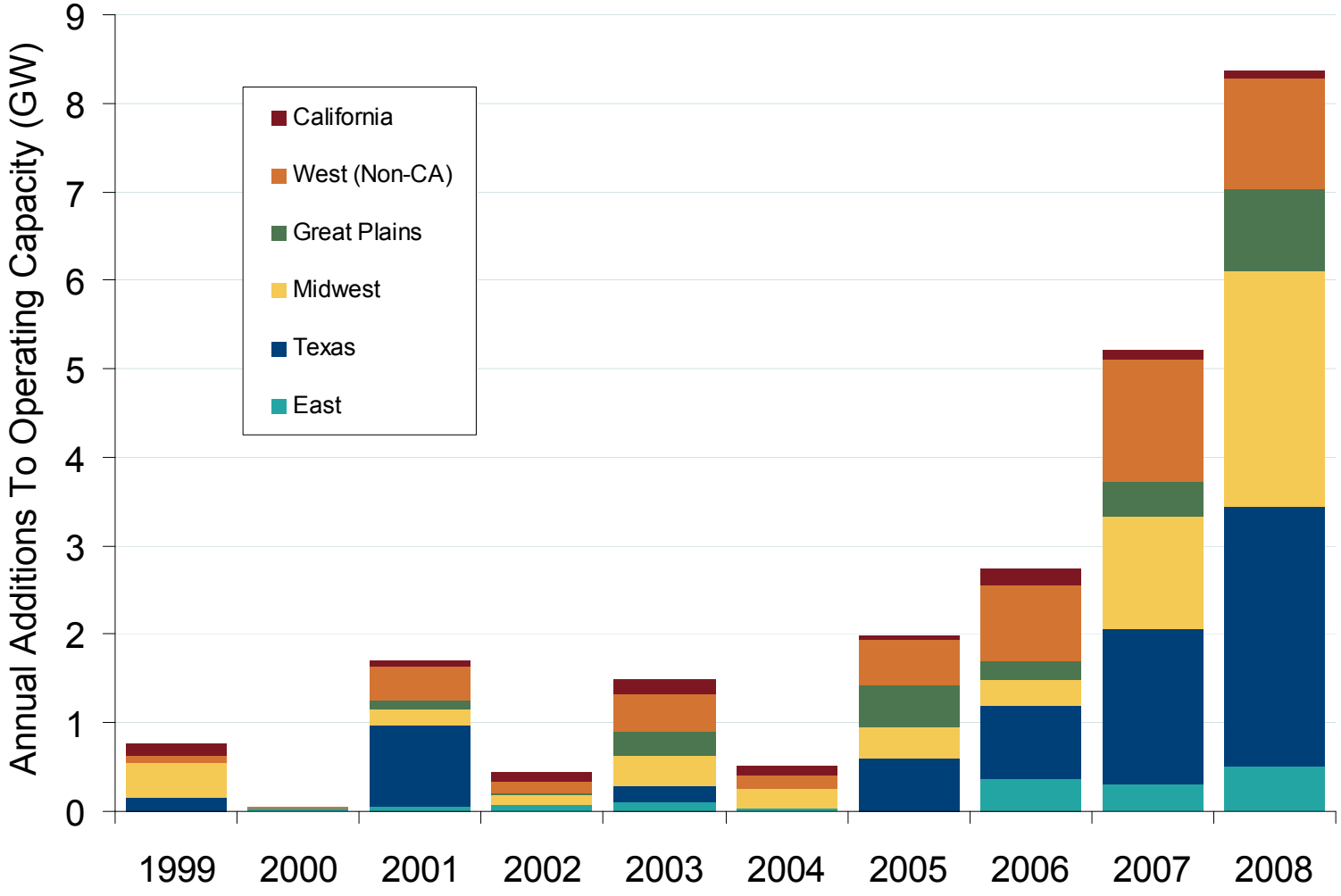
Regional Wind Capacity Growth



West w/o CA: CO, HI, ID, MT, NM, OR, UT, WA, WY
Great Plains: KS, NE, ND, OK, SD
Midwest: IL, IN, IA, MI, MN, MO, OH, WI
East: ME, MA, NH, NJ, NY, PA, RI, TN, VT

Source: Energy Velocity Generating Unit Capacity Dataset
April 2009 Western Snapshot Report

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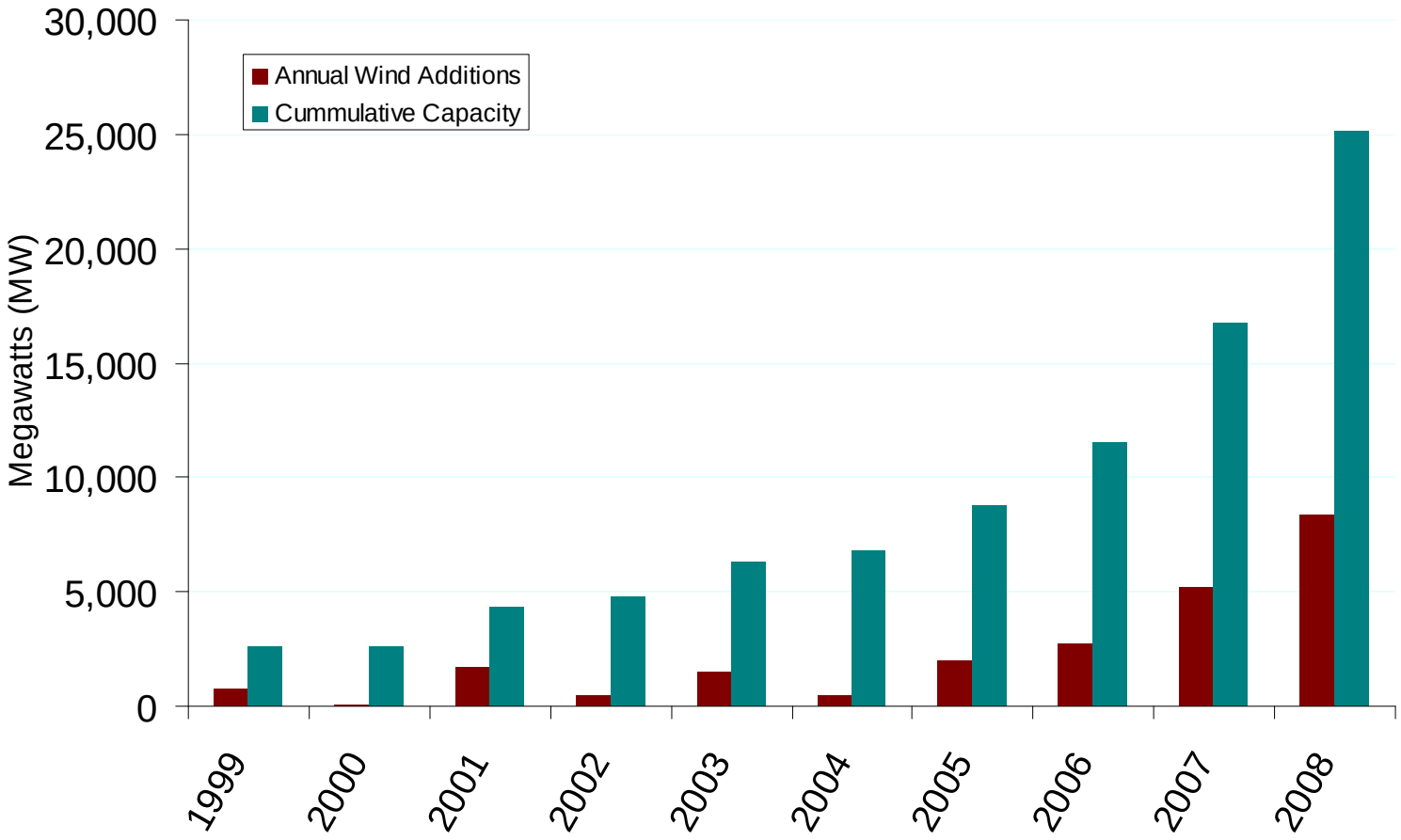
U.S. Wind Capacity Growth, 1999 – 2008



Source: Energy Velocity Generating Unit Capacity Dataset

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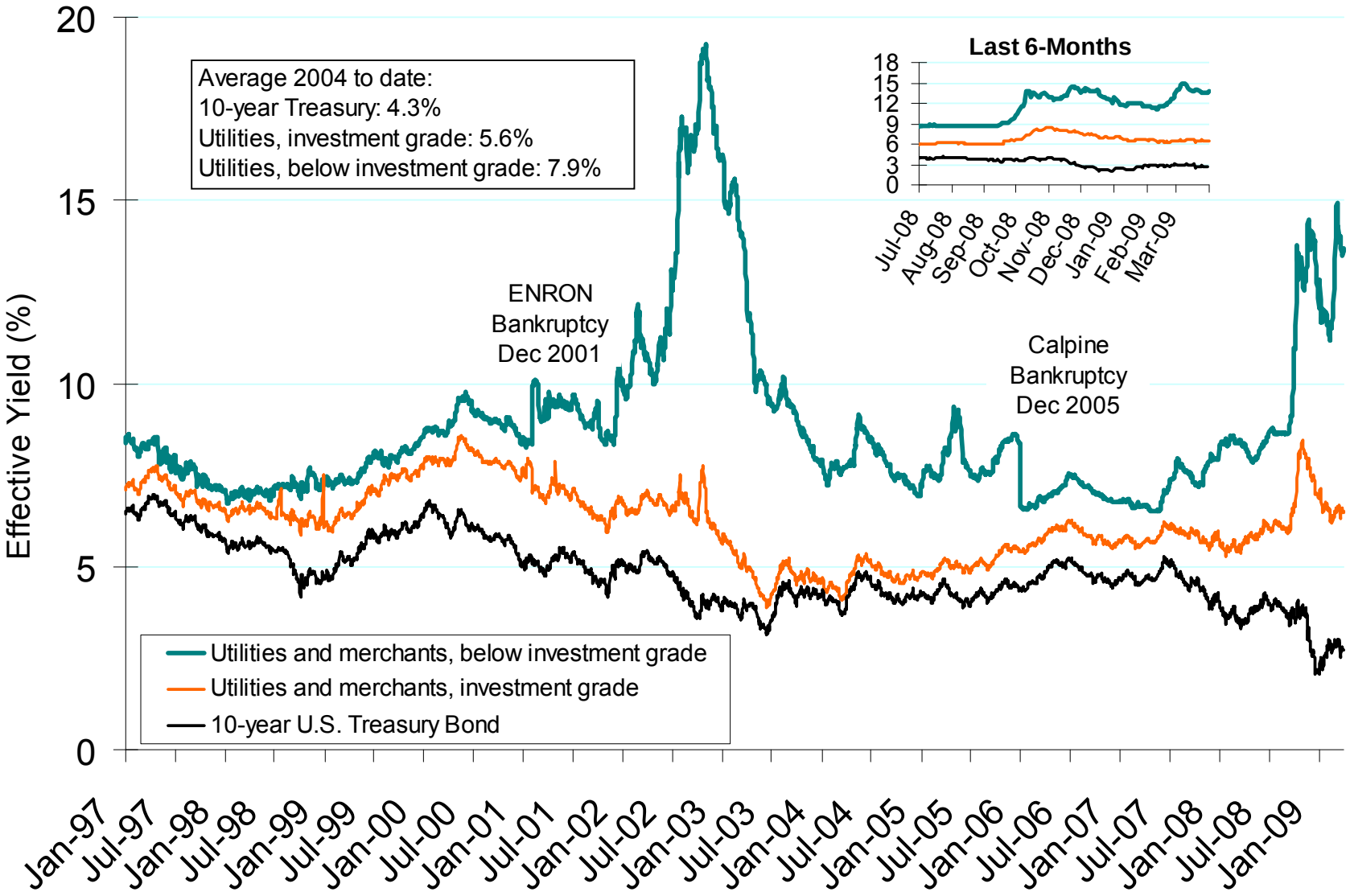
Financial Markets: Comparative Bond Yields

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

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.

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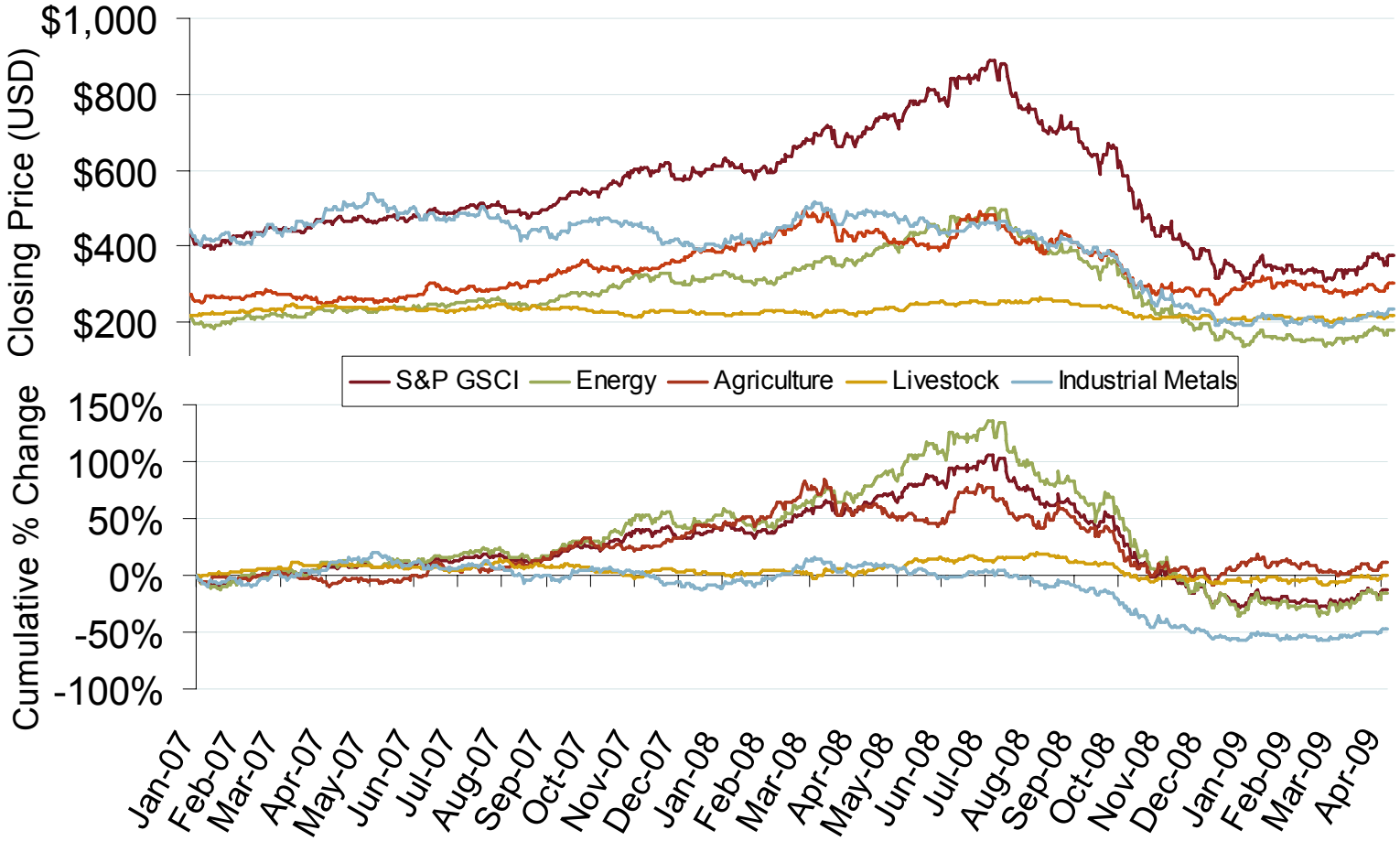
S&P Goldman Sachs Commodity Index Official Closing Price



Source: Bloomberg Data

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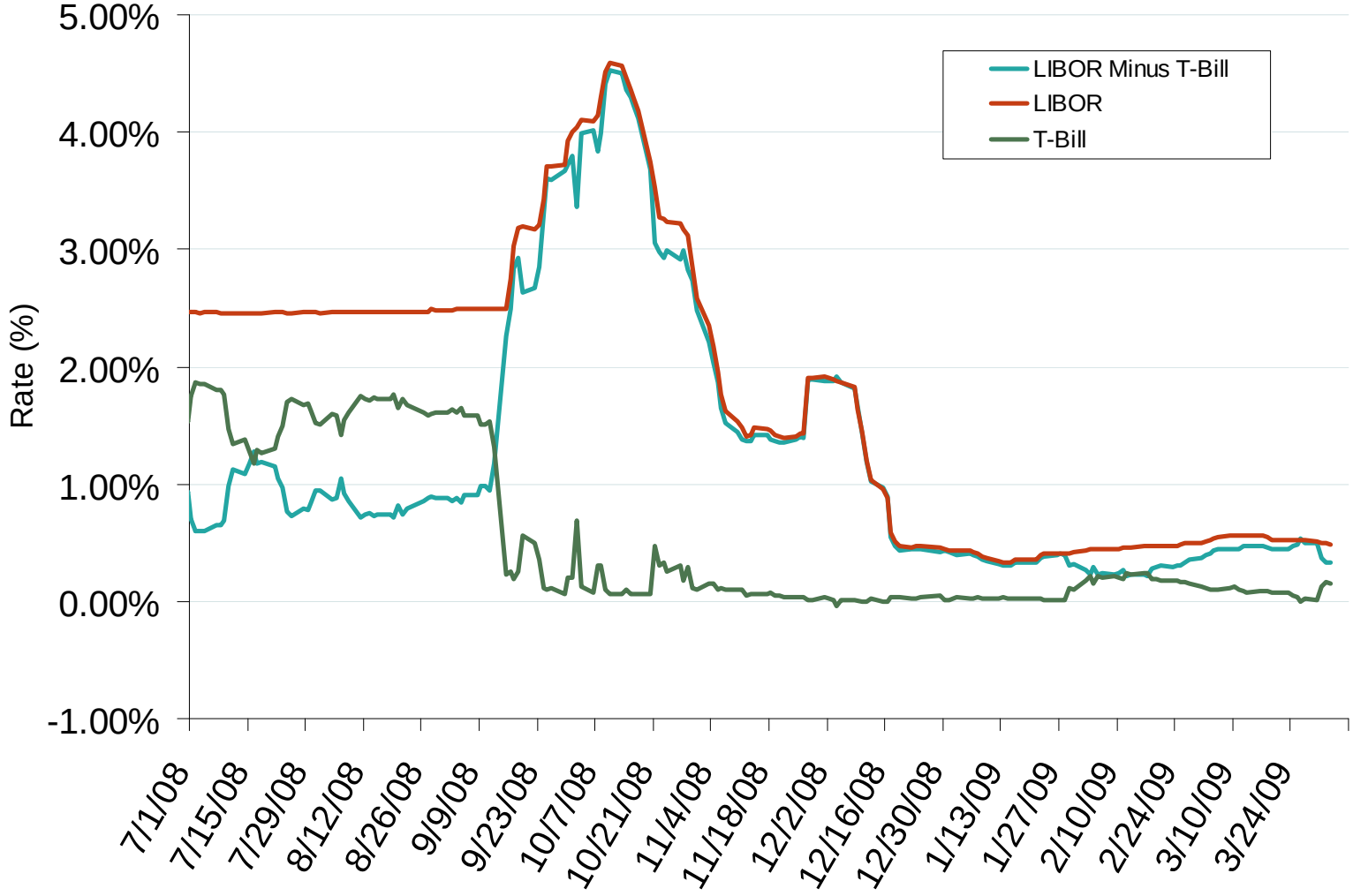
One Month LIBOR and One Month US Treasury Bill Rates



Source: Derived from Bloomberg data.

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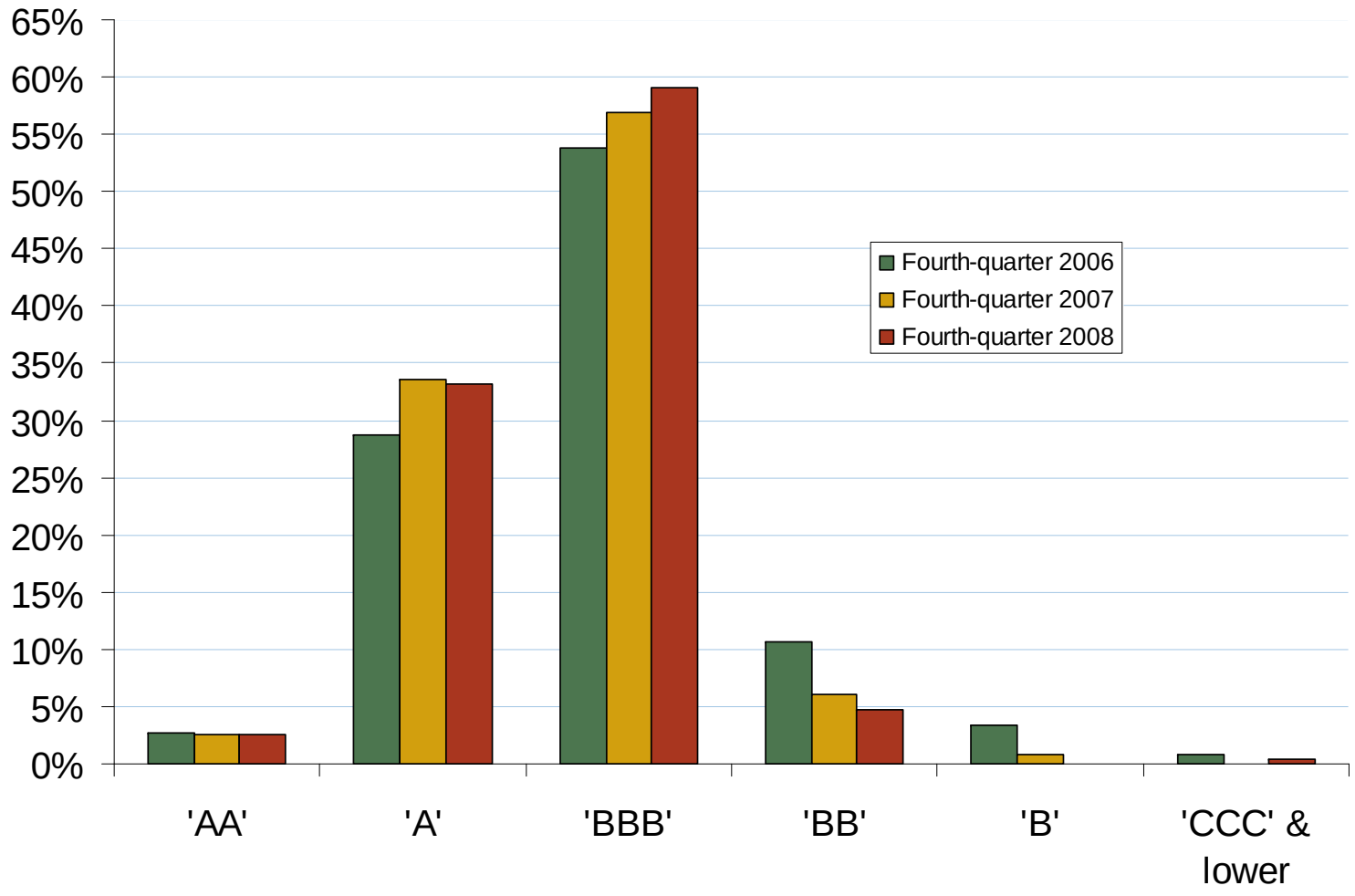
U.S. Electric and Gas Utility Ratings Distribution



Source: Derived from Standard and Poors data.

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