

OE ENERGY MARKET SNAPSHOT

Midwest States Version – April 2008 Data

- **Market Fundamentals**
- **Prices and Market Analysis**

Office of Enforcement
Federal Energy Regulatory Commission
May 2008



2008

Summer Market and

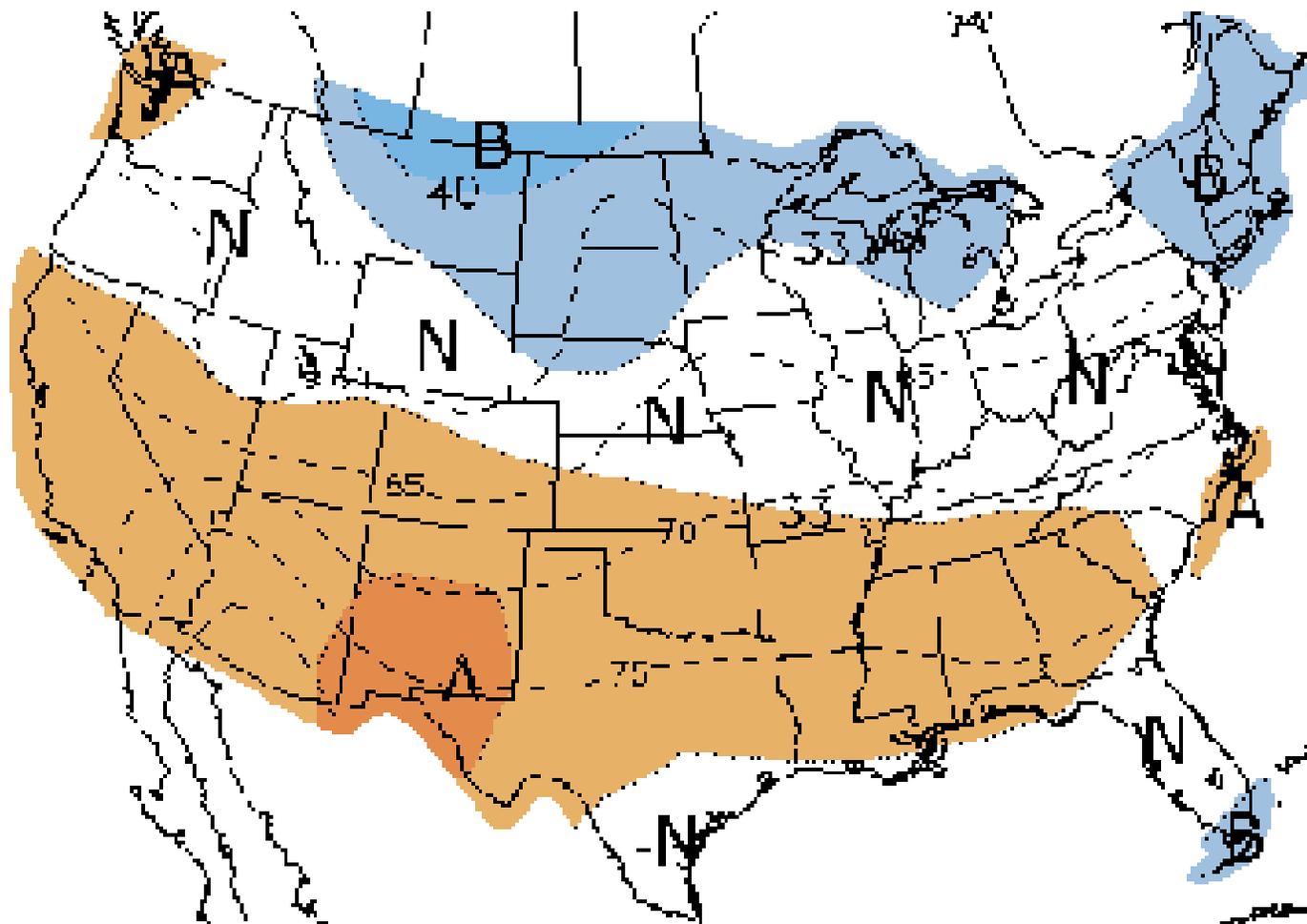
Reliability Assessment

Item No.: A-3
May 15, 2008



Market Fundamentals

NOAA's 8 to 14 Day Temperature Forecast Made May 18, Valid for May 26 – June 1, 2008



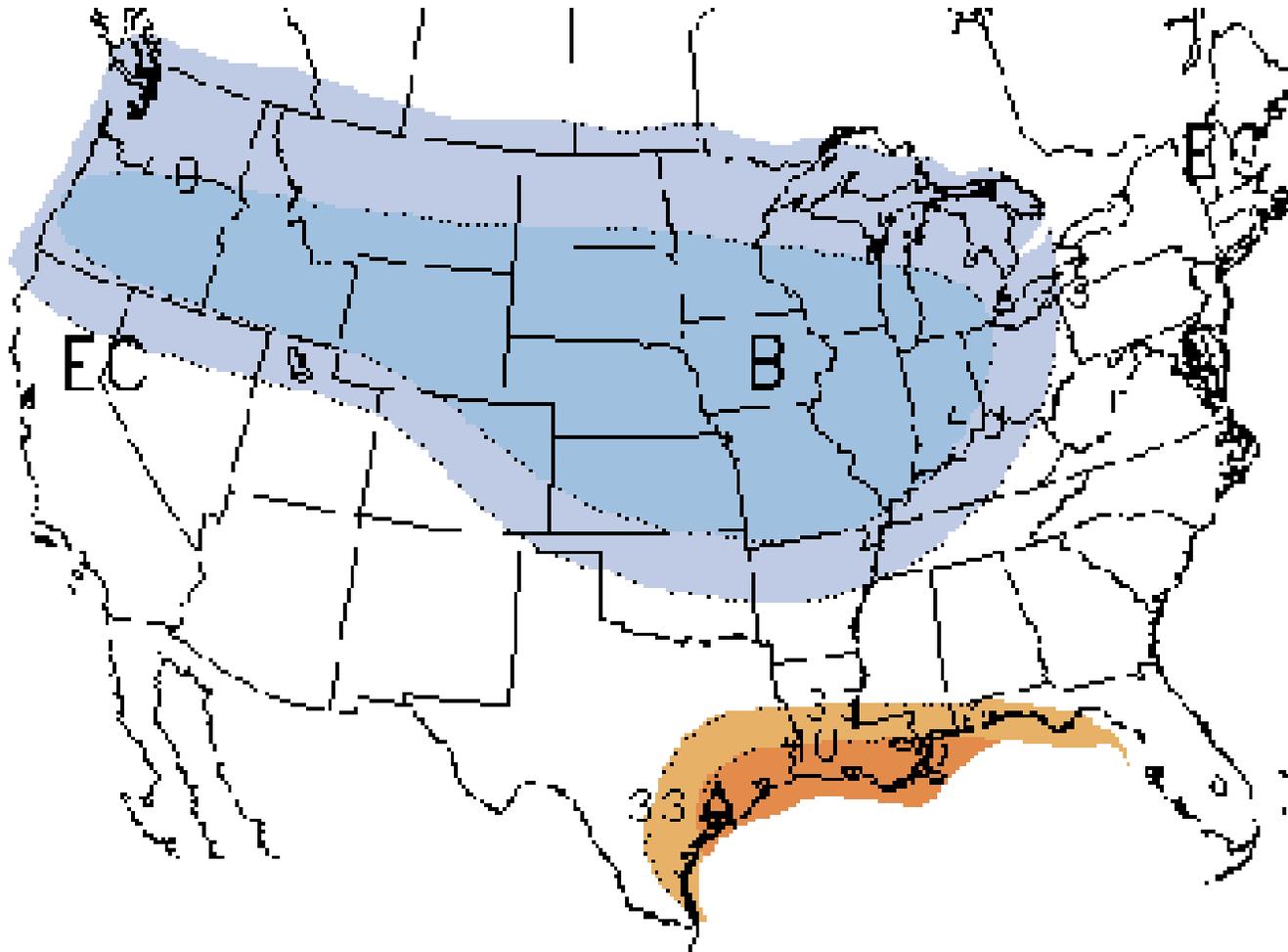
Note: "A" areas are above normal and "B" areas are below normal. Normal is based on the last 30 years of data.

Source: NOAA

Updated May 19, 2008

3012

NOAA's Monthly Temperature Forecast Made April 30, Valid for May 2008



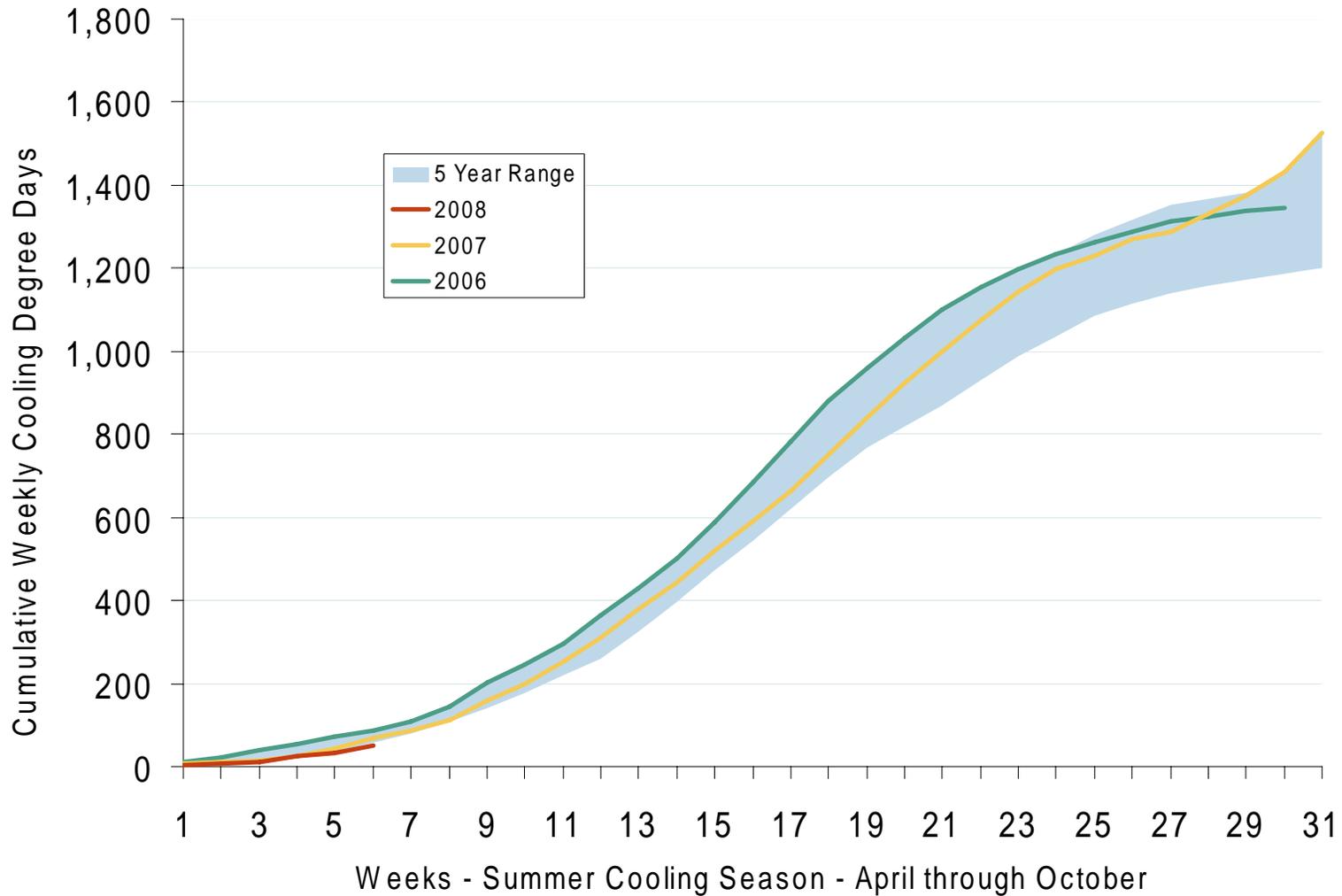
Note: "A" areas are above normal, "B" areas are below normal and "EC" means equal chance. Normal based on the last 30 years of data.

Source: NOAA

Updated May 12, 2008

3012

U. S. Summer Cumulative Cooling Degree Days

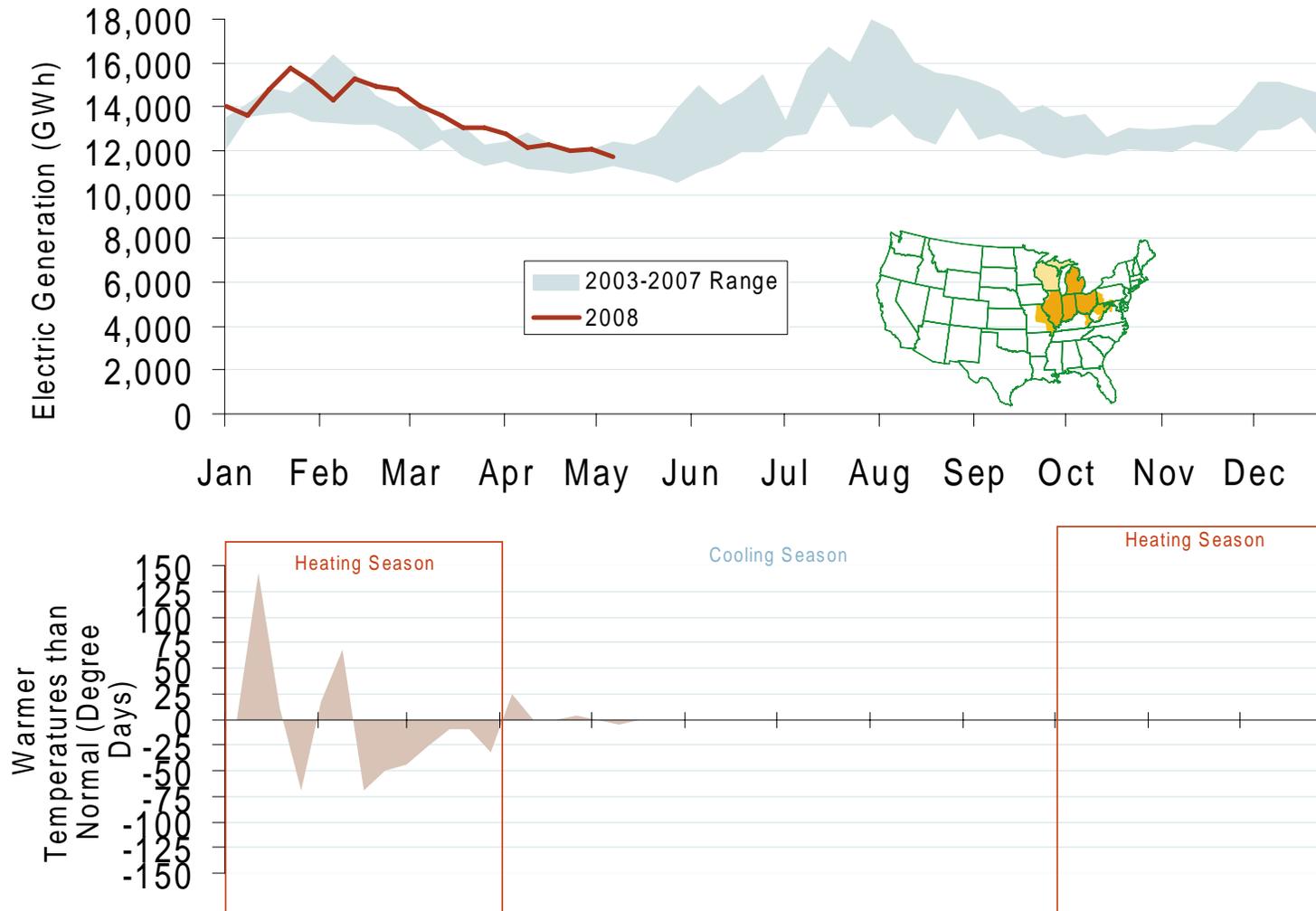


Source: Derived from NOAA data.

Updated May 6, 2008

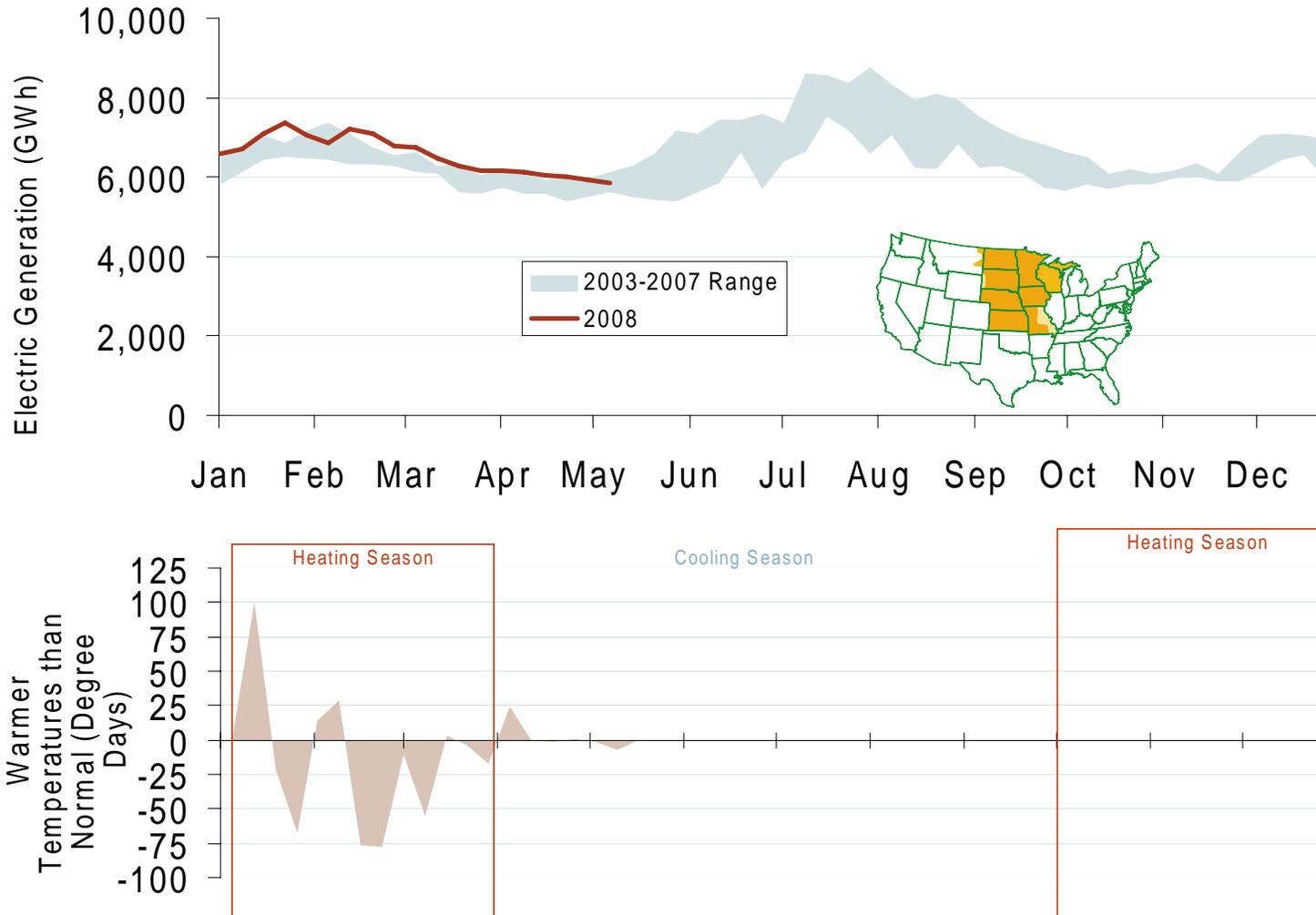
3023

Weekly Electric Generation Output and Temperatures Central Industrial Region



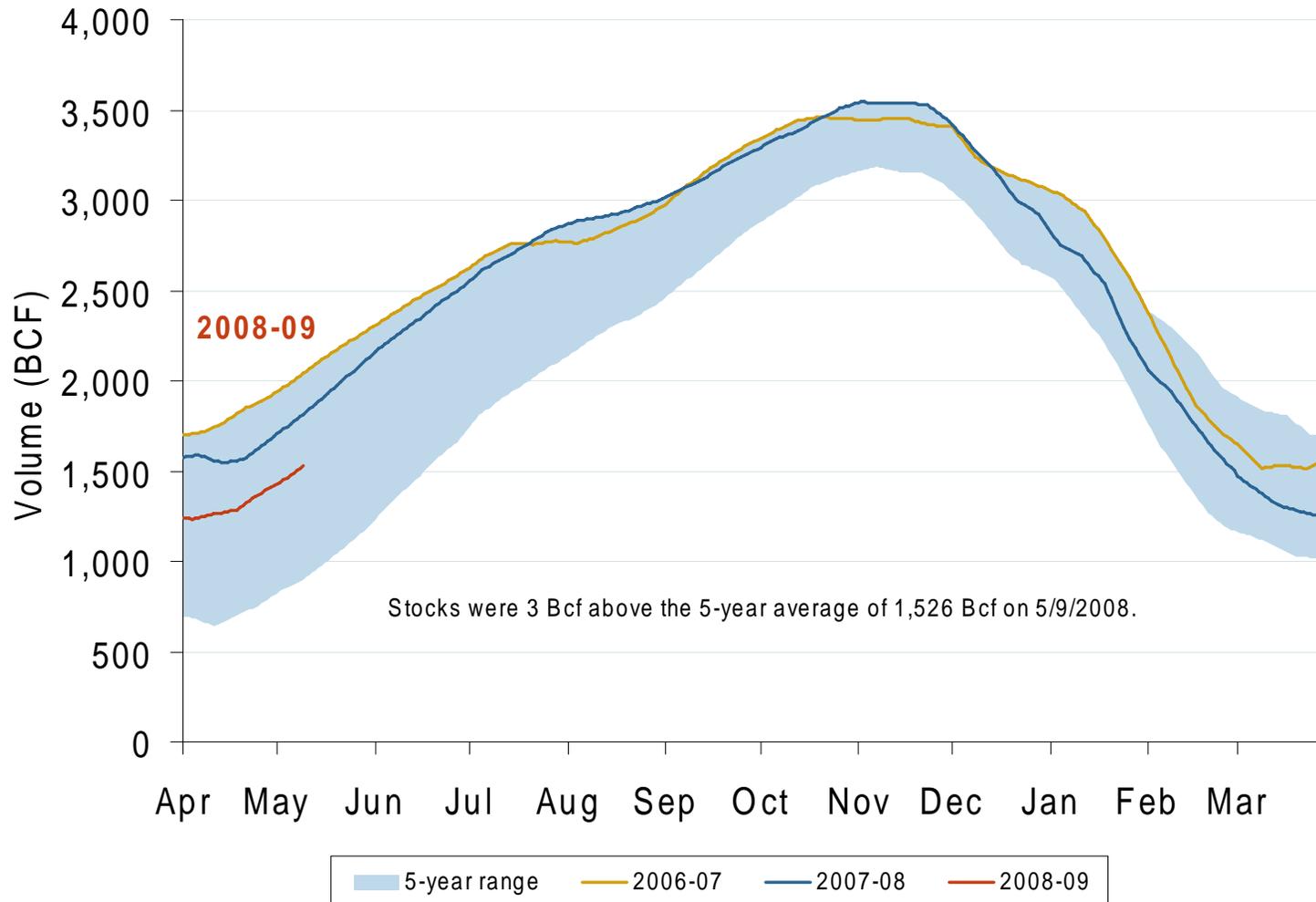
Source: Derived from EEI and NOAA data.

Weekly Electric Generation Output and Temperatures West Central Region



Source: Derived from EEI and NOAA data.

Total U.S. Working Gas in Storage

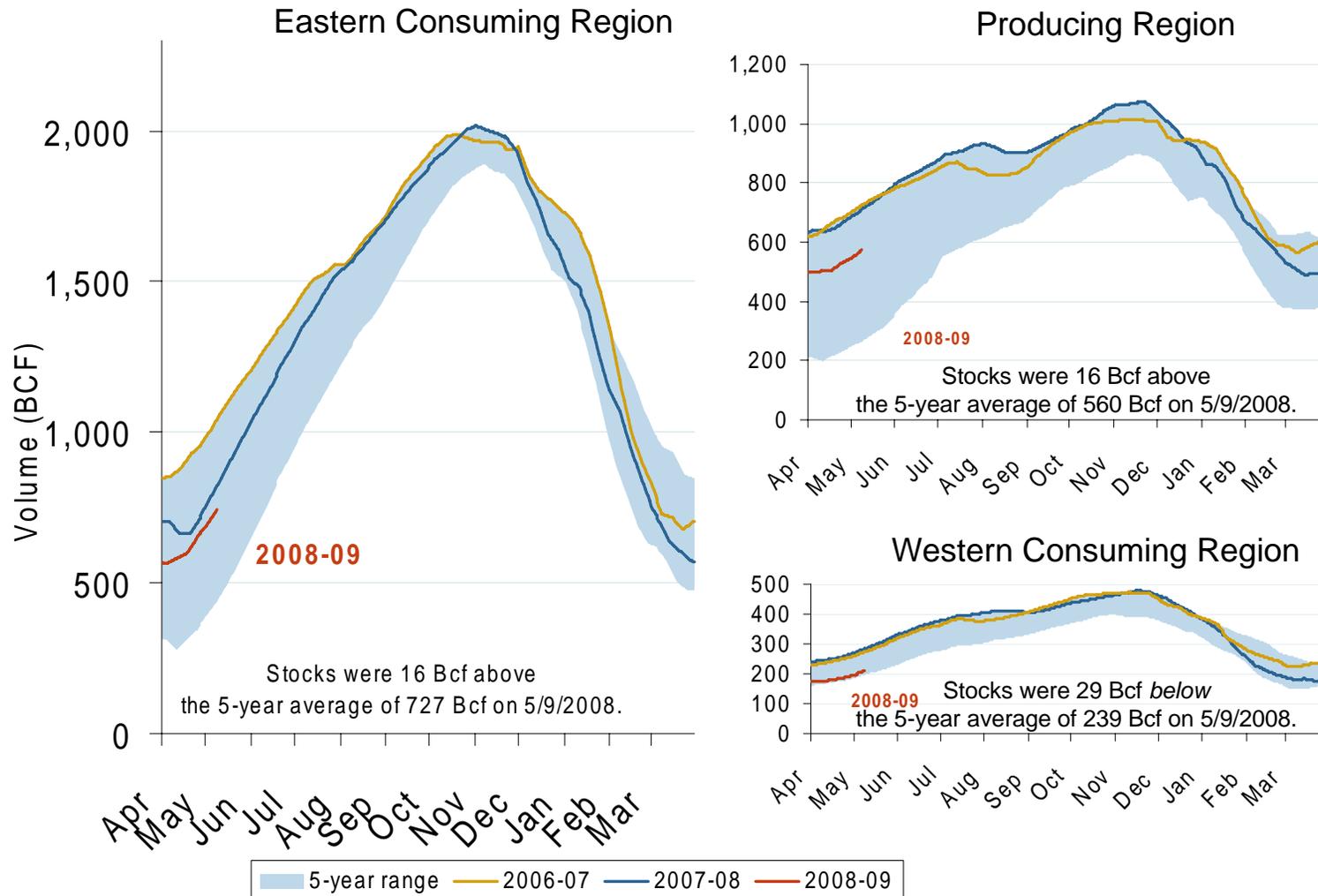


Source: Derived from EIA data.

Updated May 16, 2008

2003

Regional Totals of Working Gas in Storage

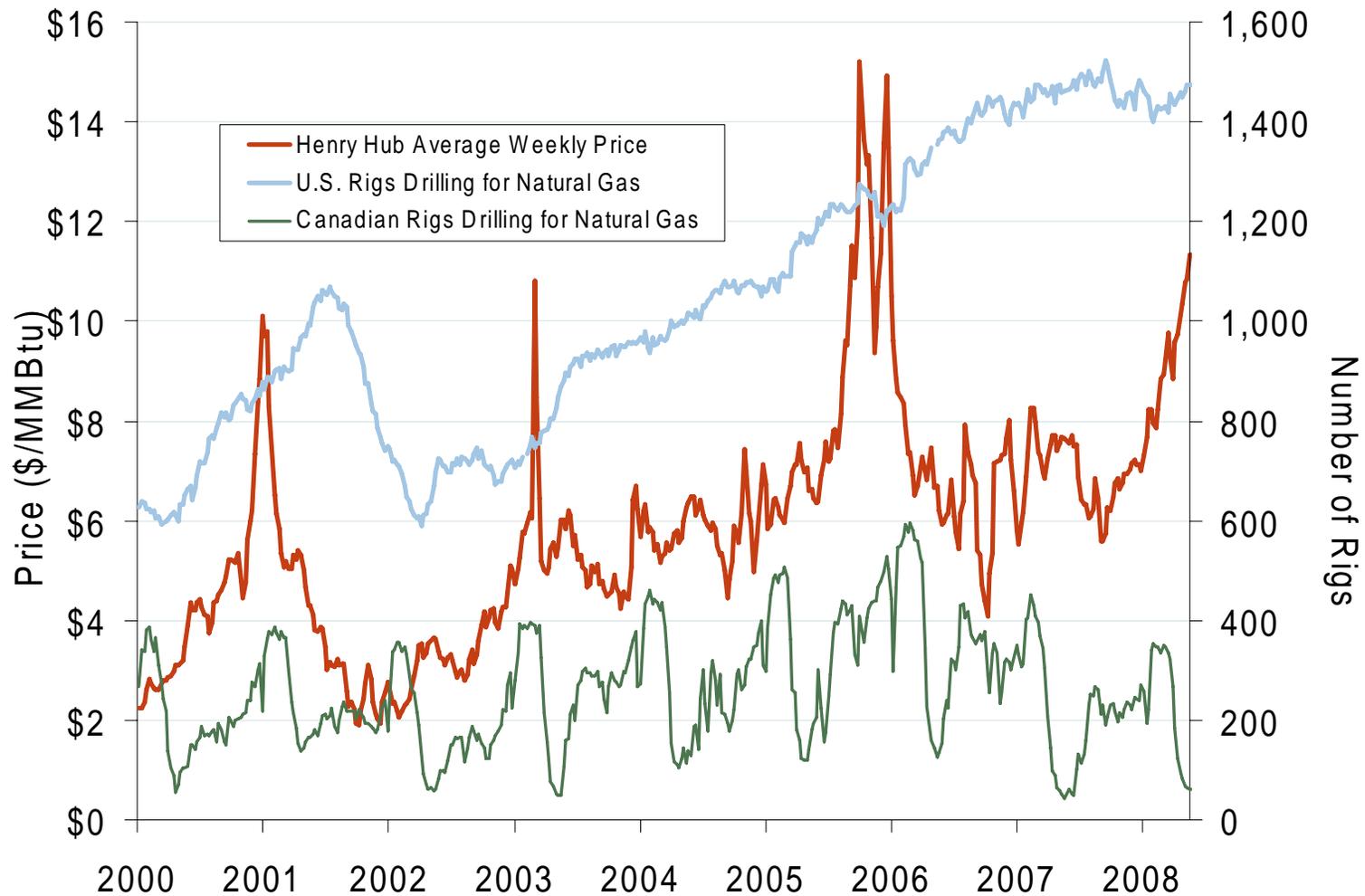


Source: Derived from EIA data.

Updated May 16, 2008

2004

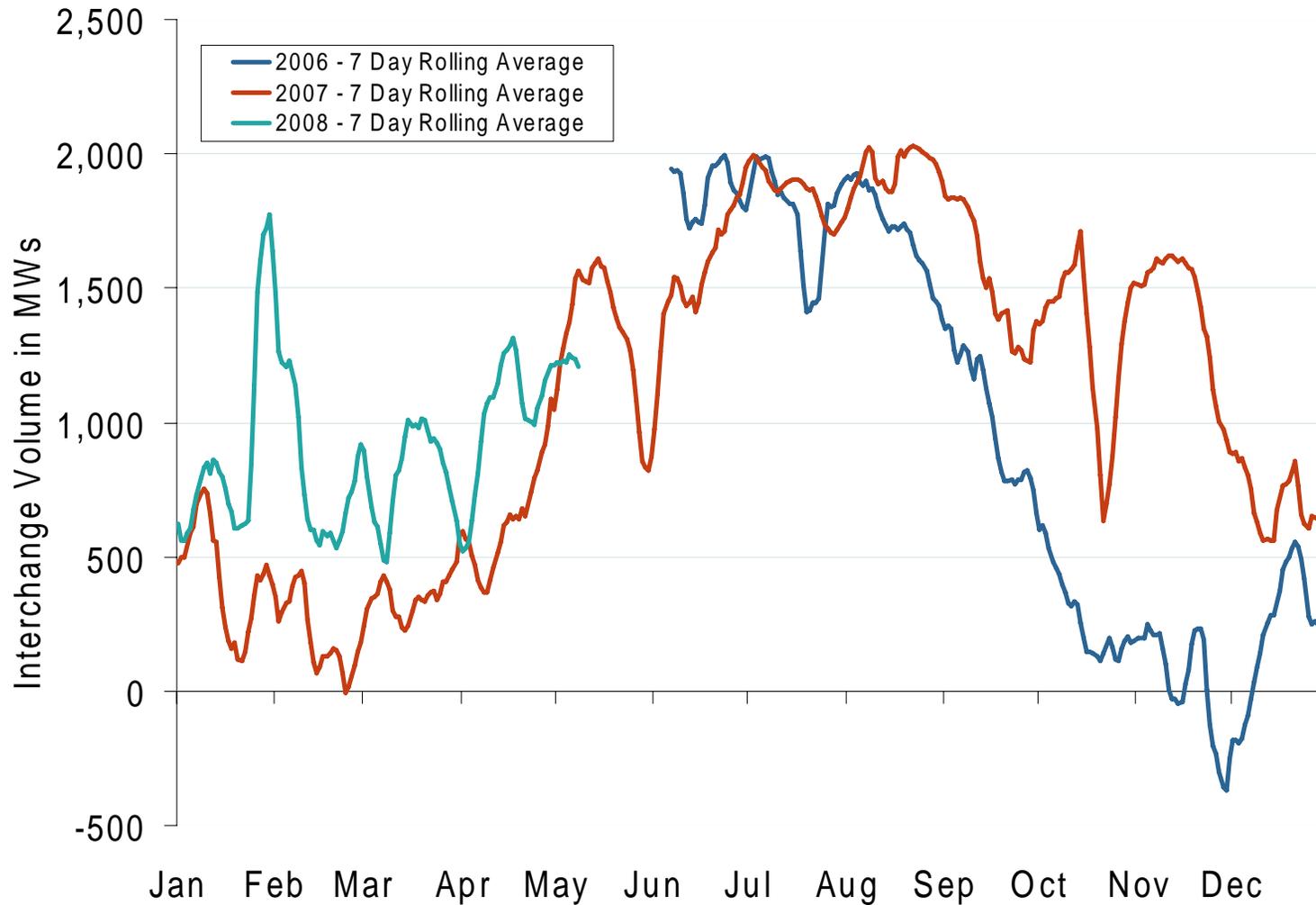
U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



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

Updated May 16, 2008 2007

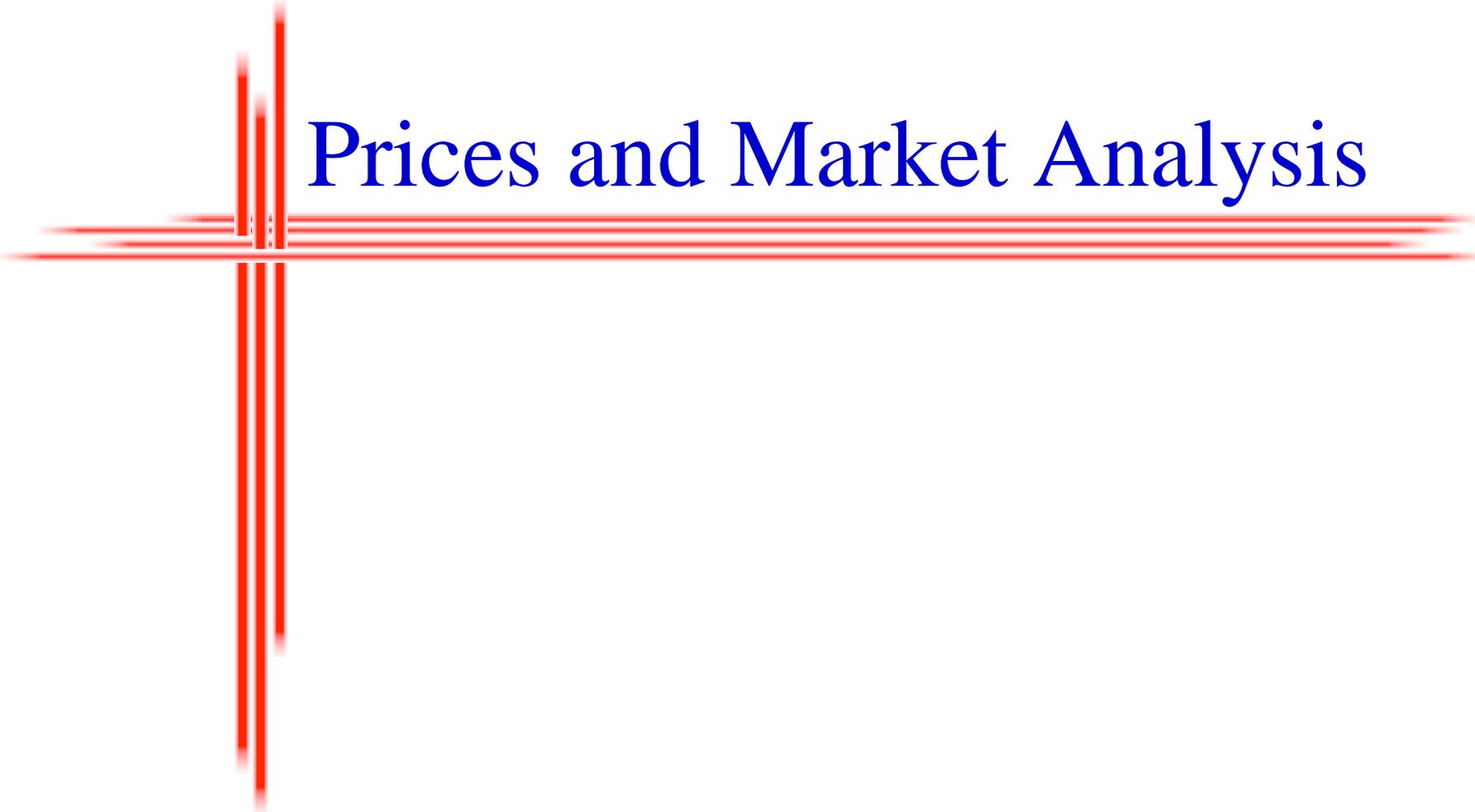
Imports into MISO from Manitoba Hydro 2006, 2007, 2008



Source: Derived from MISO data.

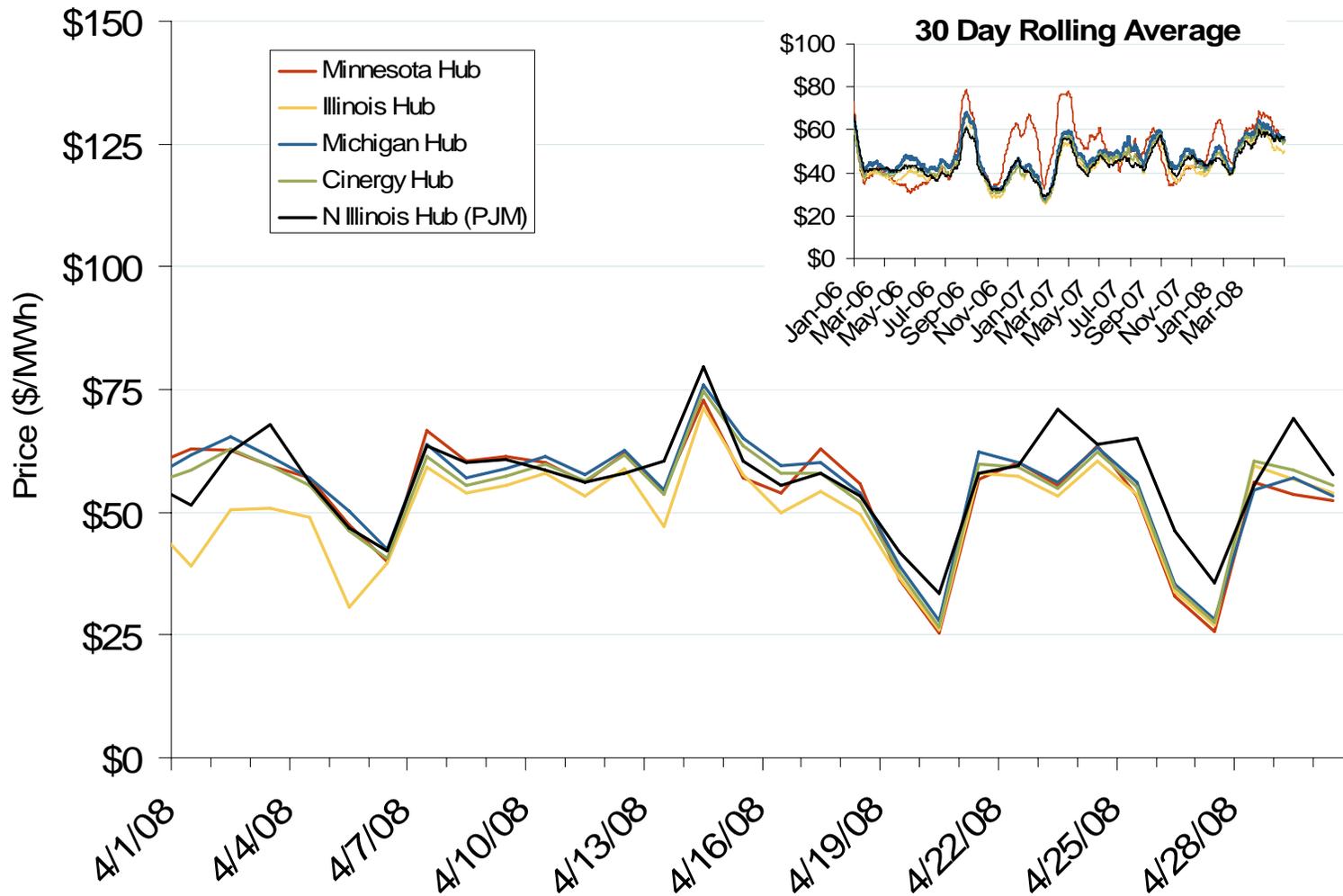
Updated May 6, 2008

1135



Prices and Market Analysis

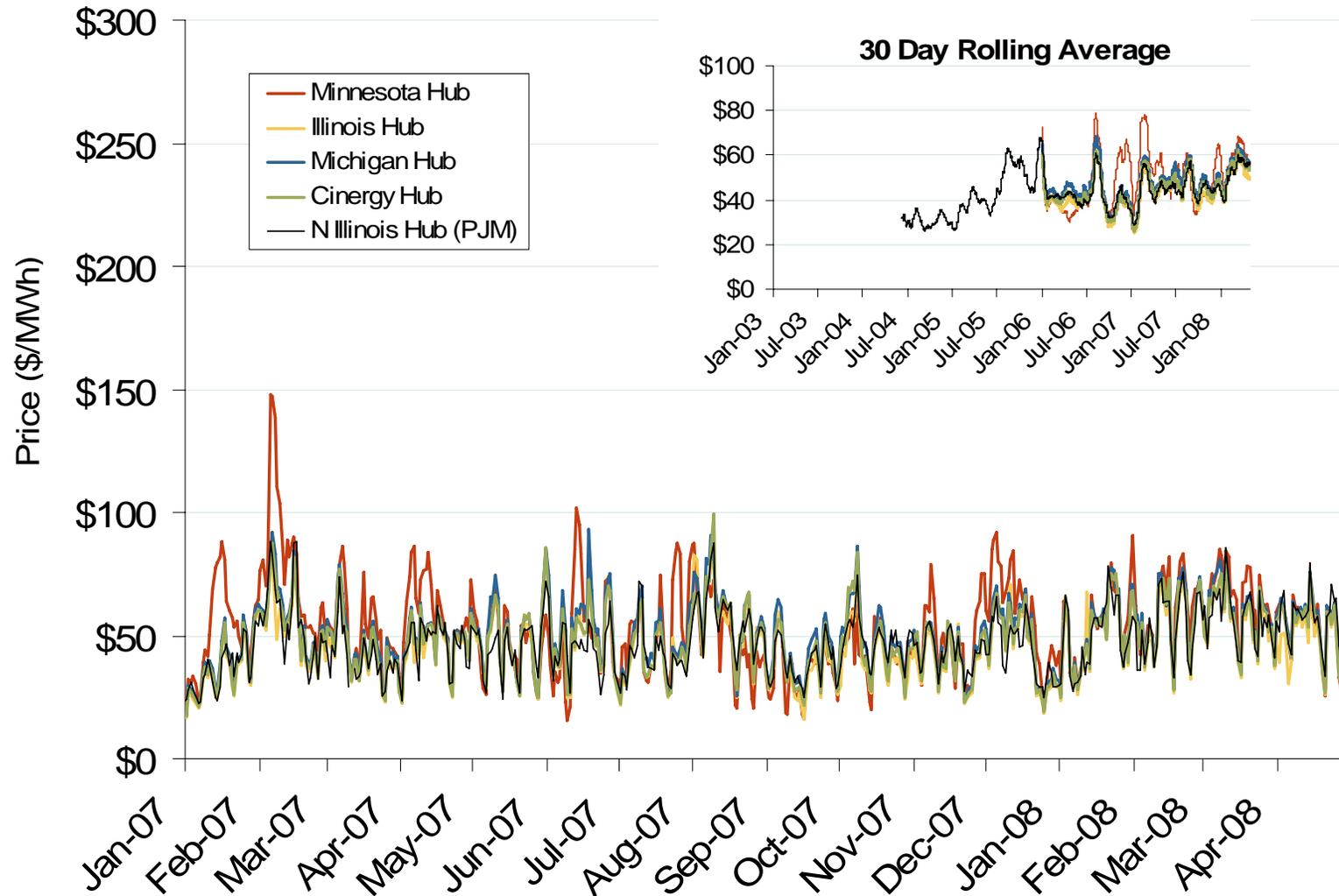
Daily Average of MISO Day-Ahead Prices - All Hours



Source: Derived by Bloomberg from MISO and PJM data as reported by Bloomberg.

Updated May 6, 2008 1128

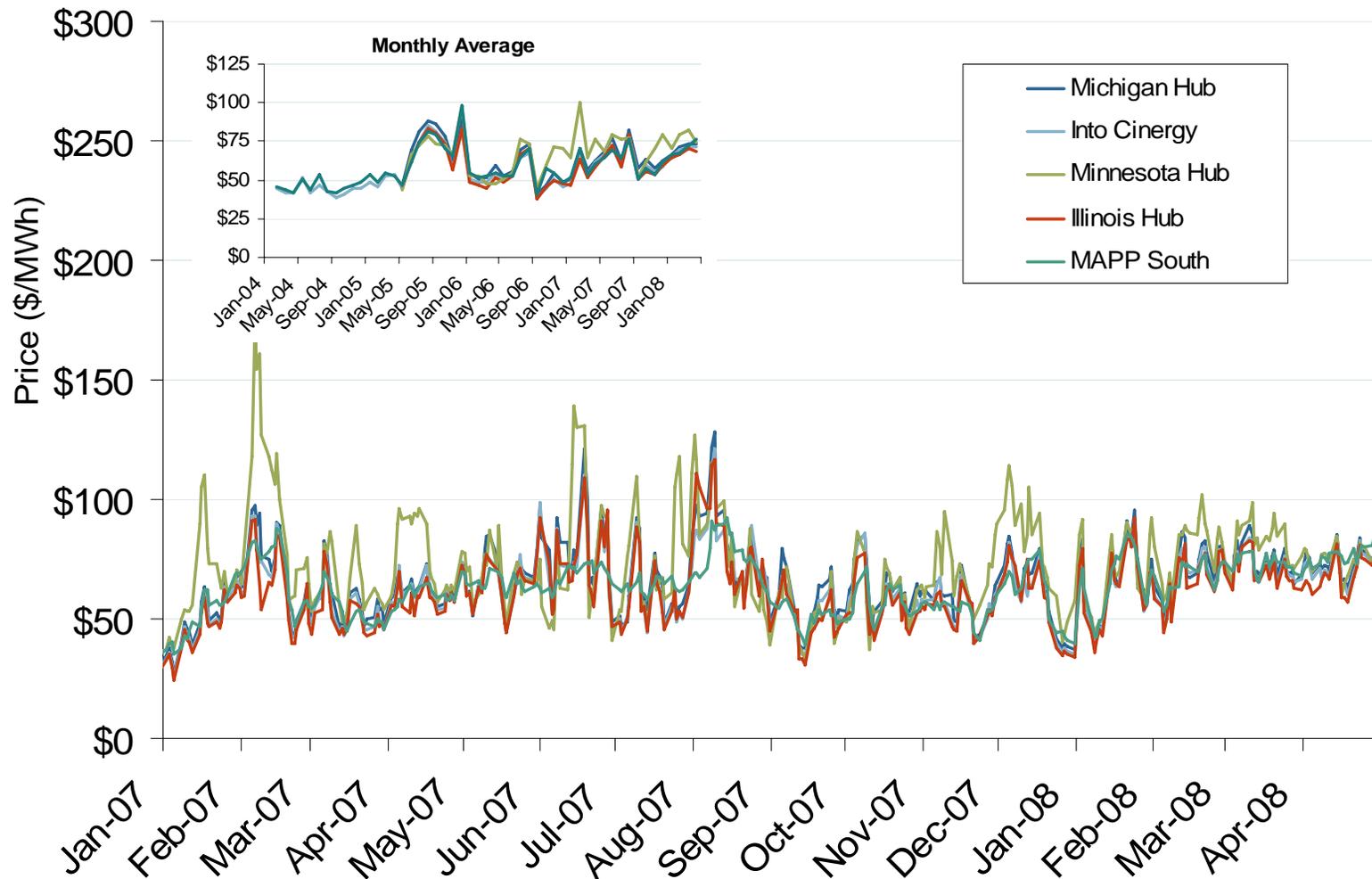
Daily Average of MISO Day-Ahead Prices - All Hours



Source: Derived by Bloomberg from MISO and PJM data as reported by Bloomberg.

Updated May 6, 2008

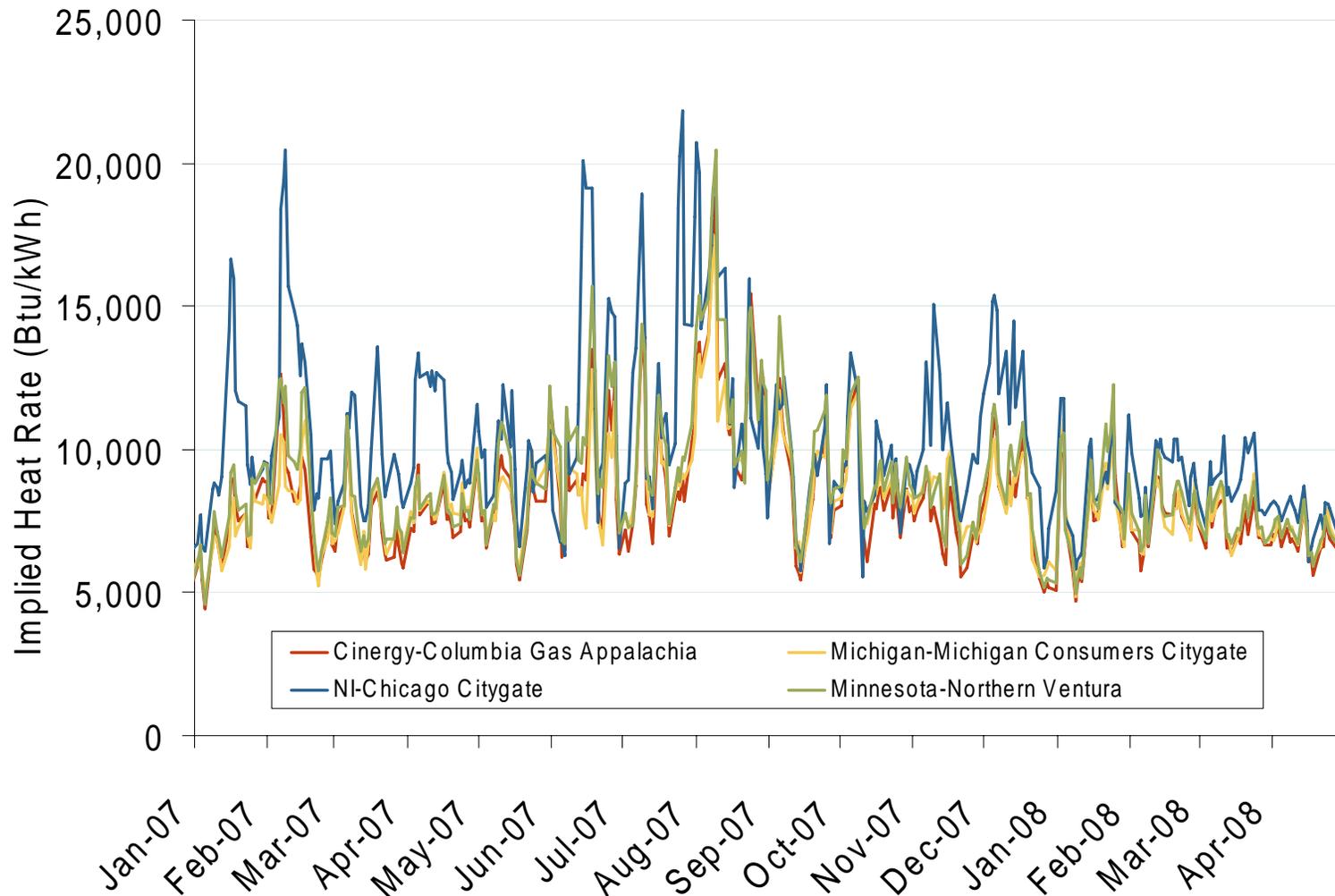
Midwestern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated May 6, 2008 1194

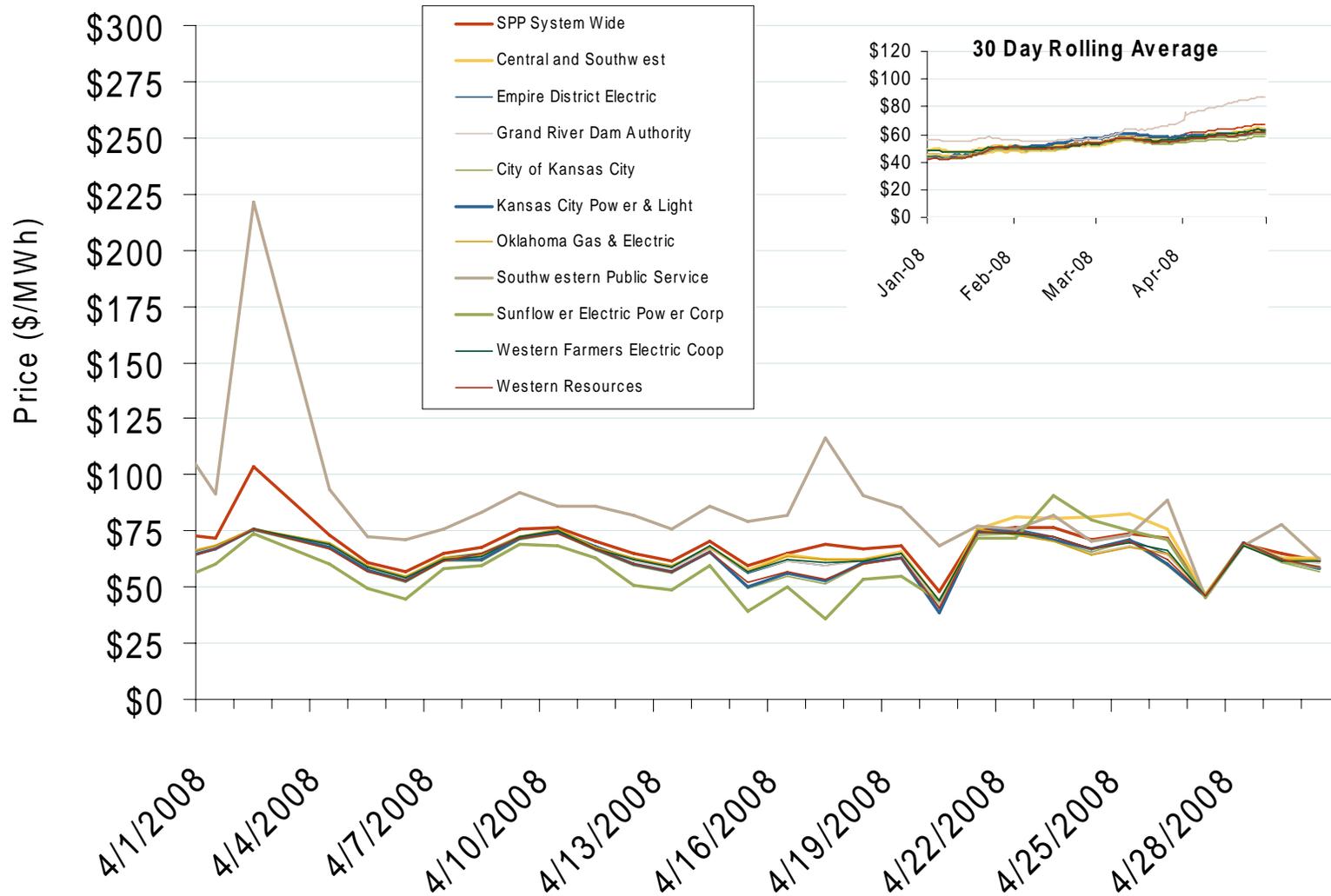
Implied Heat Rates at MISO Hubs



Source: Derived from *Platts* data

Updated May 6, 2008

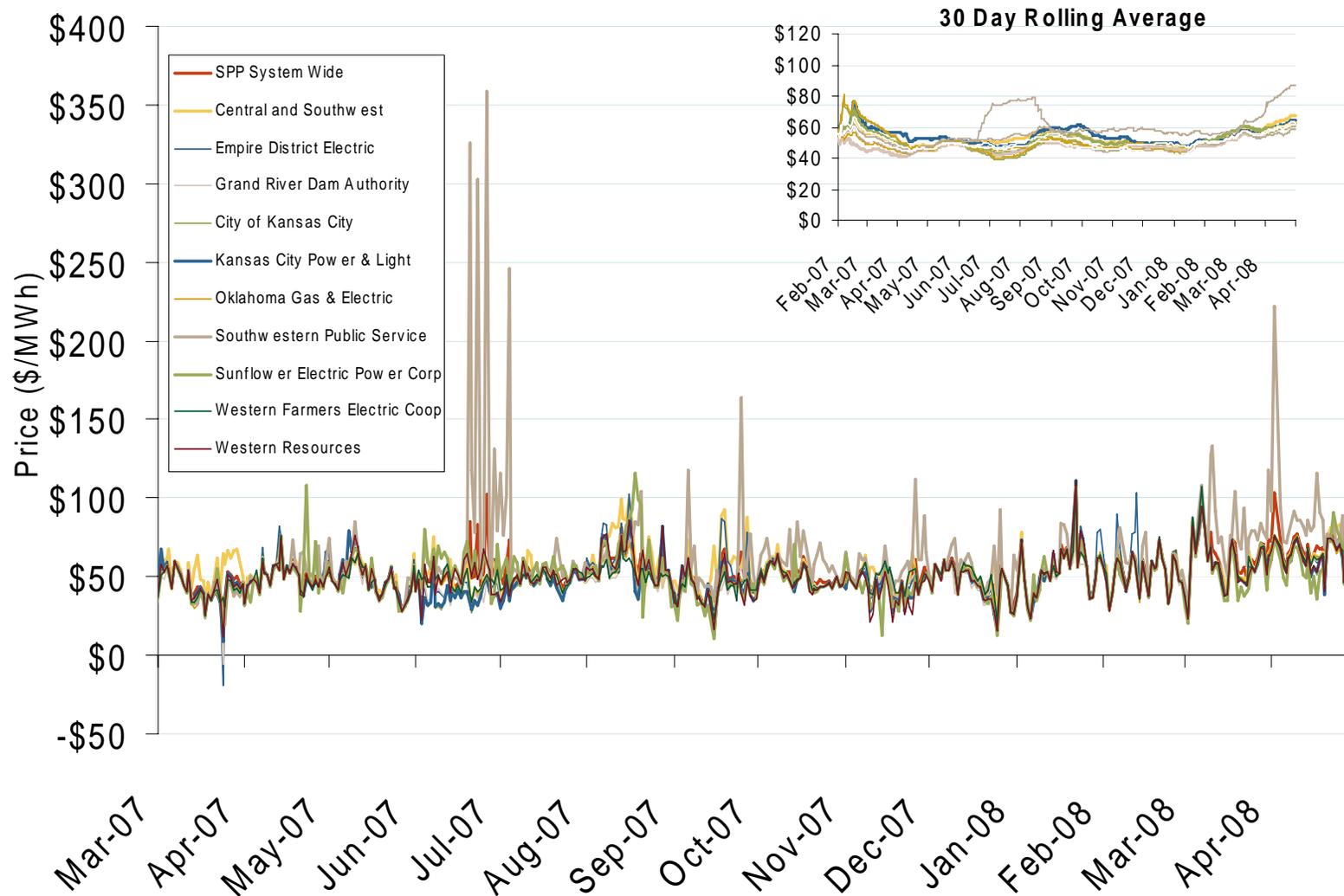
Daily Average of SPP Real Time Prices - All Hours



Source: Derived from SPP data.

Updated May 6, 2008 1161

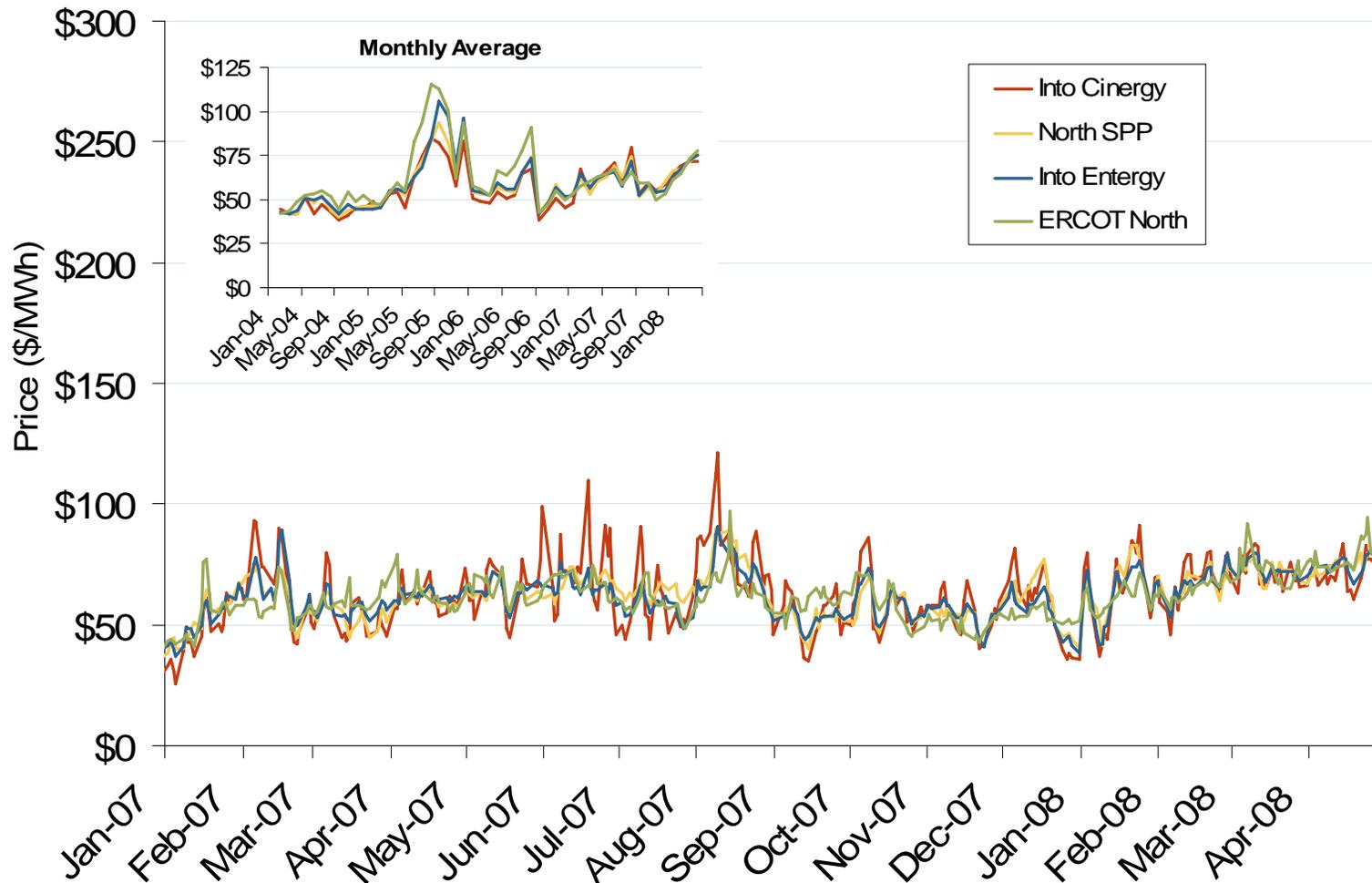
Daily Average of SPP Real Time Prices - All Hours



Source: Derived from SPP data.

Updated May 6, 2008

Midwestern Daily Bilateral Day-Ahead On-Peak Prices

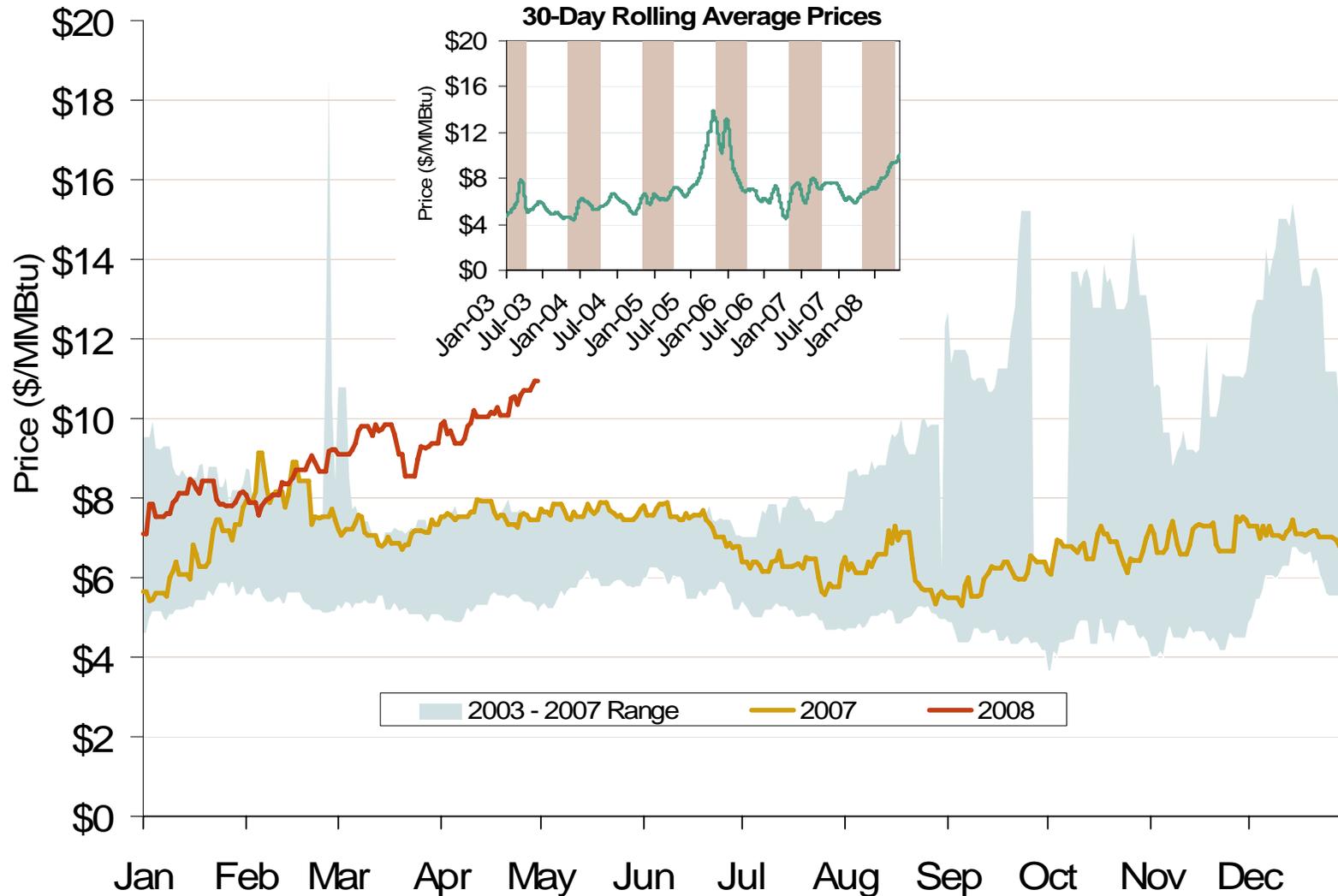


Source: Derived from Platts data.

Updated May 6, 2008
1073

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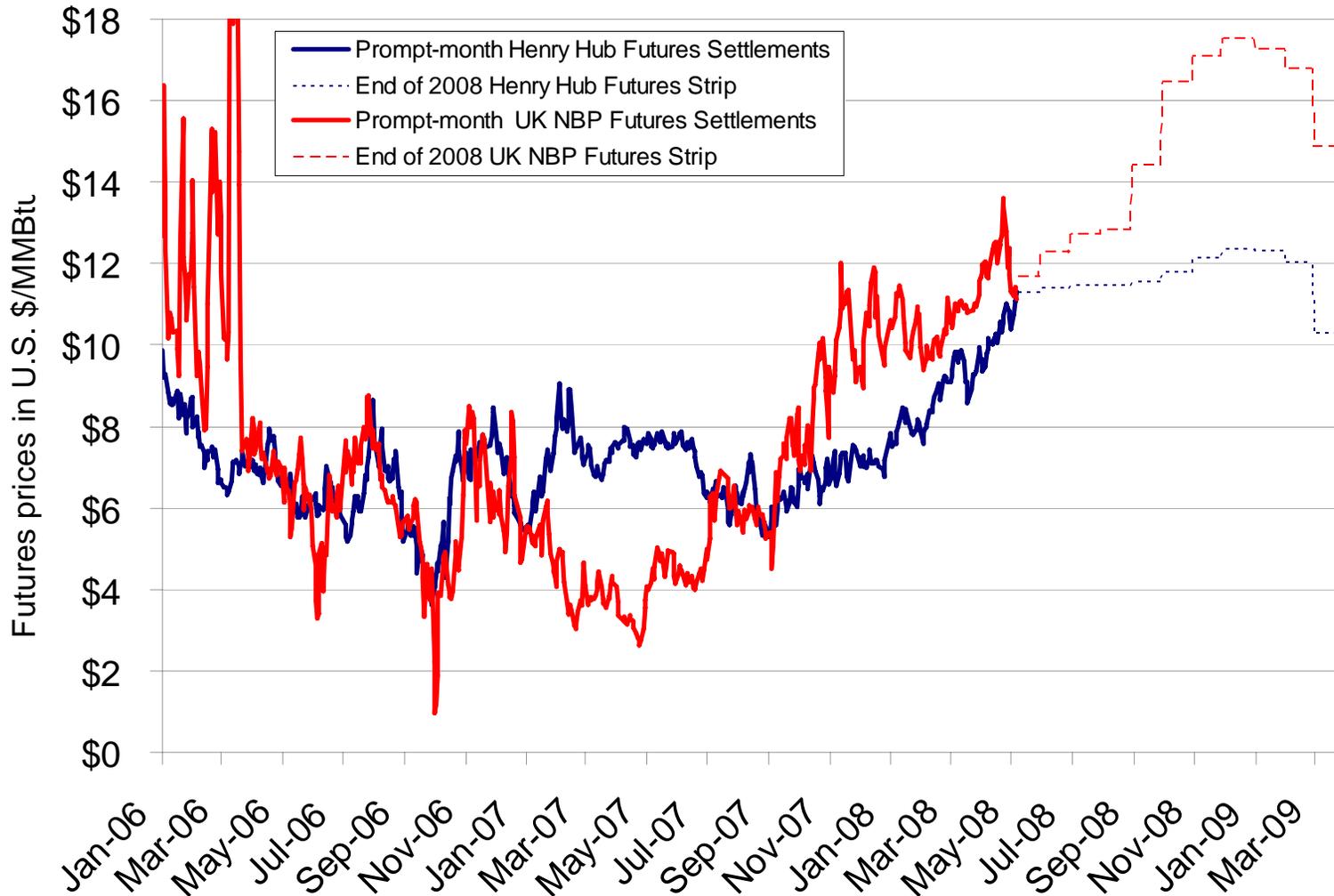
Henry Hub Natural Gas Daily Spot Prices 2007, 2008 and 2003-2007 Year Range



Source: Derived from *Platts* data.

Updated May 6, 2008
2085

U. S. Gas Futures Prices Rise Above \$6-\$8 Range

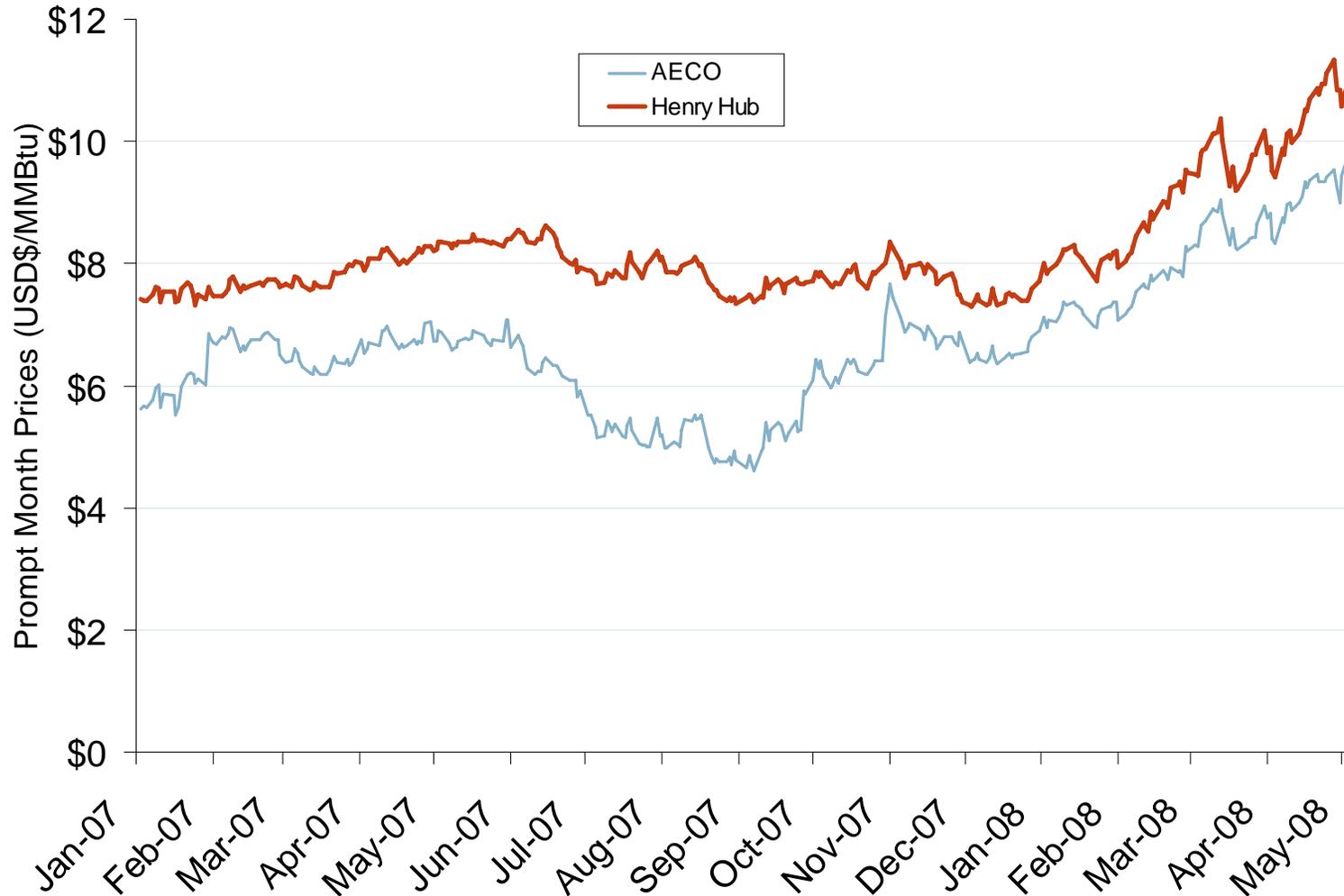


Source: Derived from NYMEX and ICE data.

Updated May 6, 2008

2177

Henry Hub and AECO Prompt-Month Futures Prices

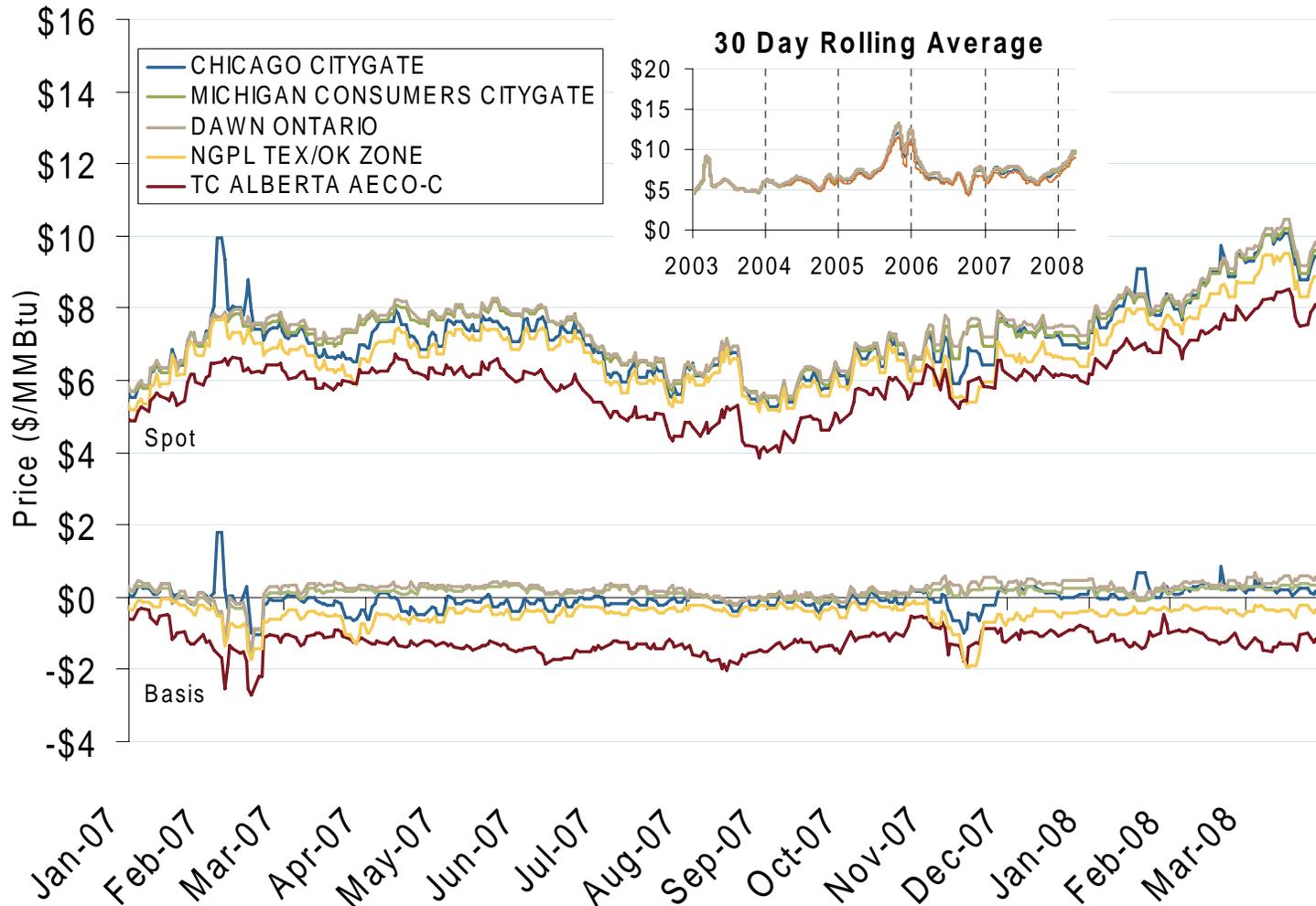


Source: Derived from ICE data.

Updated May 7, 2008

2172

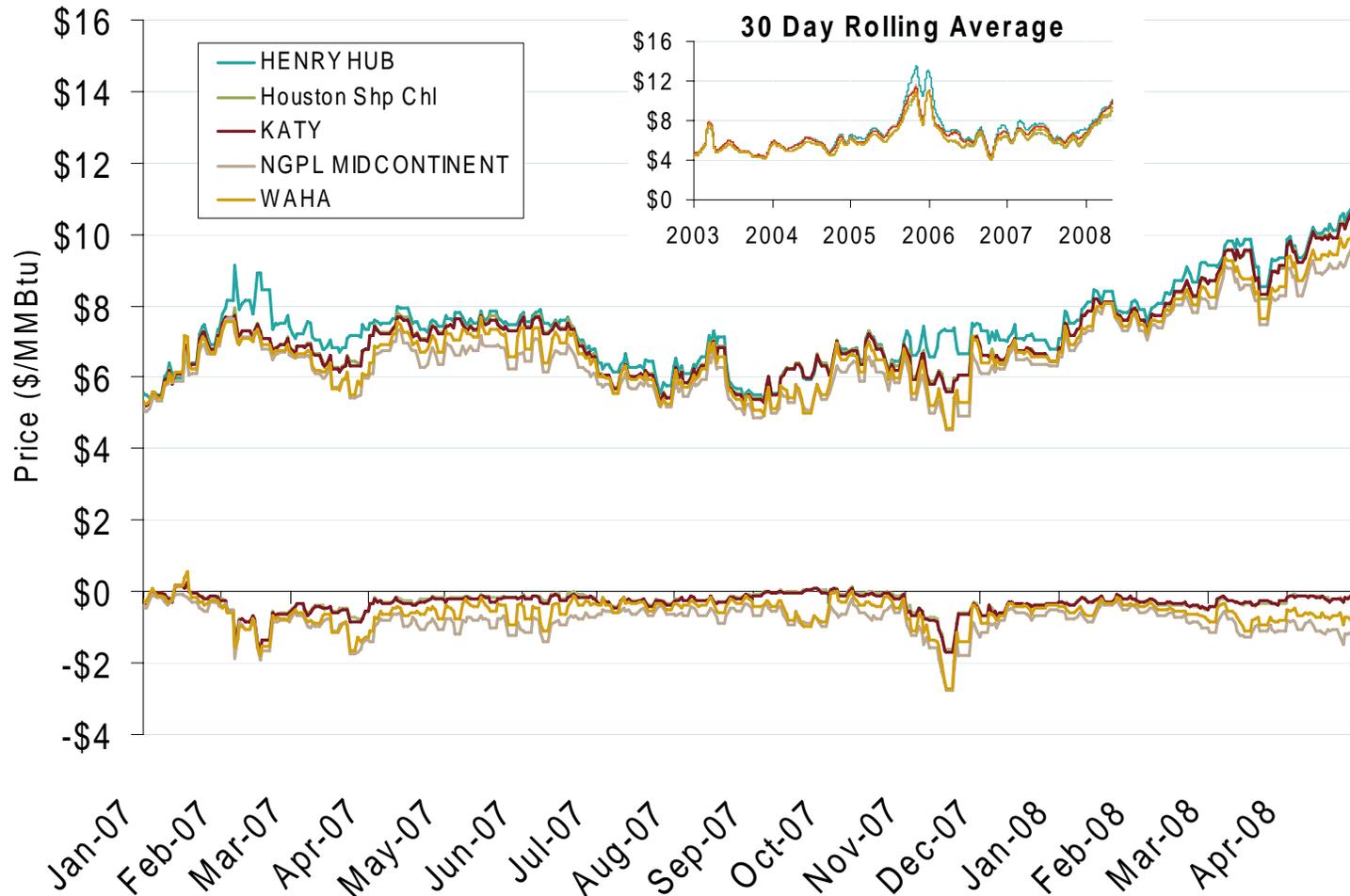
Midwestern Day-Ahead Hub Spot Prices and Basis



Source: Derived from Platts data.

Updated April 4, 2008 2016

South Central Day-Ahead Hub Spot Prices and Basis

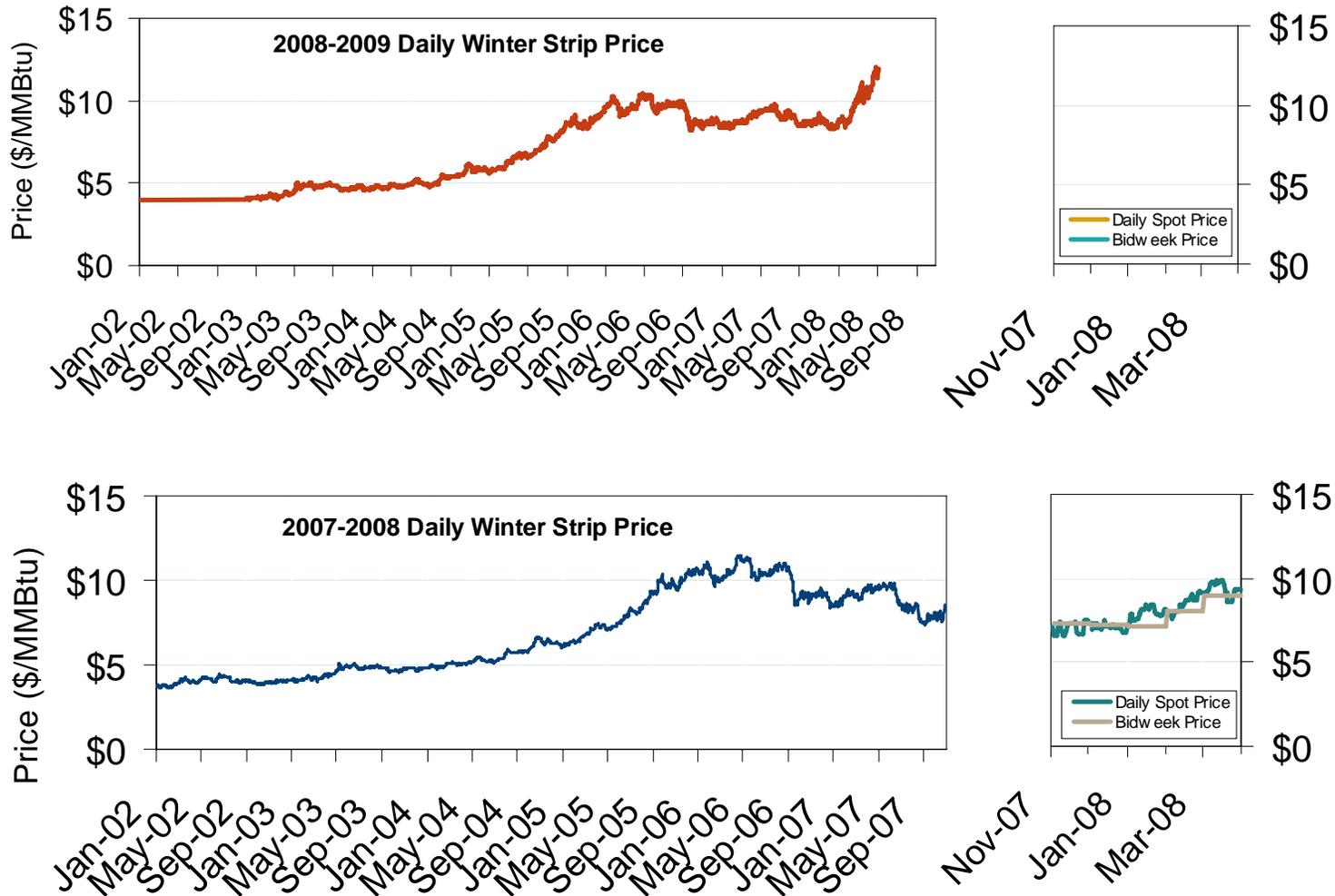


Source: Derived from *Platts* data.

Updated May 6, 2008

2044

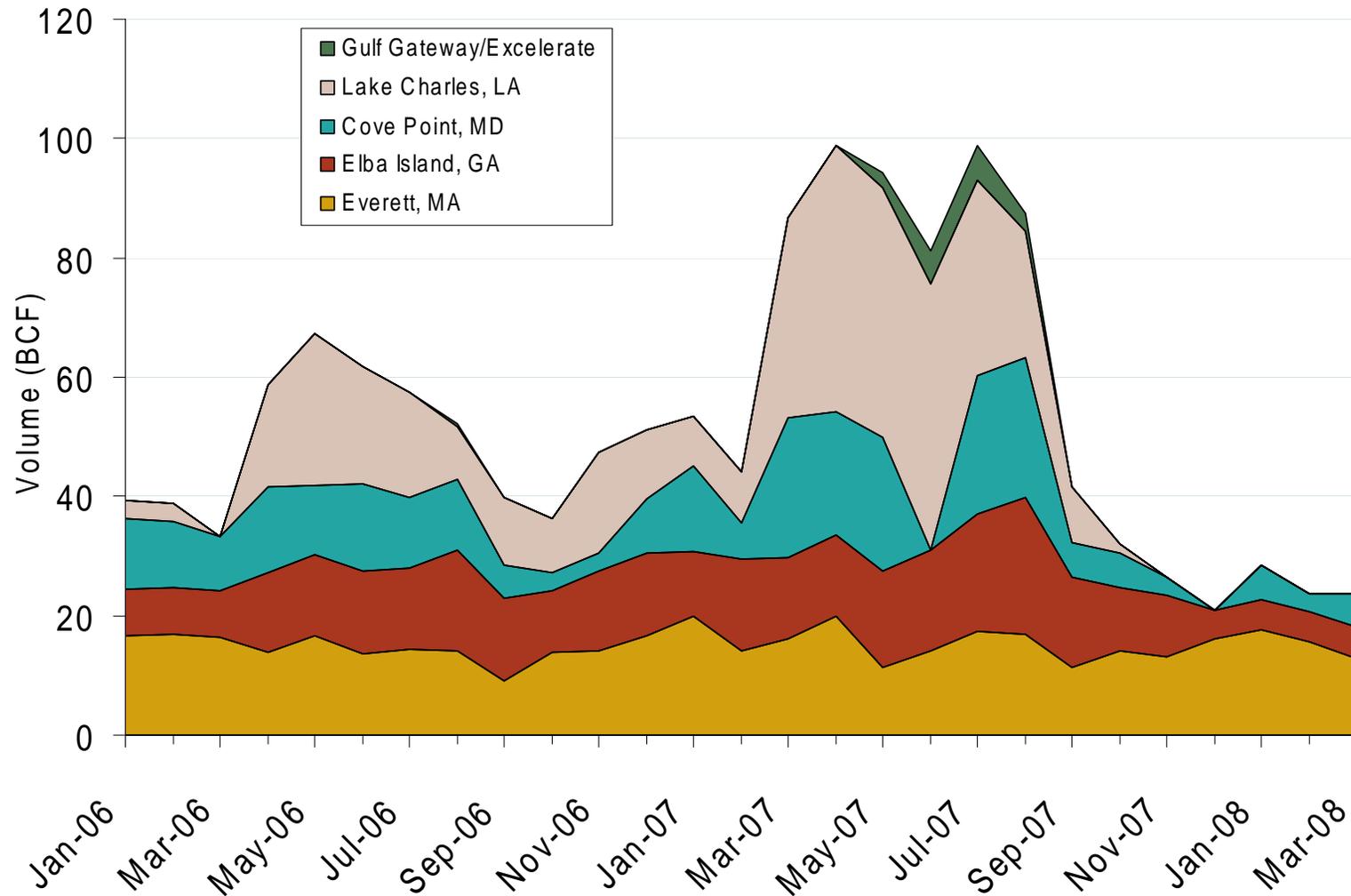
Natural Gas Winter Futures Strip and Daily Henry Hub Spot and Bidweek Prices



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

Updated May 6, 2008

Monthly Gas Imports at Existing U.S. LNG Facilities

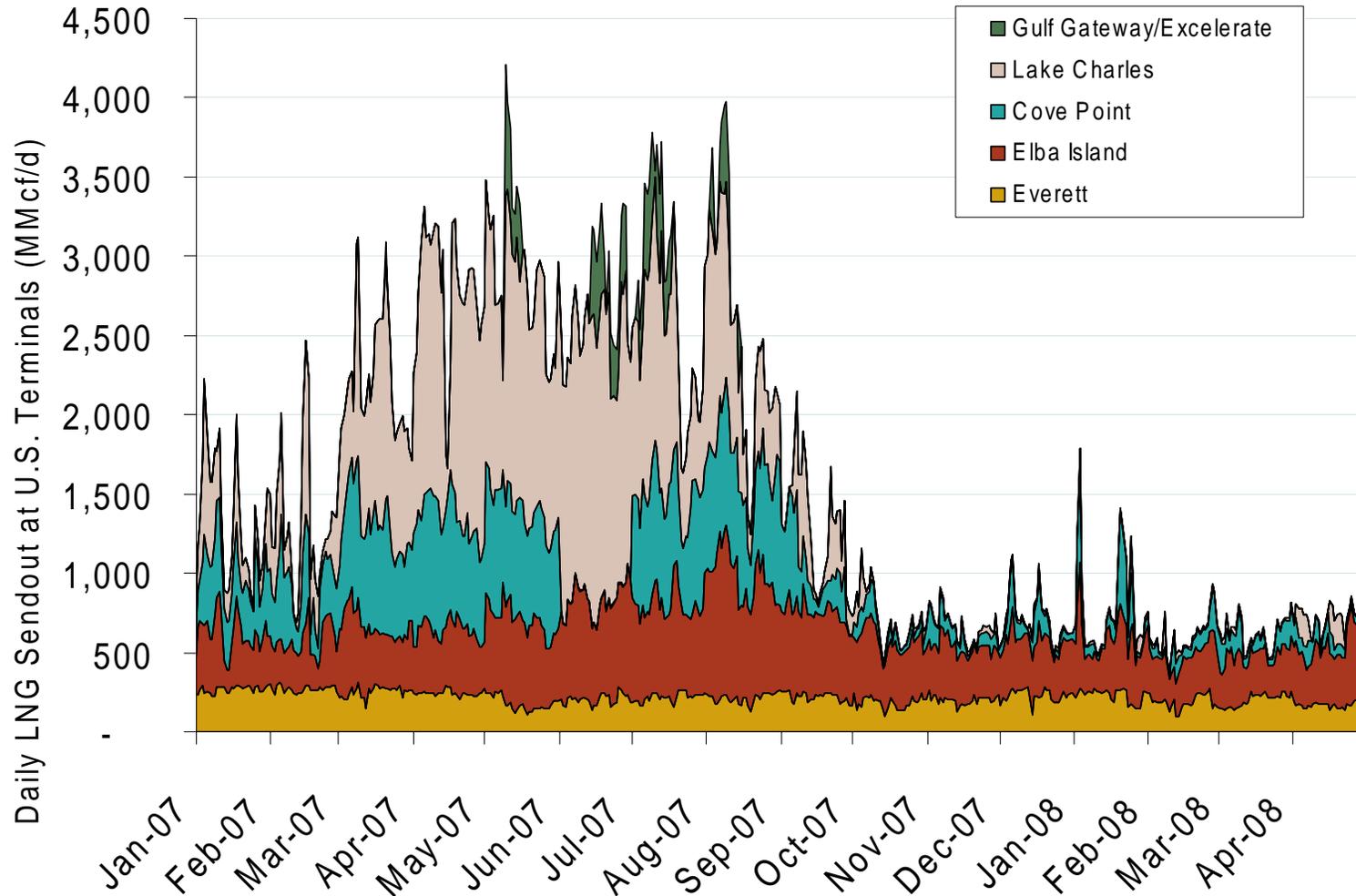


Source: Derived from EIA data.

Updated May 6, 2008

3014

Daily Gas Sendout from Existing U.S. LNG Facilities

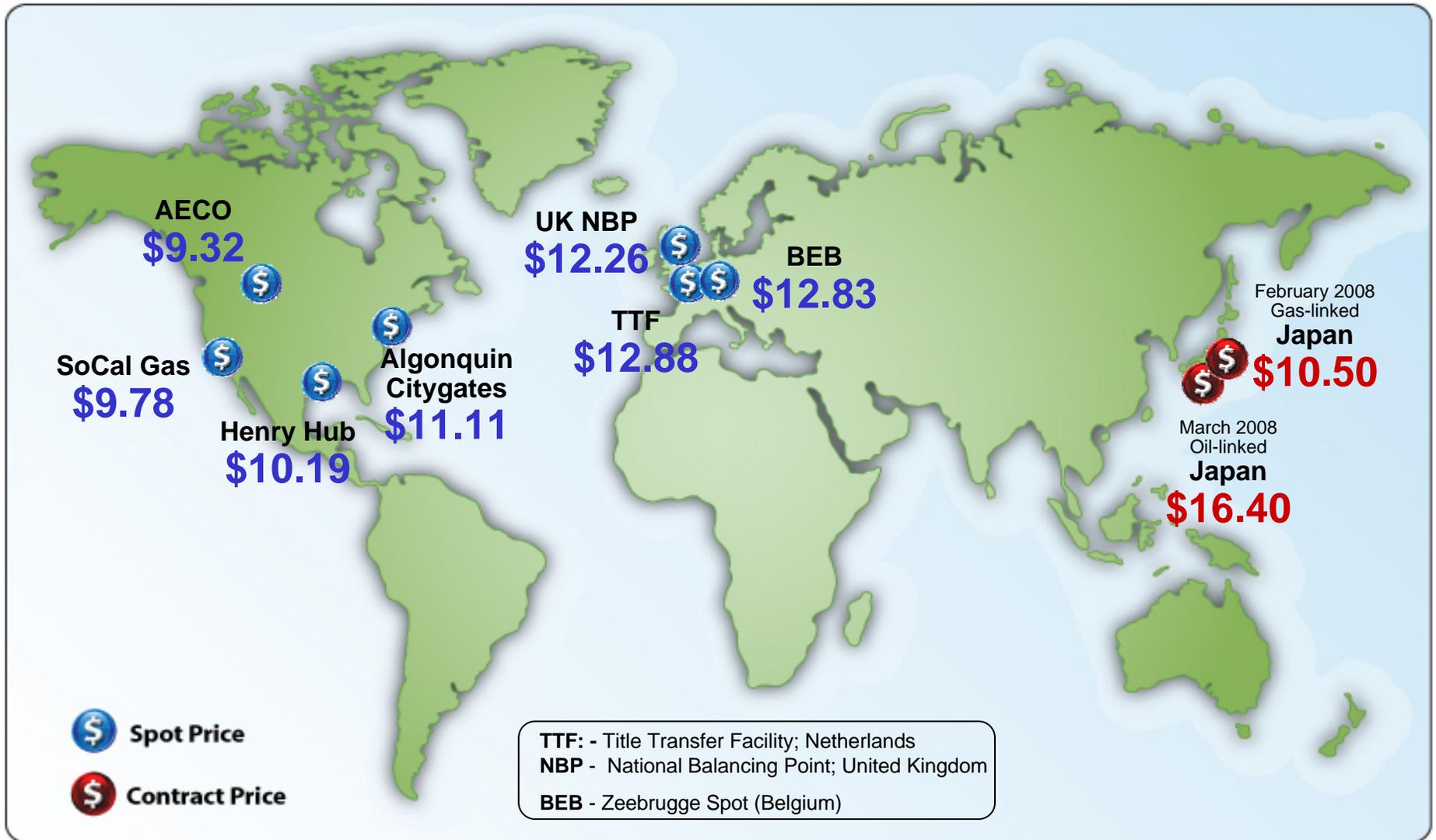


Source: Derived from *Bentek* data. Excludes Everett LNG delivered via truck and consumed by the Mystic plant.

Updated May 6, 2008

3007

World Natural Gas Prices for April 2008

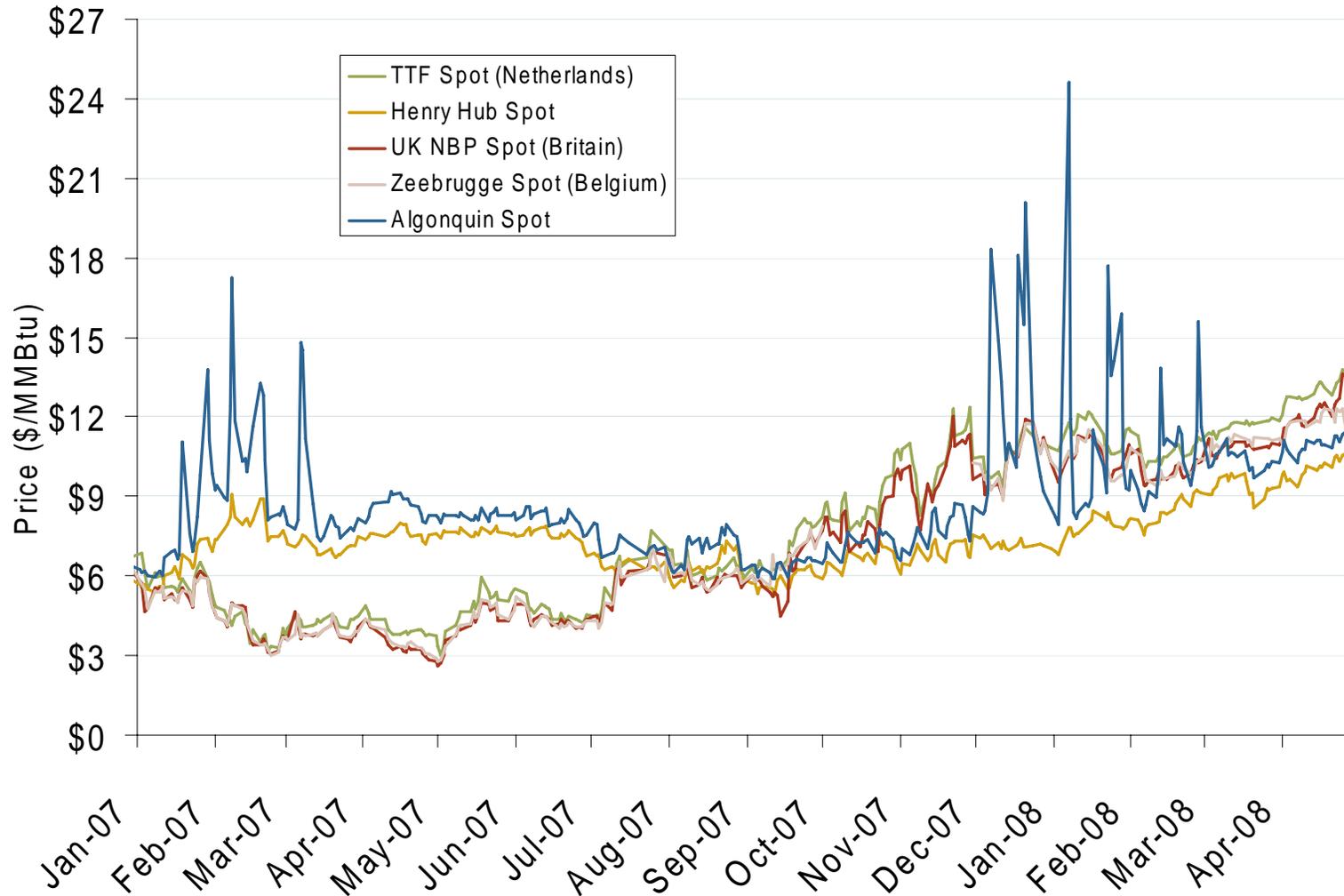


Source: Derived from *Bloomberg, ICE, ICAP and LNG Japan Corp.* data. Spot Price is a monthly average of daily prices. Contract Price is a monthly price. All prices in \$US/MMBtu.

Updated May 6, 2008

3017

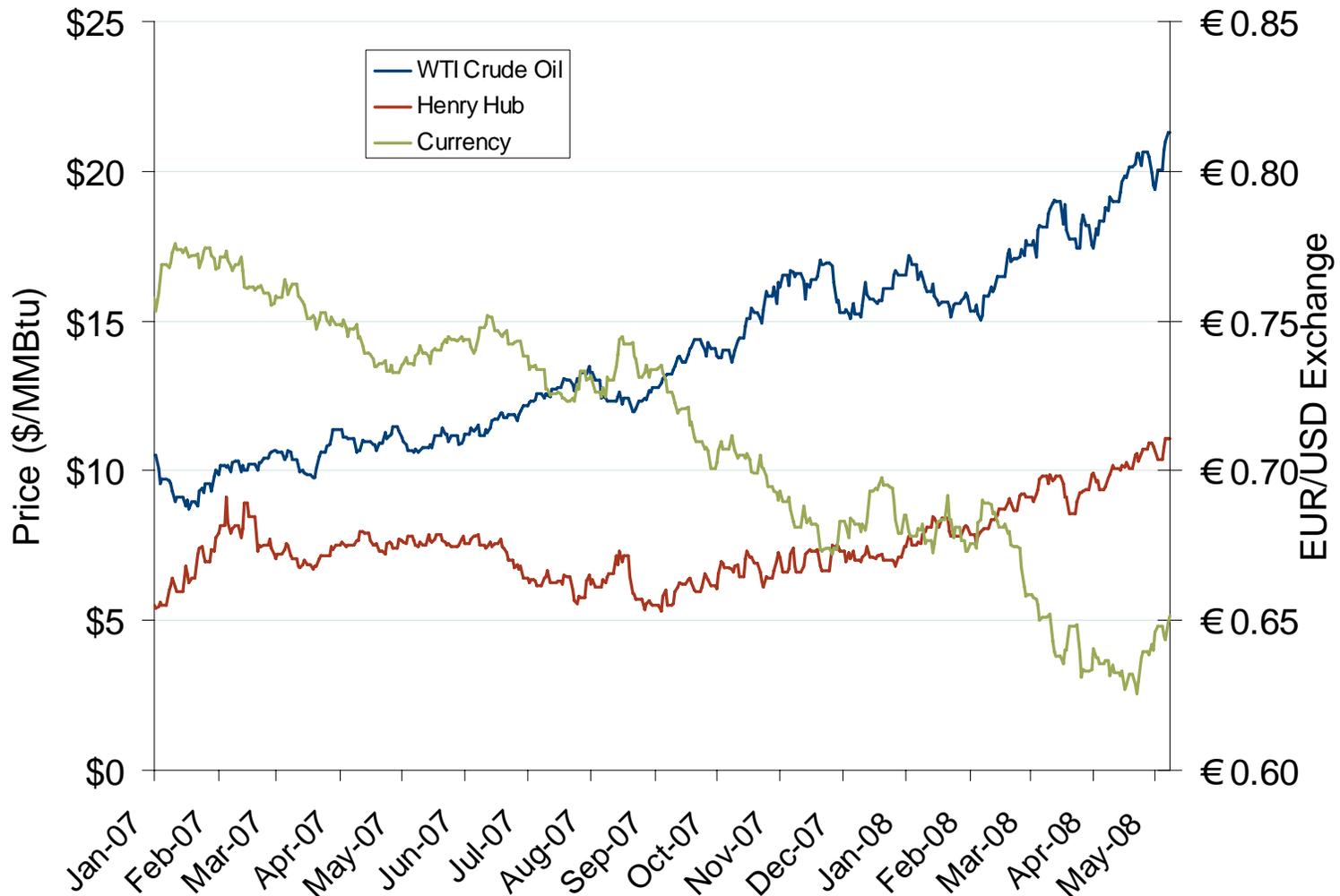
Atlantic Basin European and US Spot Natural Gas Prices



Source: Derived from *Bloomberg* and *ICE* data.

Updated May 6, 2008
3008

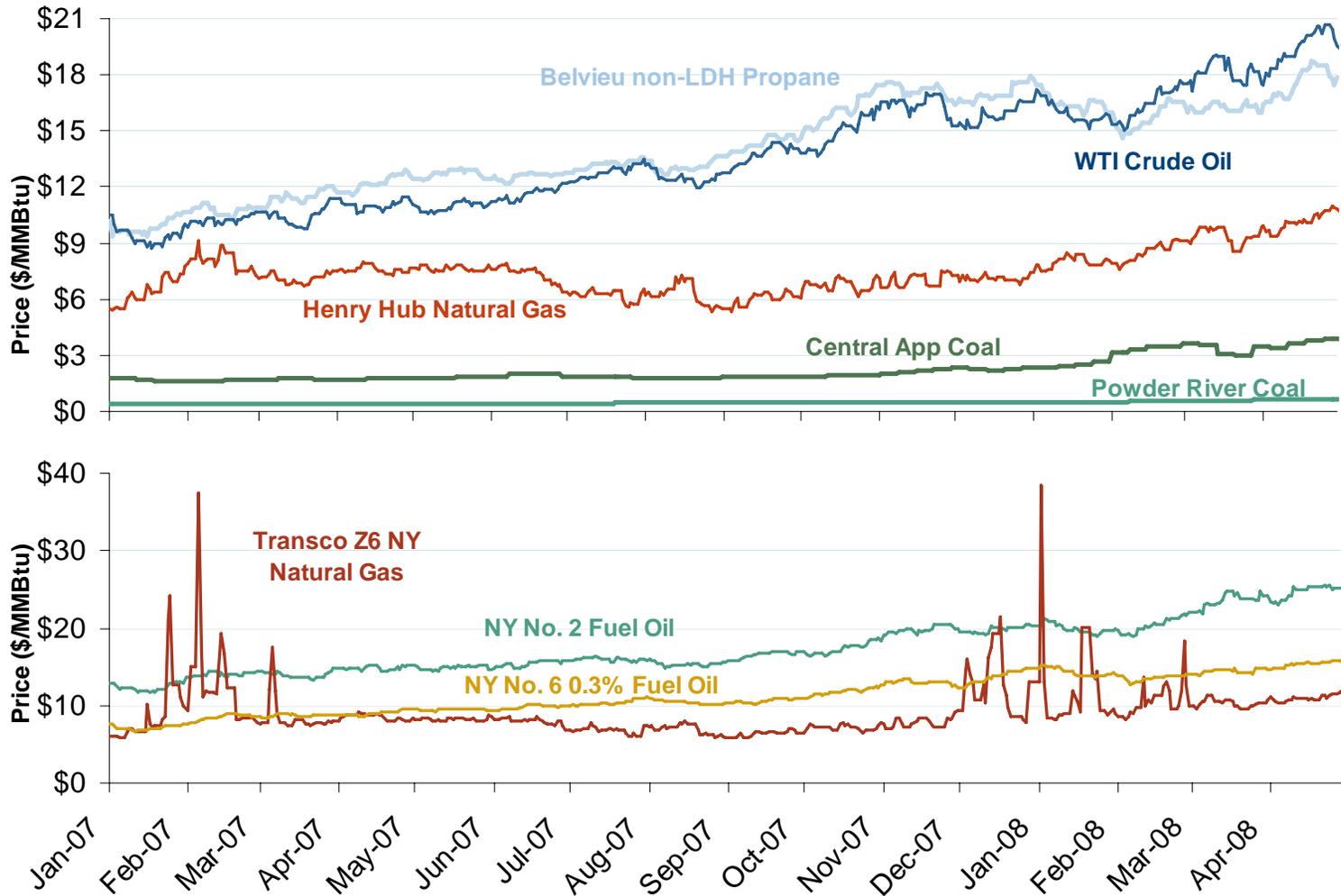
Oil, Natural Gas and Currency Spot Prices



Source: Derived from *Bloomberg* data.

Updated May 6, 2008

Oil, Coal, Natural Gas and Propane Daily Spot Prices



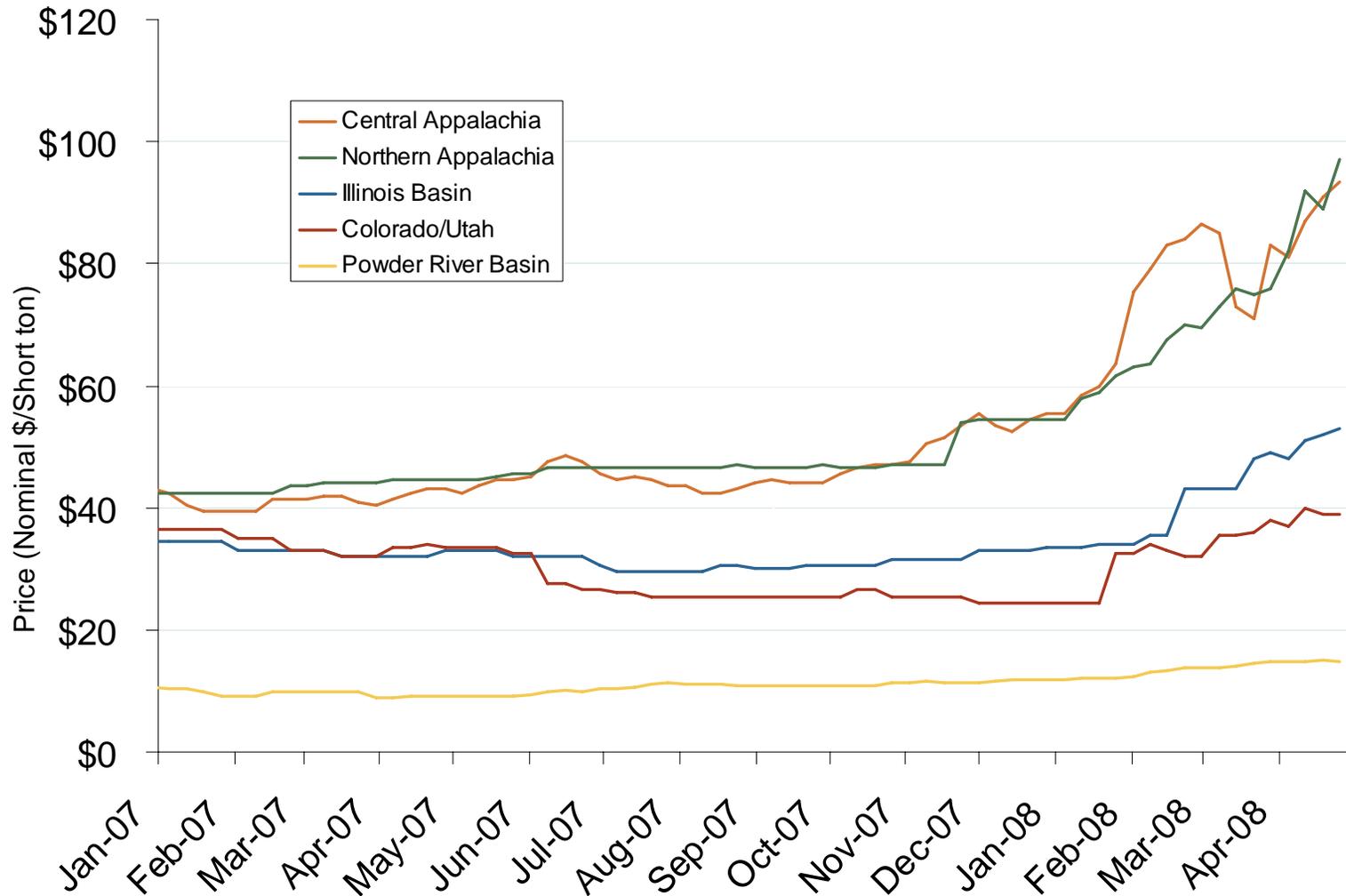
Source: Derived from ICE and Bloomberg data.

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.

Updated May 6, 2008

3001

Regional Coal Spot Prices

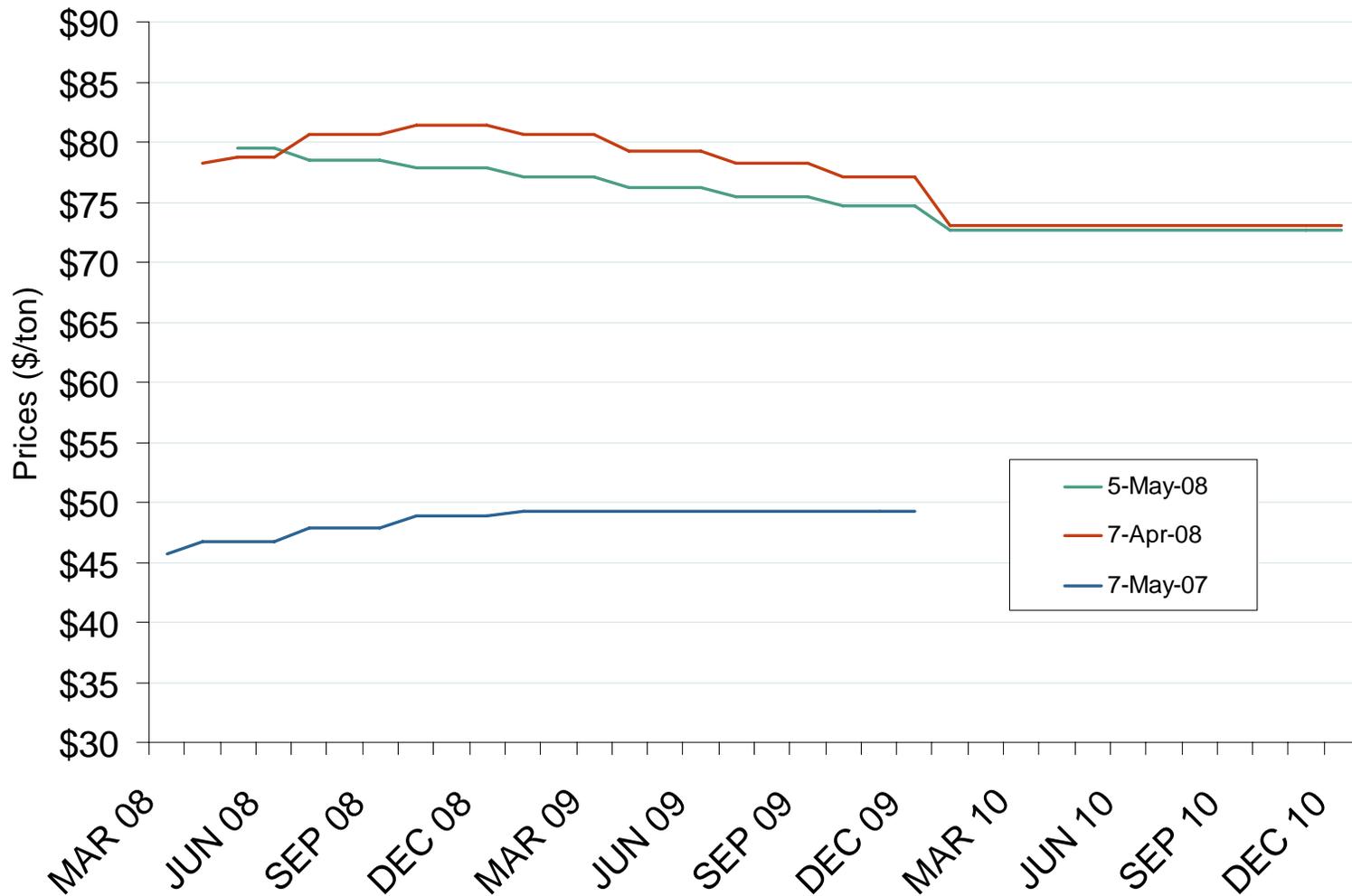


Note: Does not reflect the delivered price of coal; excludes incremental cost of emissions allowances.

Source: Derived from *Bloomberg* data.

Updated May 6, 2008
3002

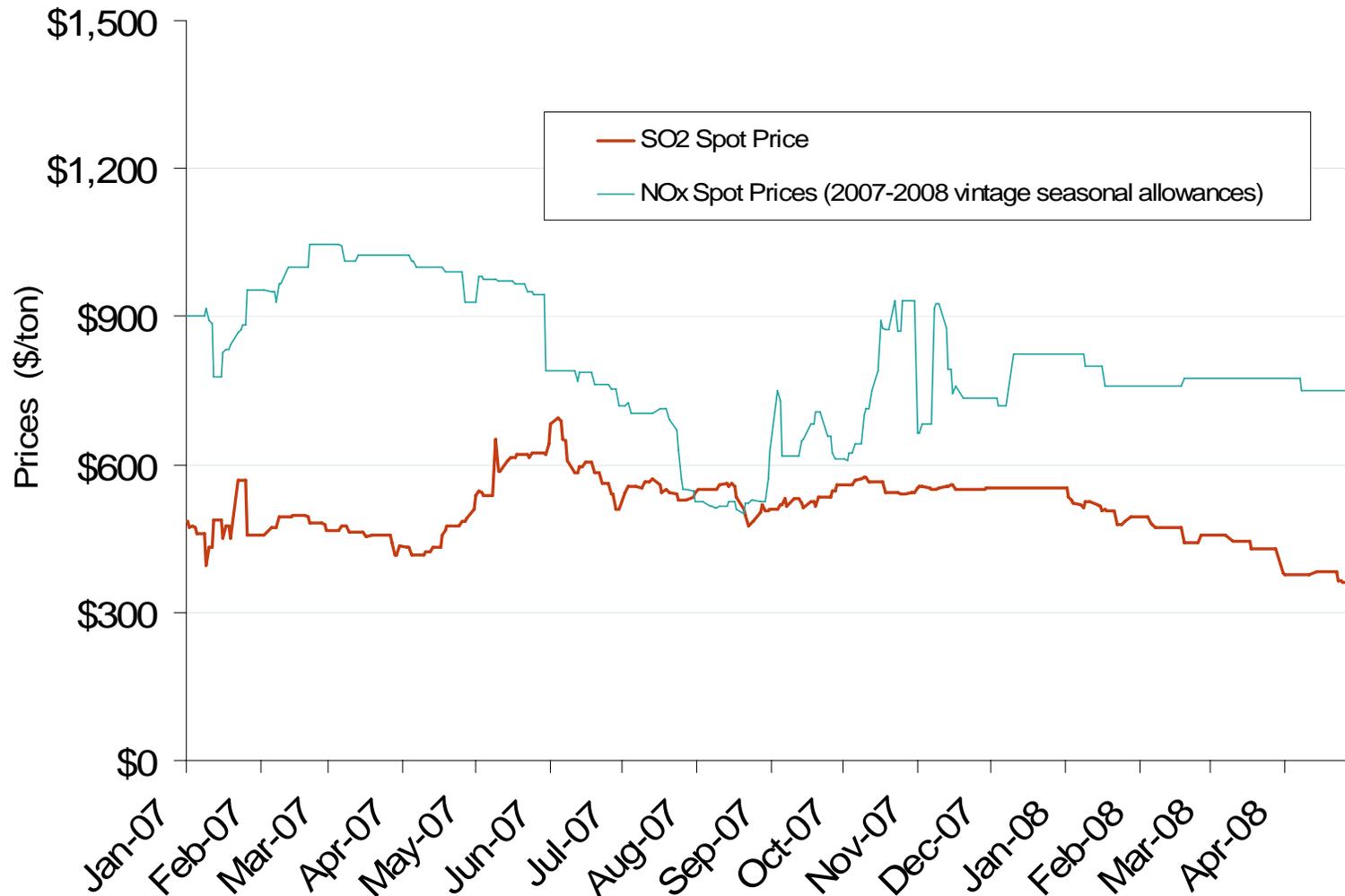
Central Appalachian Coal Futures Prices



Source: Derived from Nymex data.

Updated May 6, 2008
3003

SO₂ Allowance Spot Prices and NOx Seasonal Allowance Spot Prices

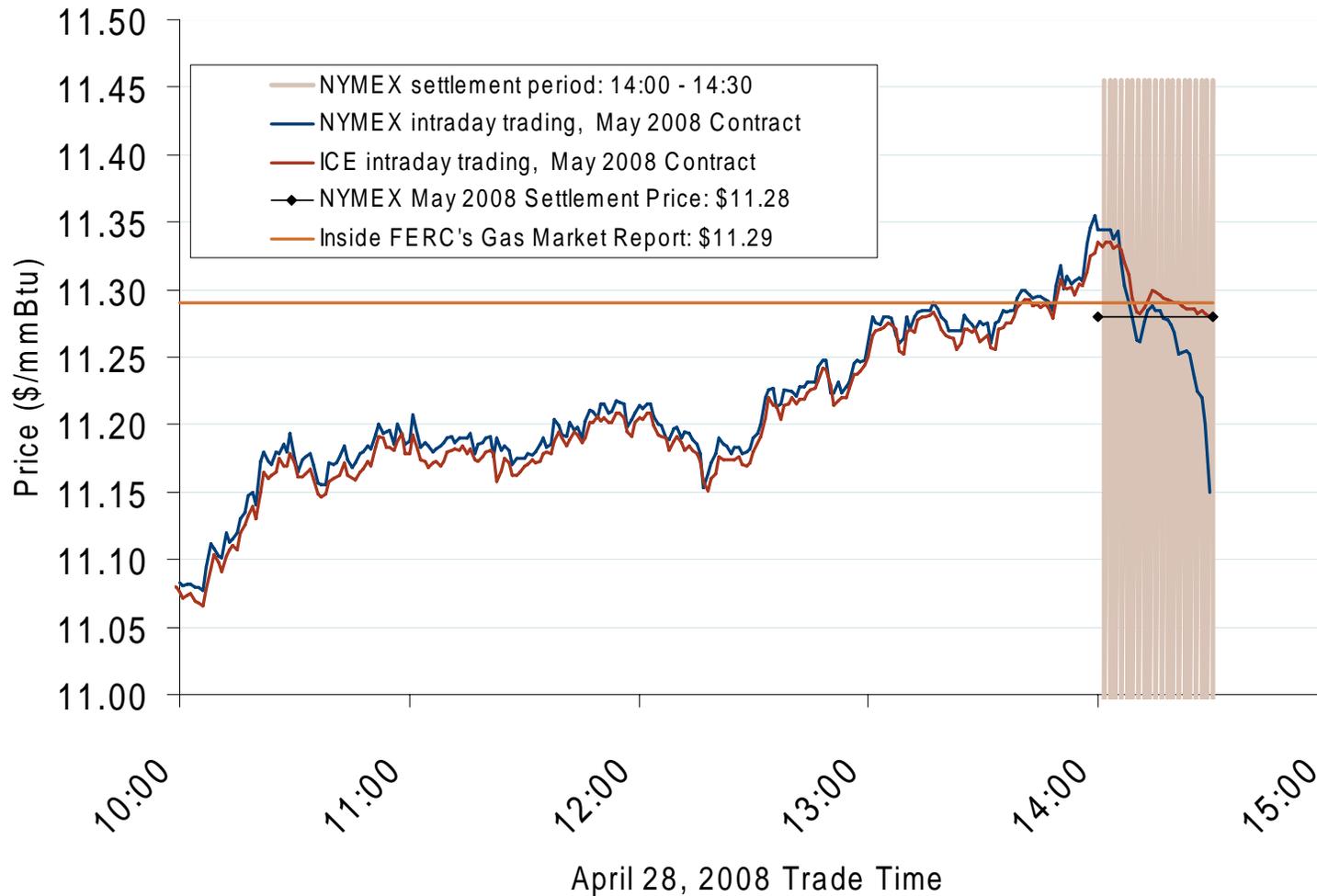


Source: Derived from Cantor Fitzgerald data.

See notes on following pages.

Updated May 6, 2008
3004

May 2008 NYMEX and ICE Contract Final Settlement Day

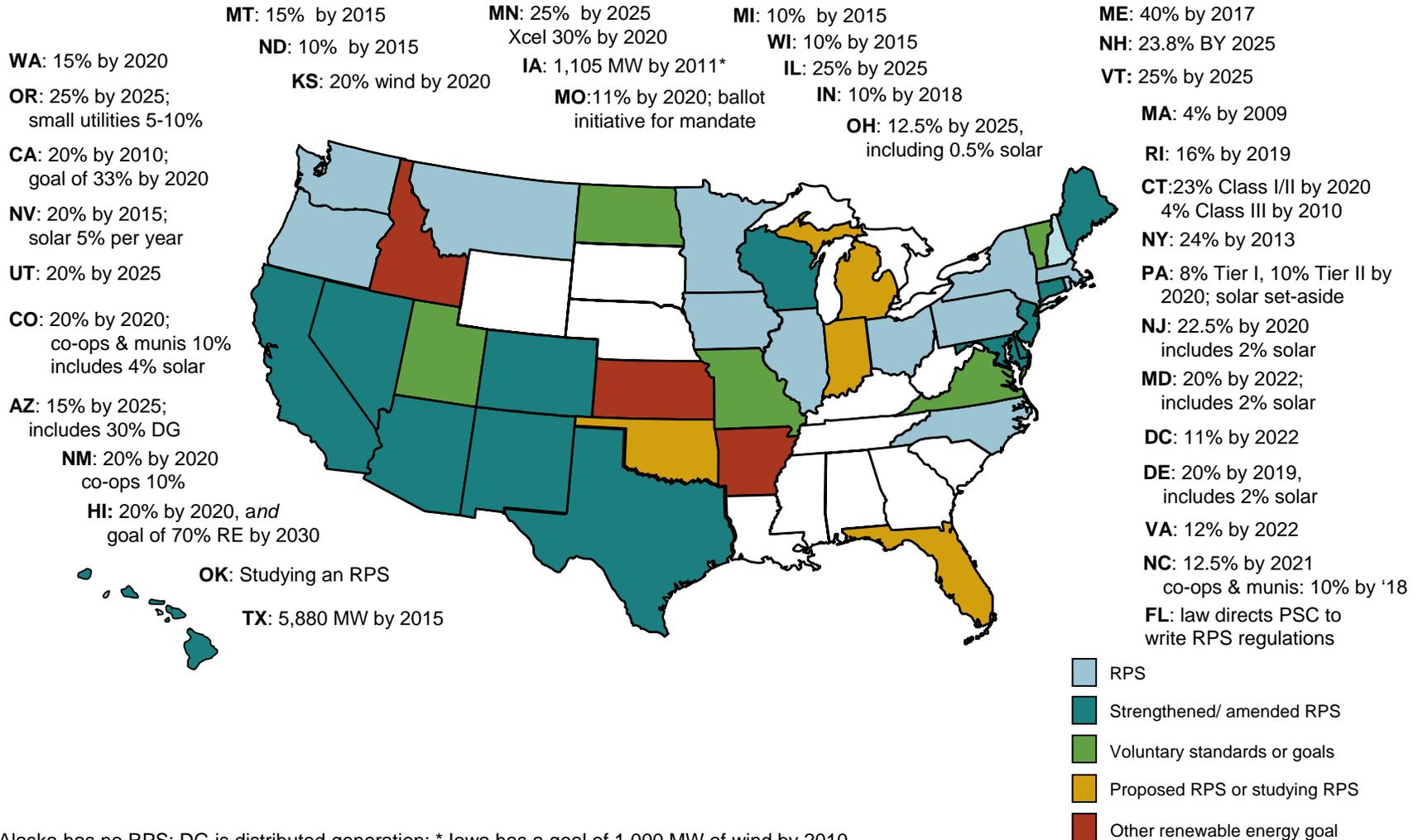


See 2003-2007 historical monthly final settlement day charts.

Source: Derived from Nymex and ICE data.

Updated May 5, 2008

Renewable Energy Portfolio Standards (RPS)



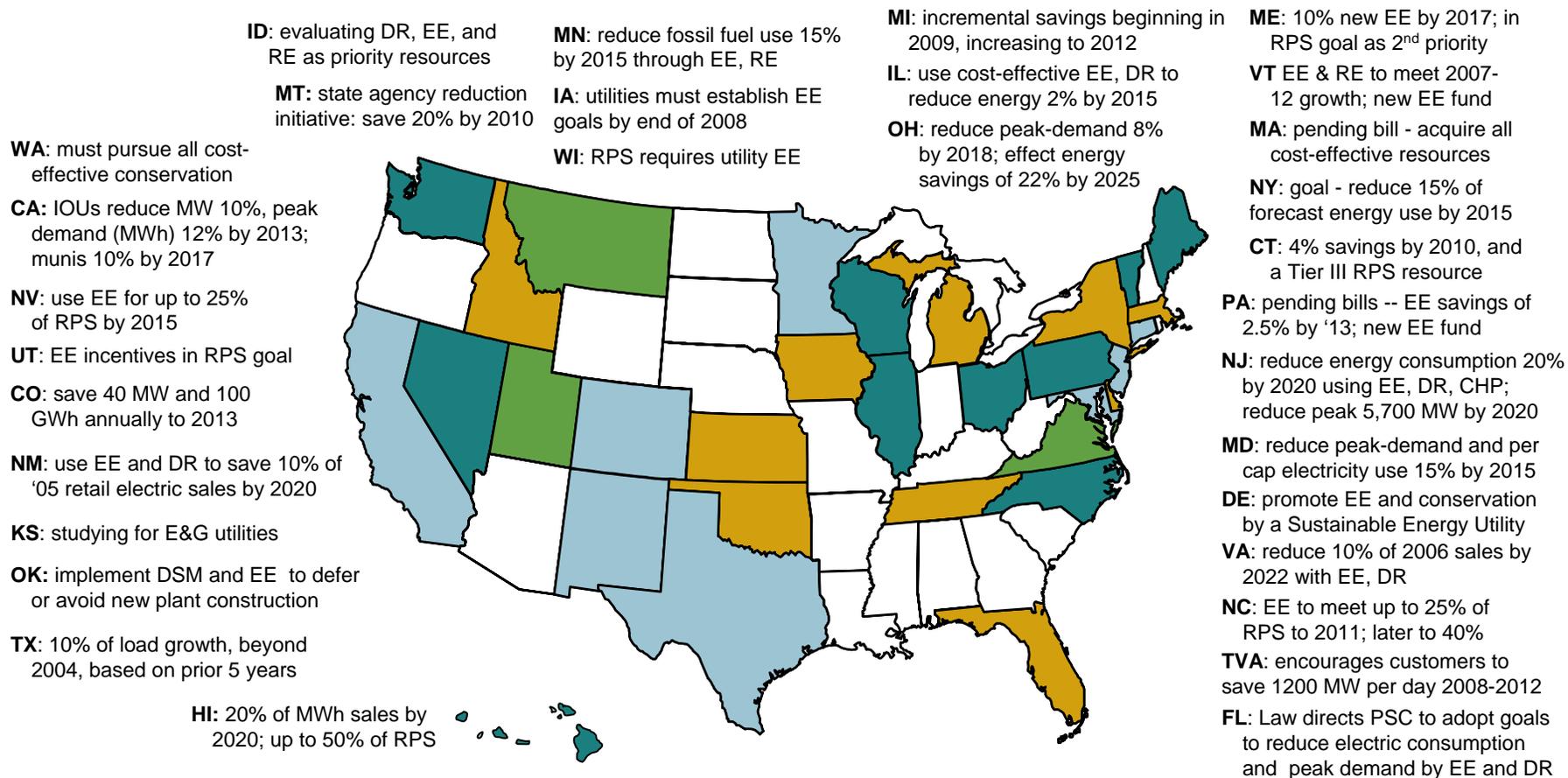
Notes: Alaska has no RPS; DG is distributed generation; * Iowa has a goal of 1,000 MW of wind by 2010
Sources: Derived from data in: EEI, EIA, LBNL, PUCs, State legislative tracking services, Database of State Incentives for Renewables and Efficiency, and the Union of Concerned Scientists.

Updated May 15, 2008

Renewable Energy Portfolio Standards

- A Renewable Portfolio Standard (RPS) requires a percent of energy sales or installed capacity to come from renewable resources.
- **27** states and D.C. have renewable energy standards.
 - **Ohio's** energy bill created an advanced energy requirement of 25% by 2025. At least half of the requirement should be met with renewable energy, with at least half of that cited in Ohio. There is a solar requirement which peaks at one-half percent in 2025.
 - **Florida's** Energy Act directs the Public Service Commission to adopt rules for an RPS, including provision for renewable energy credits and trading. The rules are due to the legislature by February 2009 to be ratified. The law did not specify a target percent or an ending year.
 - **New Jersey** issued its draft Energy Master Plan for public comment. Among the action items to strengthen its RPS and increase its use of renewables are: transitioning the solar program to a fiscally responsible market; developing offshore (1,000 MW) and onshore (200 MW) wind; increasing use of biofuels and biomass; and extending its 22.5% RPS goal to 2025.
- **Five** states have enacted renewable goals without financial penalties.
- Thirteen states include energy efficiency in their RPS or renewable goals; more are considering energy efficiency additions or companion bills.
- Twenty-one generation and transmission co-operatives formed a National Renewable Cooperative Organization (NRCO) to aggregate the needs of co-ops to buy and build renewable energy. Many co-ops have obligations to meet RPS targets in their states, but are also in the midst of renewable-rich areas that cannot get those resources to urban load centers. Its Board called on Congress to do more to make it possible to build (renewable) transmission lines.
- The Western Governor's Association, which covers 19 states, launched a project to identify common transmission needs and potential transmission costs to spur regional renewable energy resource development with Western Renewable Energy Zones (WREZ). Similar renewable transmission zones have been identified in Texas to bring renewable generation from remote areas to load centers.

Energy Efficiency Resource Standards (EERS)



Abbreviations: CHP – Combined heat & power; DR - demand response; DSM - demand side management; EE - energy efficiency; E&G: electric and gas utilities; RPS: Renewable Portfolio Standard
Sources: ACEEE, EPA, Regulatory Assistance Project, Union of Concerned Scientists, State legislative sites, trade press

- EERS by regulation or law (separate from RPS)
- Energy efficiency part of an RPS rule or goal
- Voluntary standards (in or out of RPS)
- Energy efficiency goal proposed / being studied

Energy Efficiency Resource Standards (EERS)

- An energy efficiency resource - or portfolio - standard (EERS) aims to reduce or flatten electric load growth through energy efficiency measures.
- Goals may specify reductions in energy (MWh), demand (MW), or both.
- Twenty states have energy efficiency standards or goals; thirteen include energy efficiency as part of a renewable portfolio standard or goal.
 - Five states added an EERS in 2007: Minnesota, Virginia, North Carolina, Connecticut, and Illinois.
 - States that enacted significant energy efficiency legislation (standards or goals) in 2008 include: New Mexico, Vermont, Maryland, Utah, Ohio, Florida, and New Jersey.
- At least fourteen states include demand response as a means to reduce consumption or peak load, including: CA, FL, ID, IL, ME, MD, NJ, NM, OH, OK, PA, UT, VA, and VT.
- A dozen states have successfully used decoupling mechanisms for to encourage energy efficiency, mostly for gas distribution utilities. Ohio's law includes decoupling for electric utilities; Maryland approved decoupling in BG&E's rate filing.
- Iowa's Energy Efficiency law (SF 2386) establishes a commission on EE standards and practices. It also directs utilities to establish cost-effective EE goals. They must report these by Jan. 1, 2009.
- Ohio enacted energy efficiency standards as part of its hybrid restructuring bill, SB 221:
 - It set an overall energy reduction goal of at least 22% by the end of 2025
 - It set a 7.75% peak demand reduction requirement for electric distribution utilities by the end of 2018.
 - It advocates revenue decoupling for electric and gas utilities to promote energy efficiency.
- Florida's omnibus energy bill includes multiple measures to promote energy efficiency:
 - the PSC must set goals to increase the efficiency of energy consumption, to reduce growth rates of electric consumption, and to reduce growth of weather-sensitive peak demand.
 - It should also promote cost-effective demand- and supply-side efficiency and conservation programs.
 - It may allow efficiency investments in generation, transmission, and distribution, as well as in customer efficiencies.
 - It may allow IOUs to earn additional return on equity for exceeding EE and conservation goals.