OE ENERGY MARKET SNAPSHOT

Midwest States Version – April 2010 Data

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

Office of Enforcement
Federal Energy Regulatory Commission
May 2010

Special Report:

- **Transmission Capacity Release**
- **Weather and Hurricane Forecast**

Promoting a Competitive Market for Capacity Reassignments

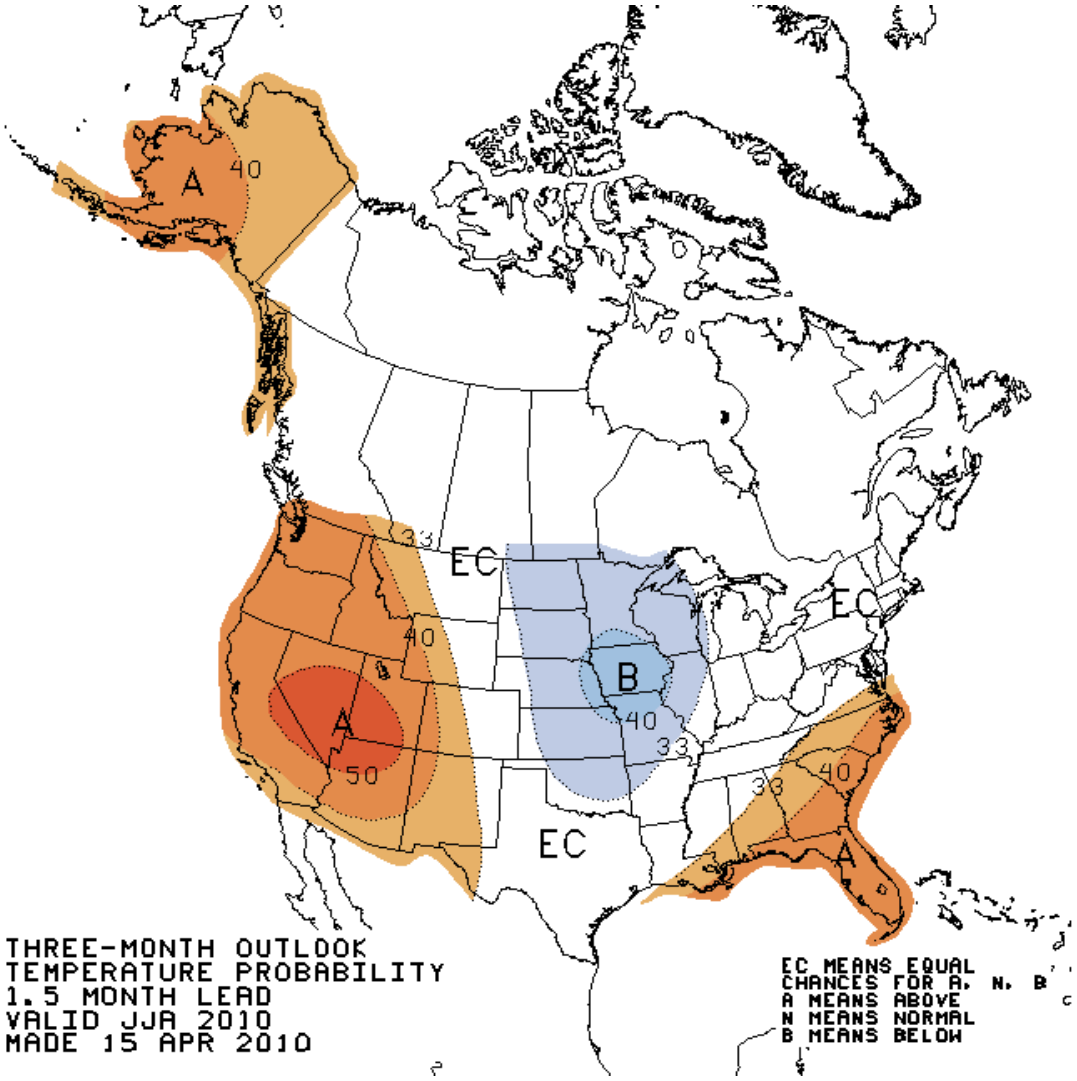
The Commission is seeking comment on a proposal to permanently remove the price cap on transmission capacity reassignments.

- Capacity reassignment refers to the resale of transmission capacity. The original sale from the transmission owner is capped at the tariff rate. Resales were also capped at the tariff rate before Order No. 890 (2007).
- FERC lifted the price cap for a study period May 2007-October 2010.
- Staff report found:
  - 35,000 transactions, 65 TWh reassigned 2007-2009
  - 79% of transactions were on Bonneville Power Administration system
  - All durations represented: hourly, daily, monthly, yearly. Hourly were 97%.
  - 134 transactions priced above the cap, less than 1%
  - No evidence of affiliate preference or abuse by resellers
- Objectives of the final rule are to help parties manage the financial risks associated with their long-term commitments, reduce the market power of transmission providers by enabling customers to compete, and foster efficient capacity allocation

Comments are due June 28, 2010.

Link: http://www.ferc.gov/EventCalendar/Files/20100429155358-RM10-22-000.pdf

Above-Average Summer Temperatures for the West and Southeast



Source: NOAA

Updated May 5, 2010

Forecasters Predicting a Very Active Hurricane Season

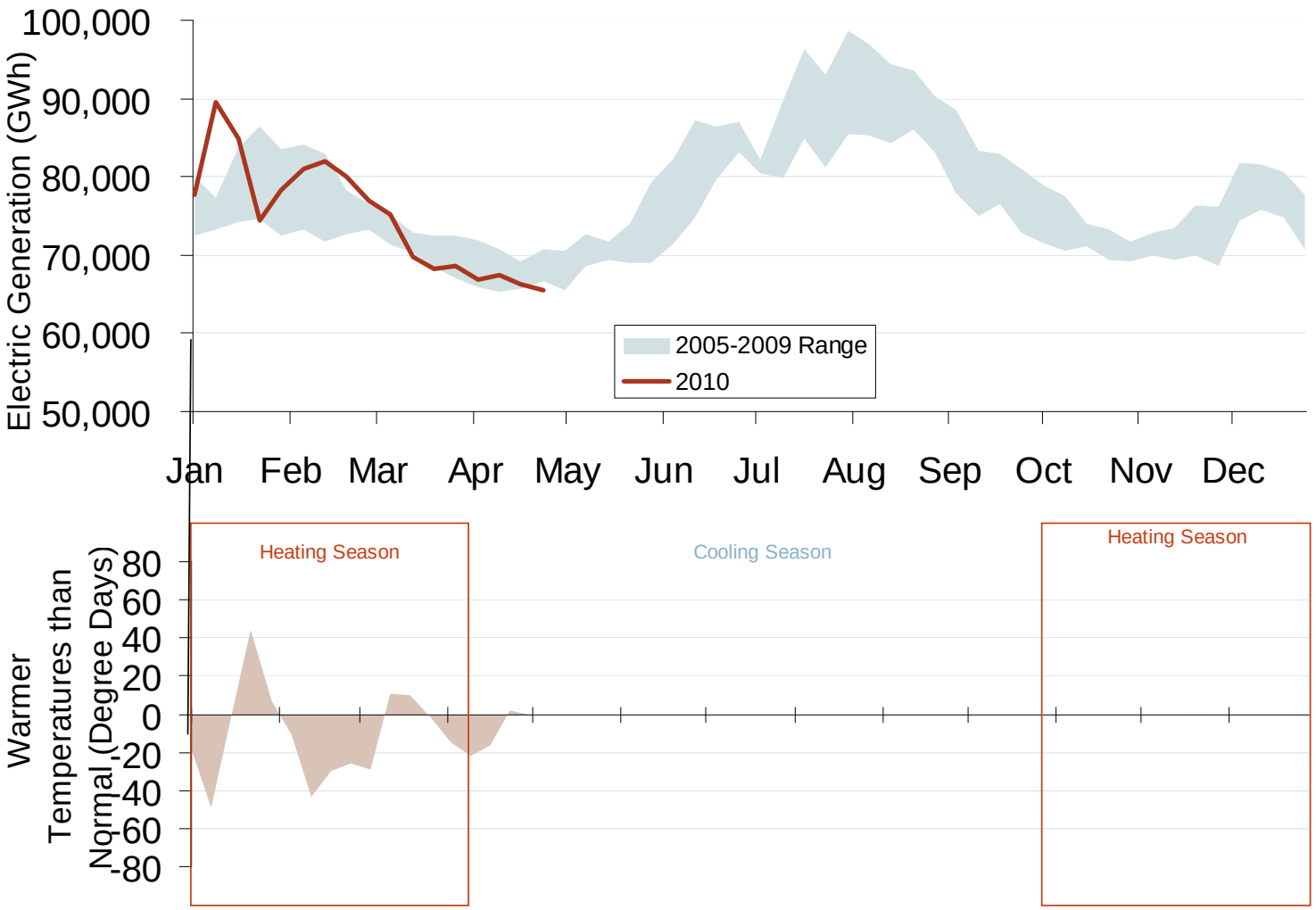
2010 Hurricane Forecasts

	1950-2000 Average	Last Year	NOAA	Earth Sat	CSU	WSI	Accu Weather
Named Storms	10	9		16	15	16	17
Hurricanes	6	3		8	8	9	7
Intense Hurricanes	3	2		5	4	5	5

Updated May 5, 2010

Electricity Markets

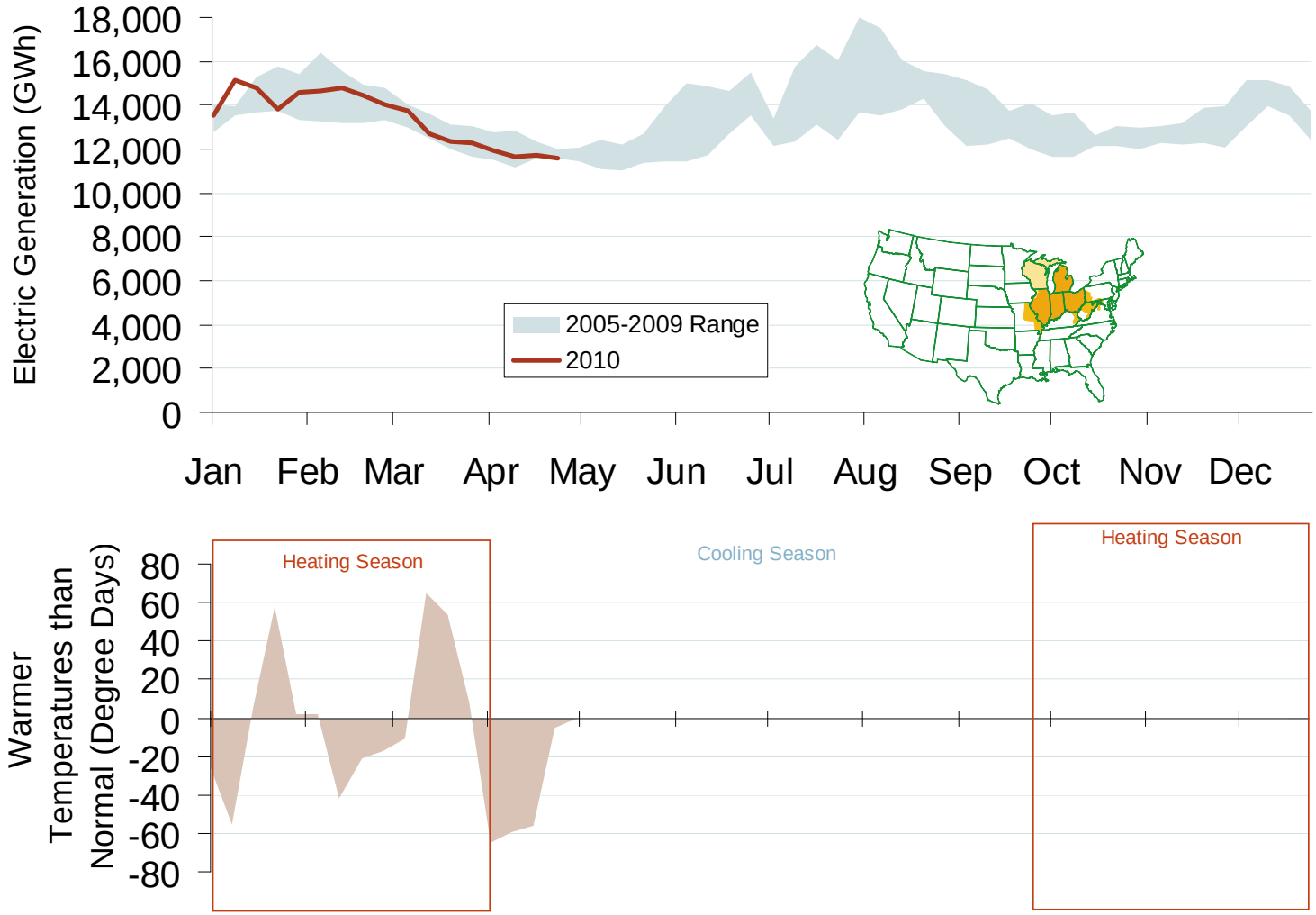
Weekly U.S. Electric Generation Output and Temperatures



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

Updated May 7, 2010

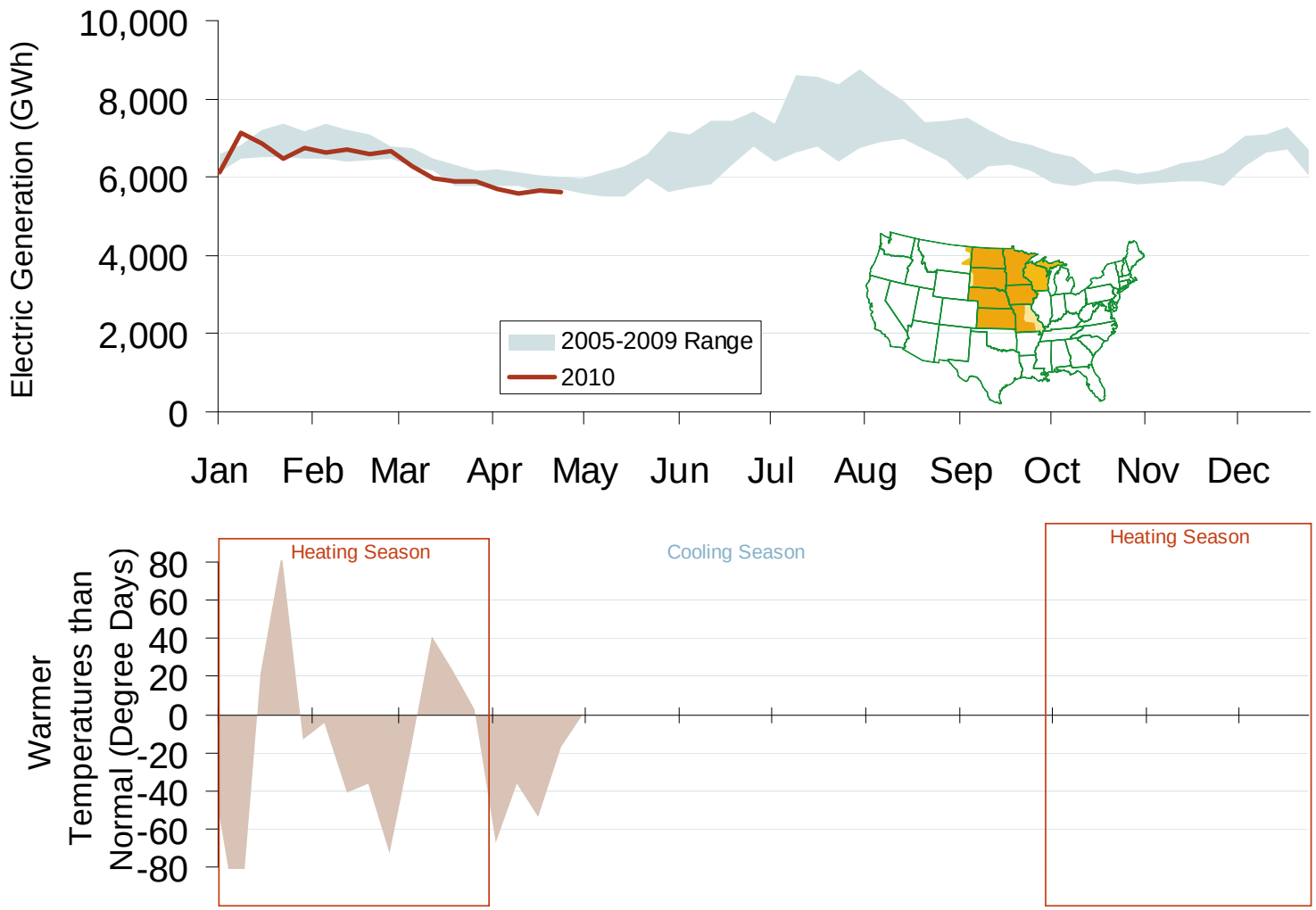
Weekly Electric Generation Output and Temperatures Central Industrial Region



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

Updated May 7, 2010

Weekly Electric Generation Output and Temperatures West Central Region



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

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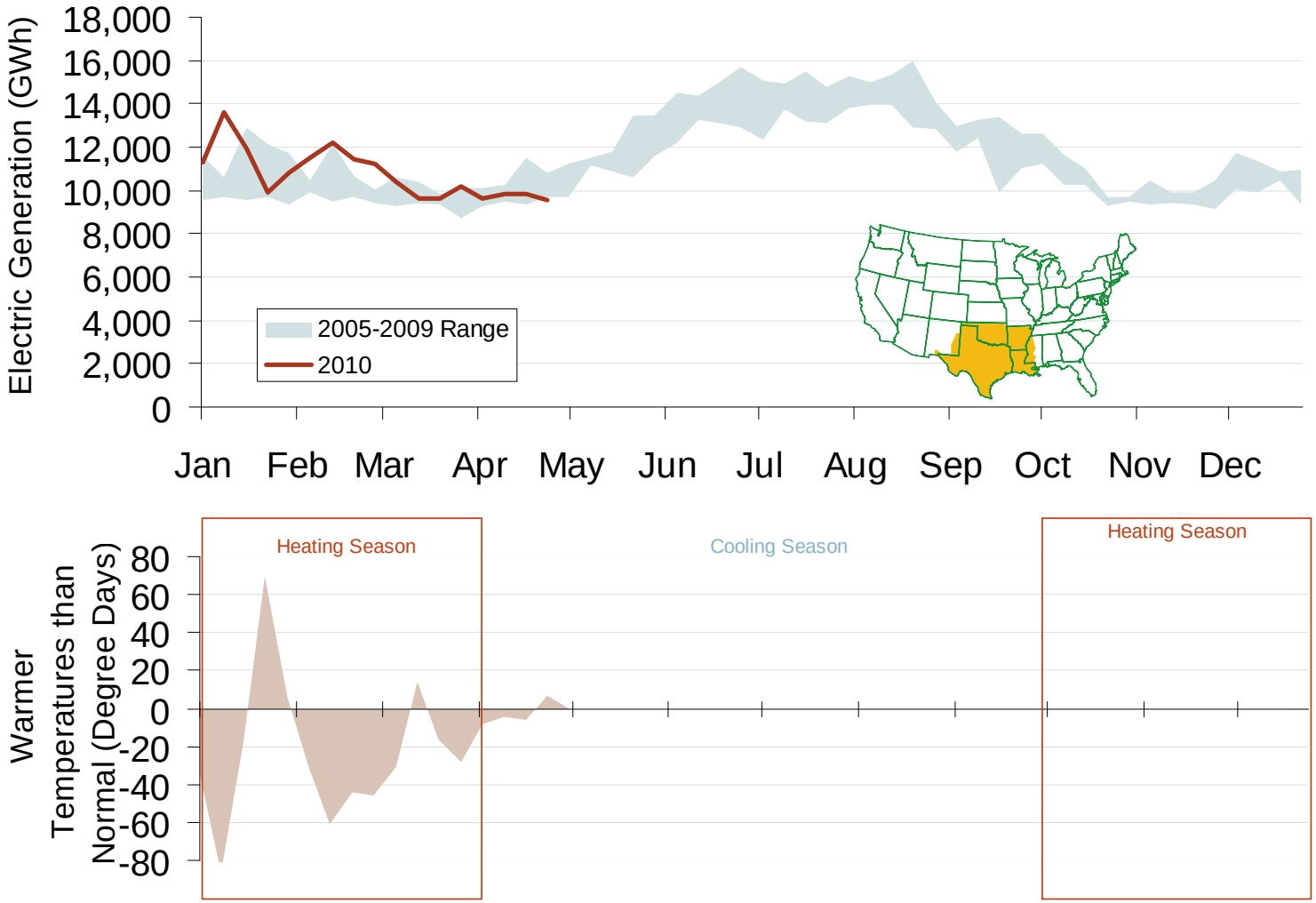
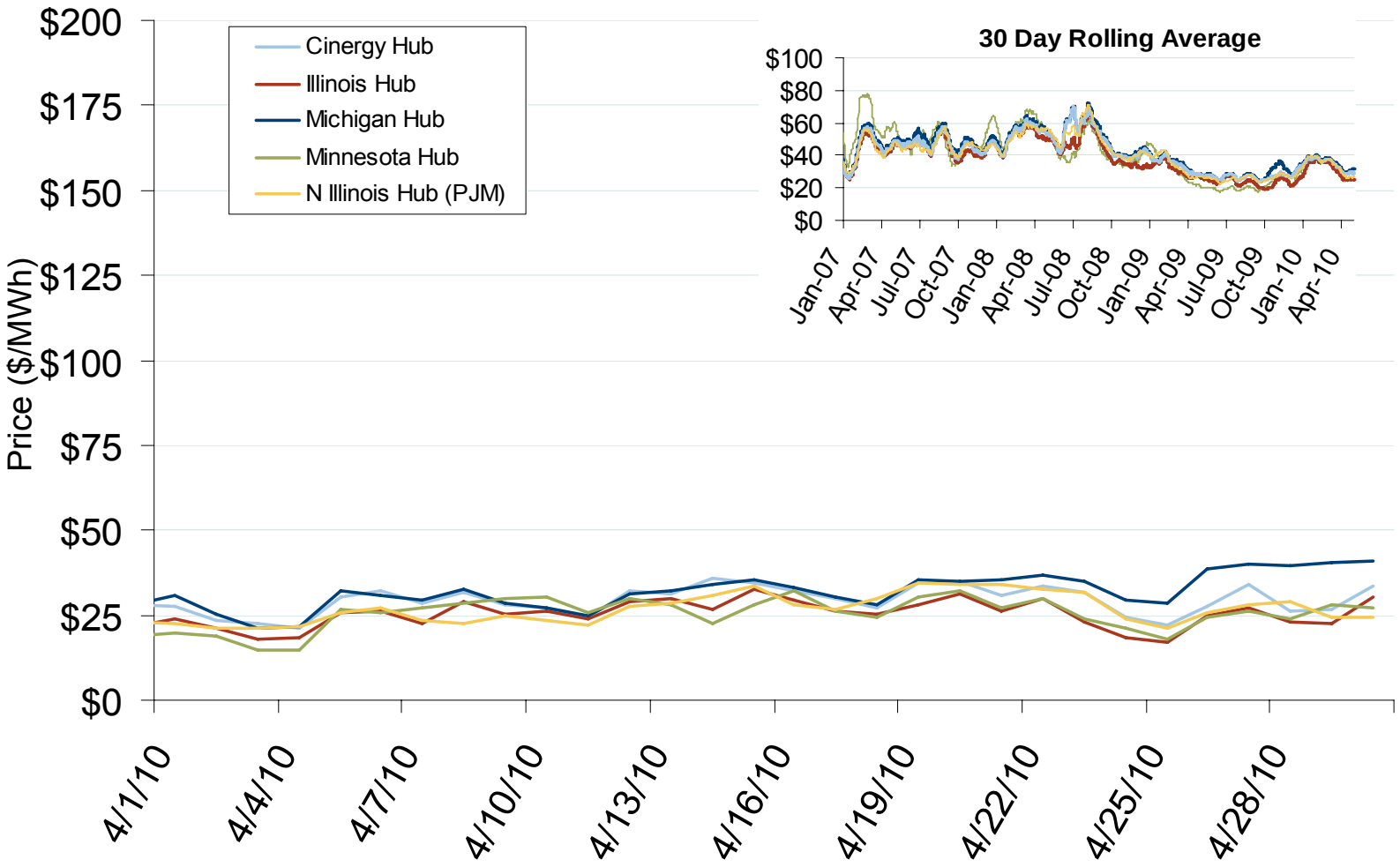
Weekly Electric Generation Output and Temperatures South Central Region



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

Updated May 7, 2010

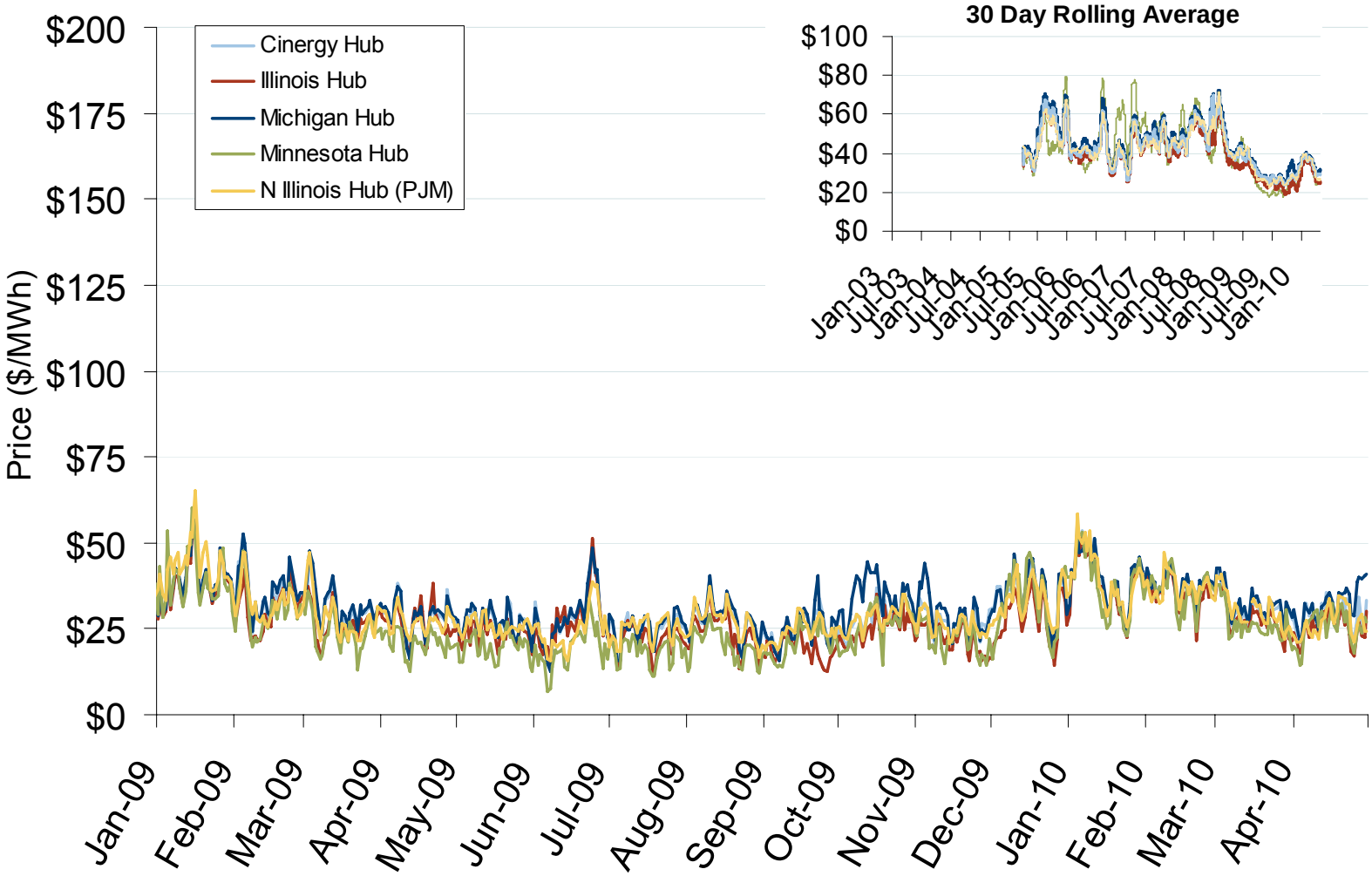
Daily Average of MISO Day-Ahead Prices - All Hours



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

Updated May 7, 2010

Daily Average of MISO Day-Ahead Prices - All Hours



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

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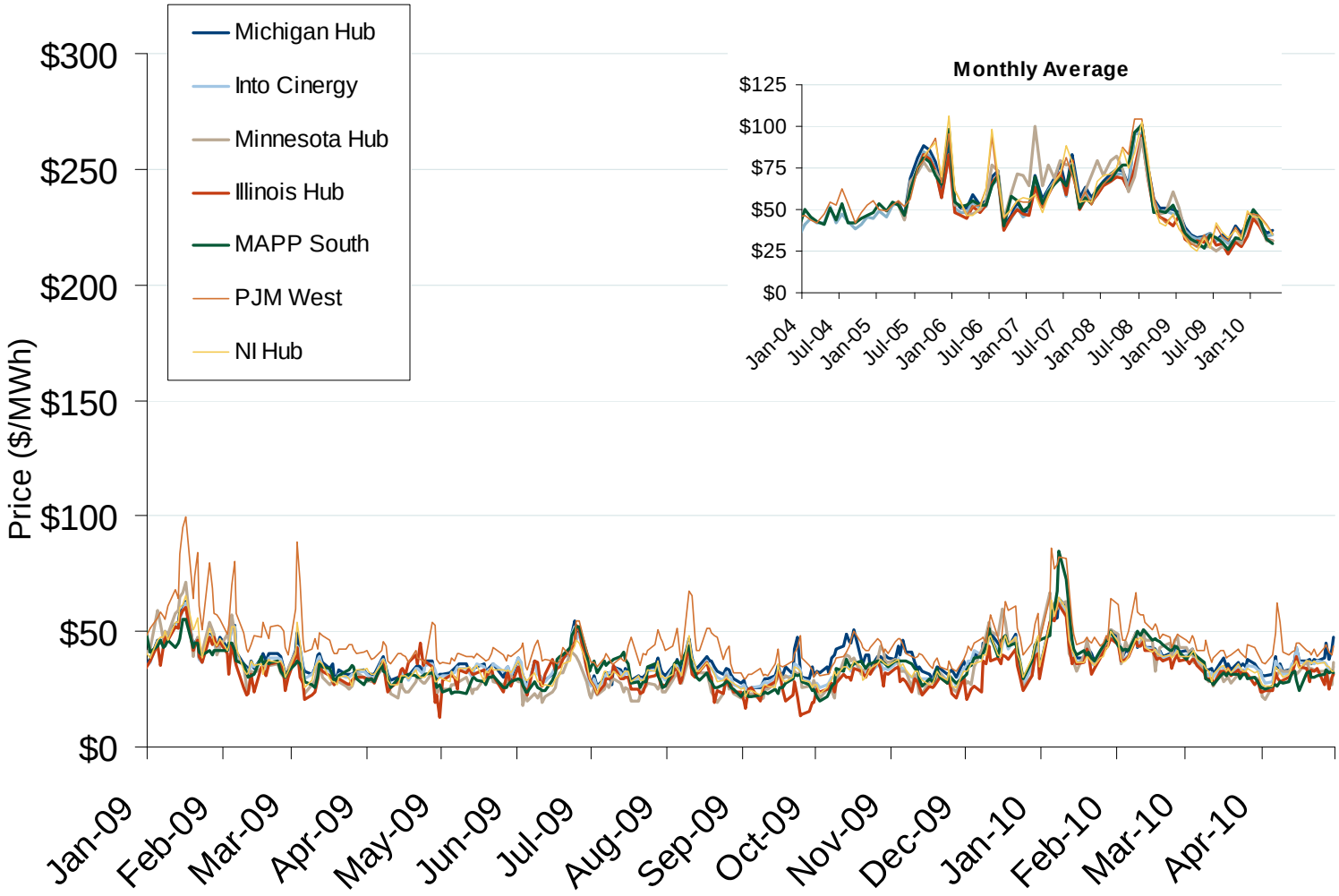
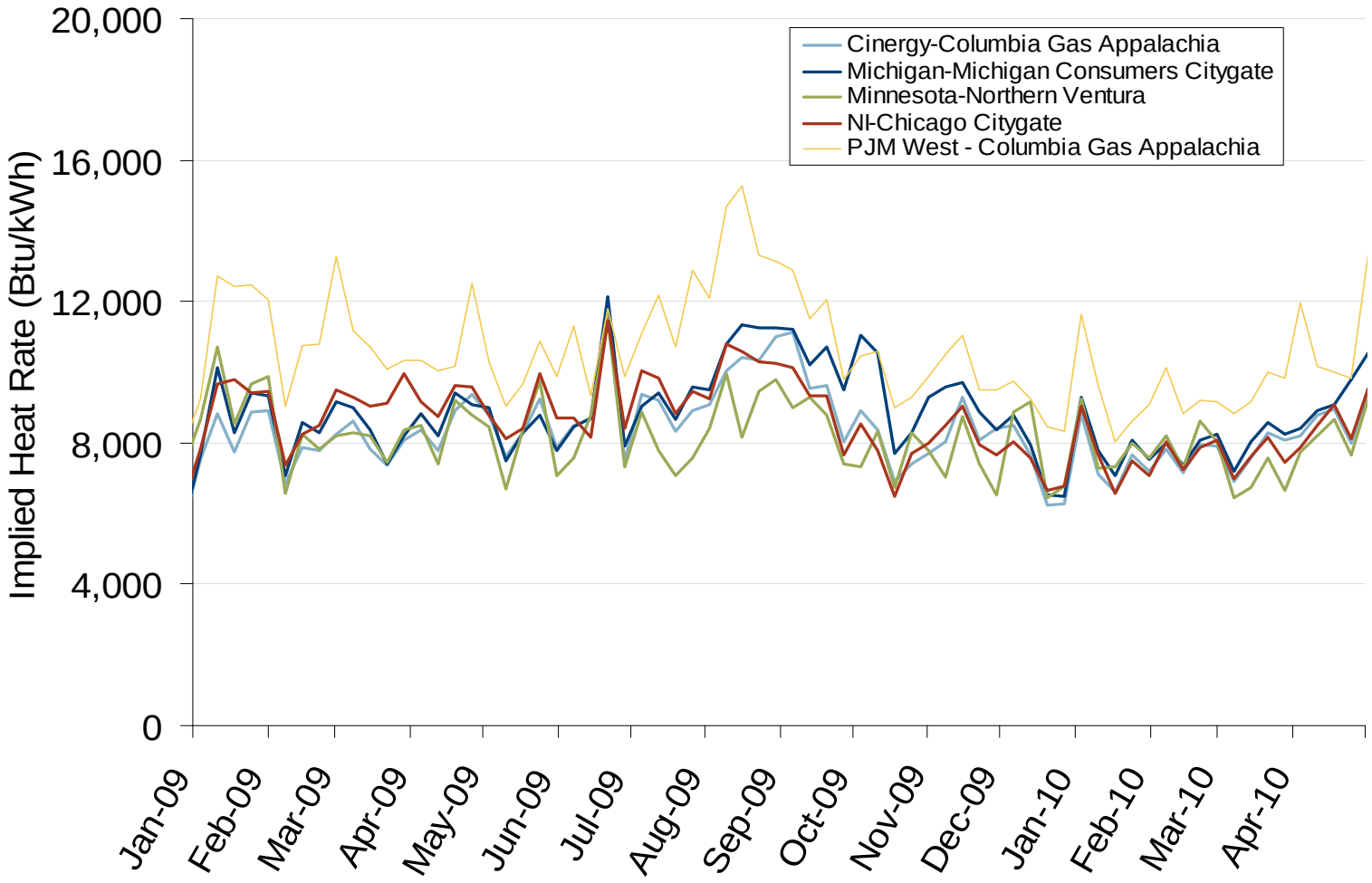
MISO/PJM Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated May 7, 2010

Implied Heat Rates at MISO and PJM Hubs
Weekly Averages



Source: Derived from *Platts* on-peak electric and natural gas price data.

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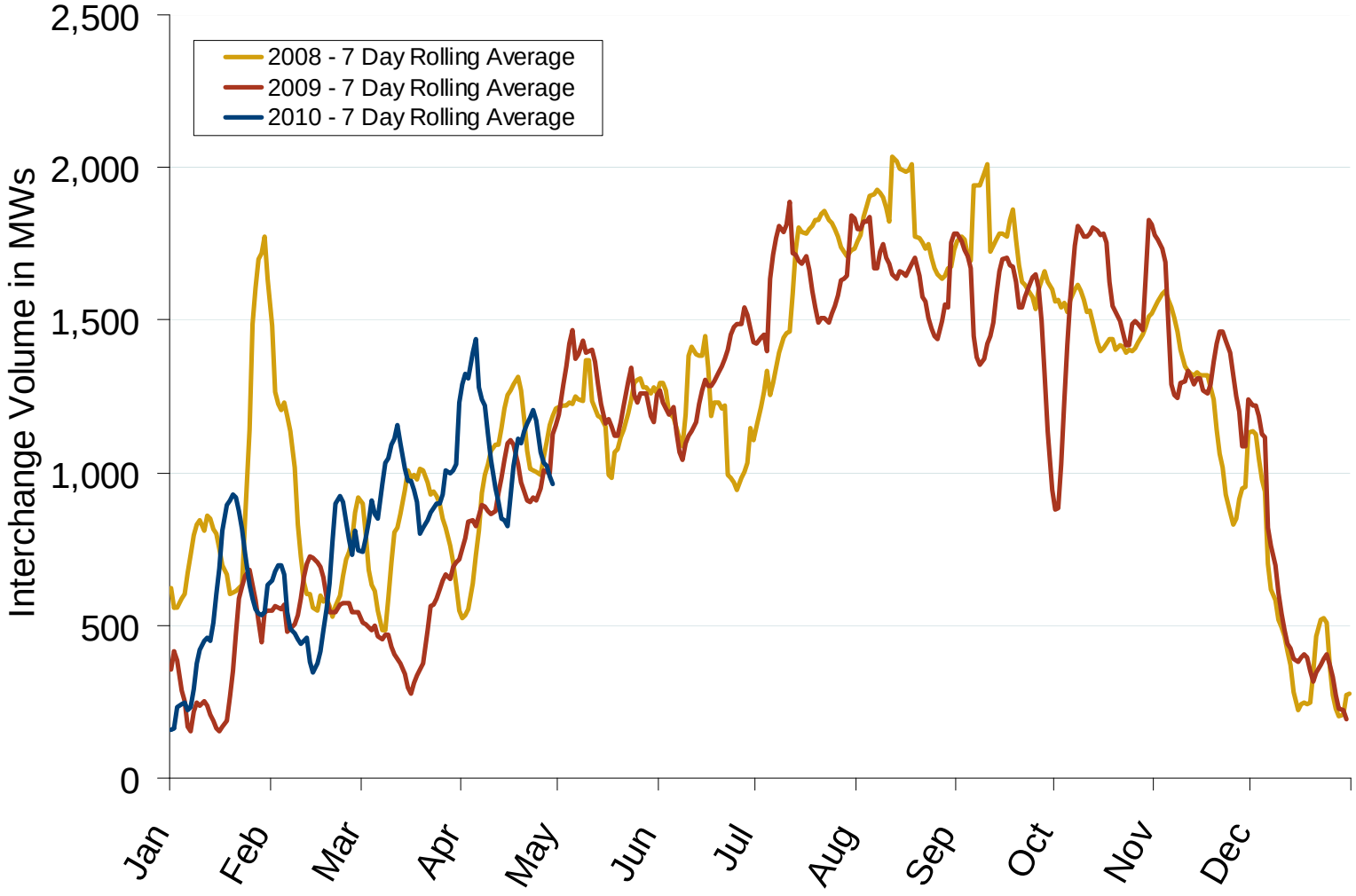
Imports into MISO from Manitoba Hydro 2008 - 2010



Source: Derived from *MISO* data.

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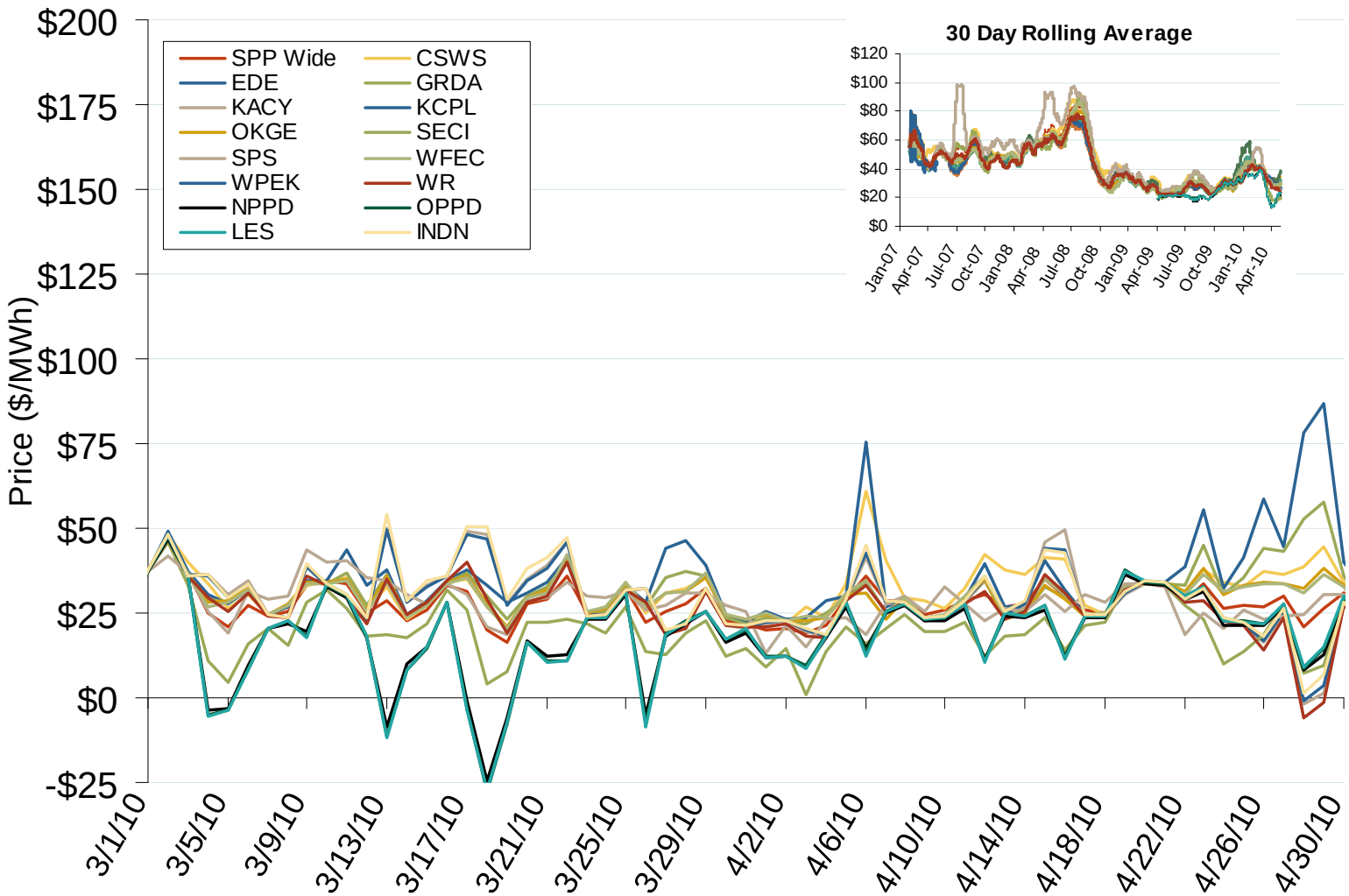
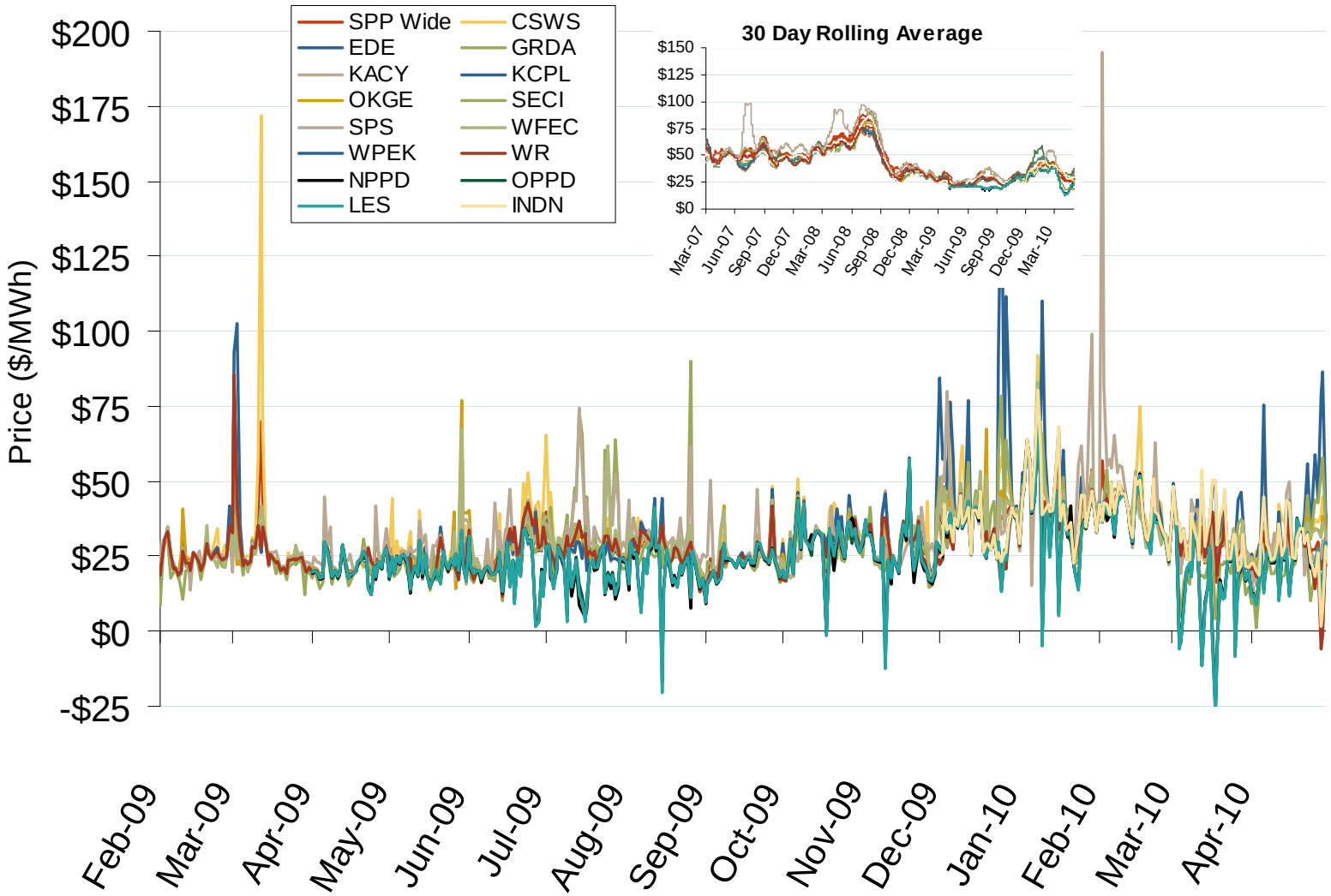
Daily Average of SPP Real Time Prices - All Hours



Source: Derived from *SPP* data.

Updated May 7, 2010

Daily Average of SPP Real Time Prices - All Hours



Source: Derived from *SPP* data.

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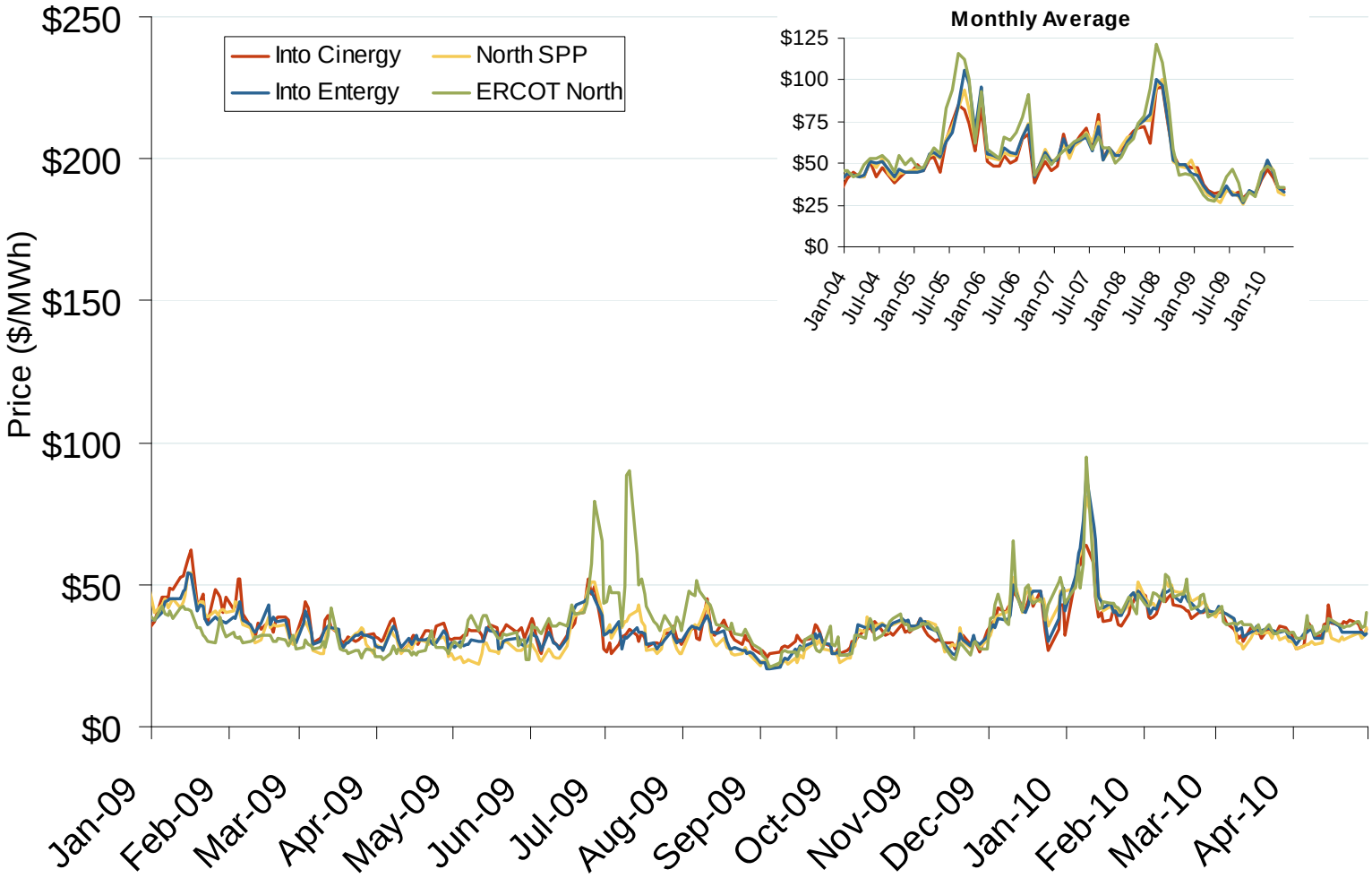
Central Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

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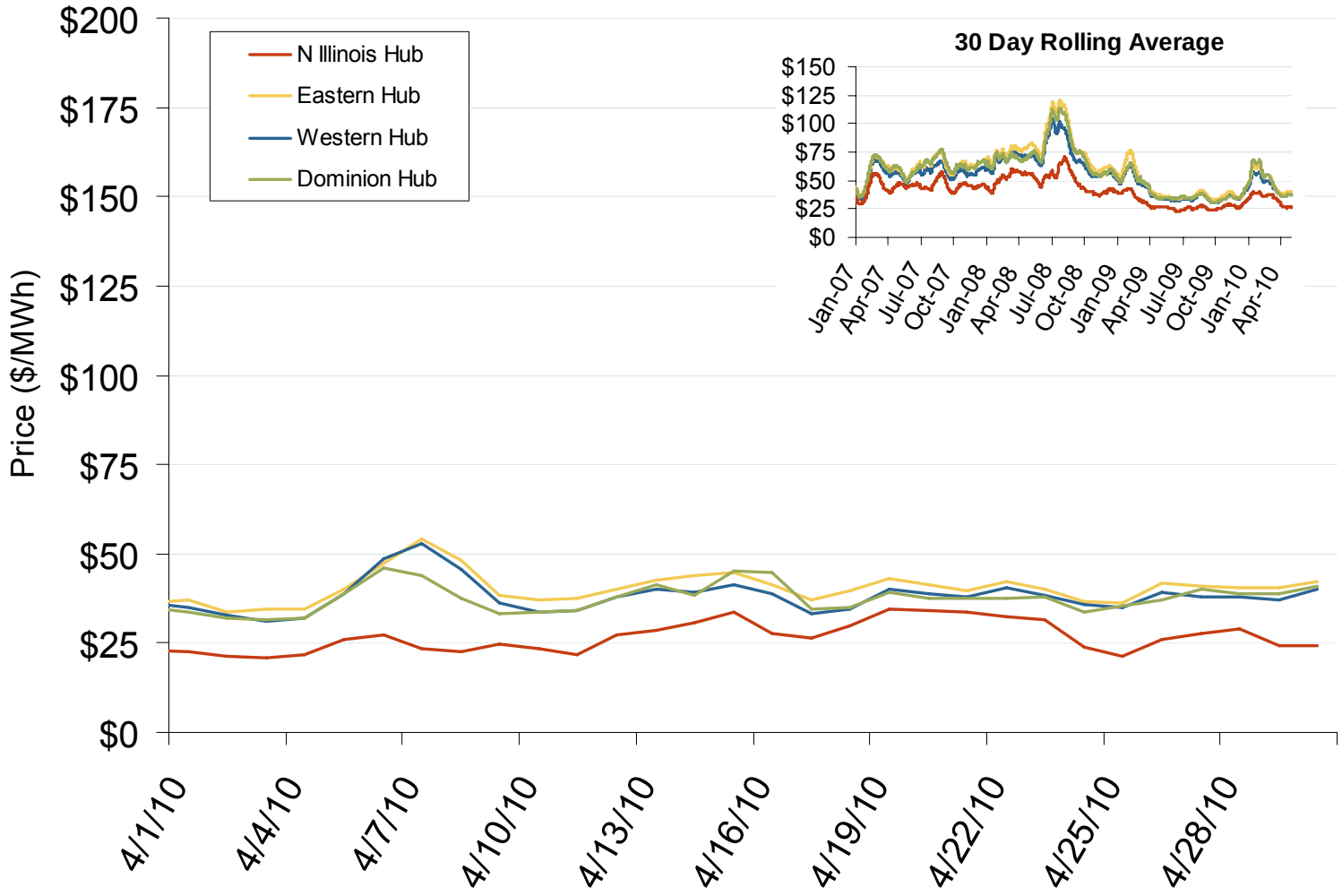
Daily Average of PJM Day-Ahead Prices - All Hours



Source: Derived by *Bloomberg* from *PJM* data as reported by *Bloomberg*.

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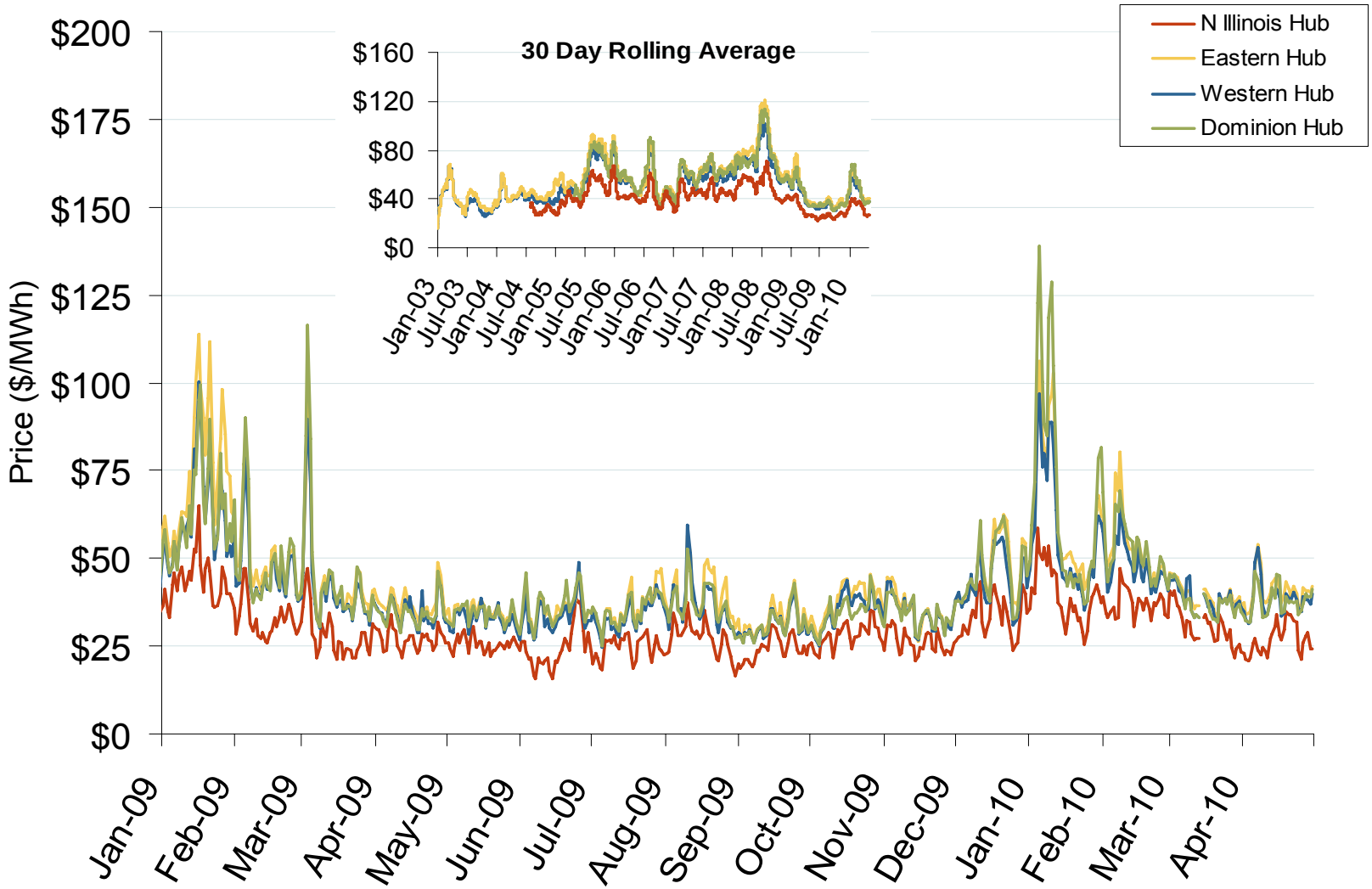
Daily Average of PJM Day-Ahead Prices - All Hours



Source: Derived by *Bloomberg* from *PJM* data as reported by *Bloomberg*.

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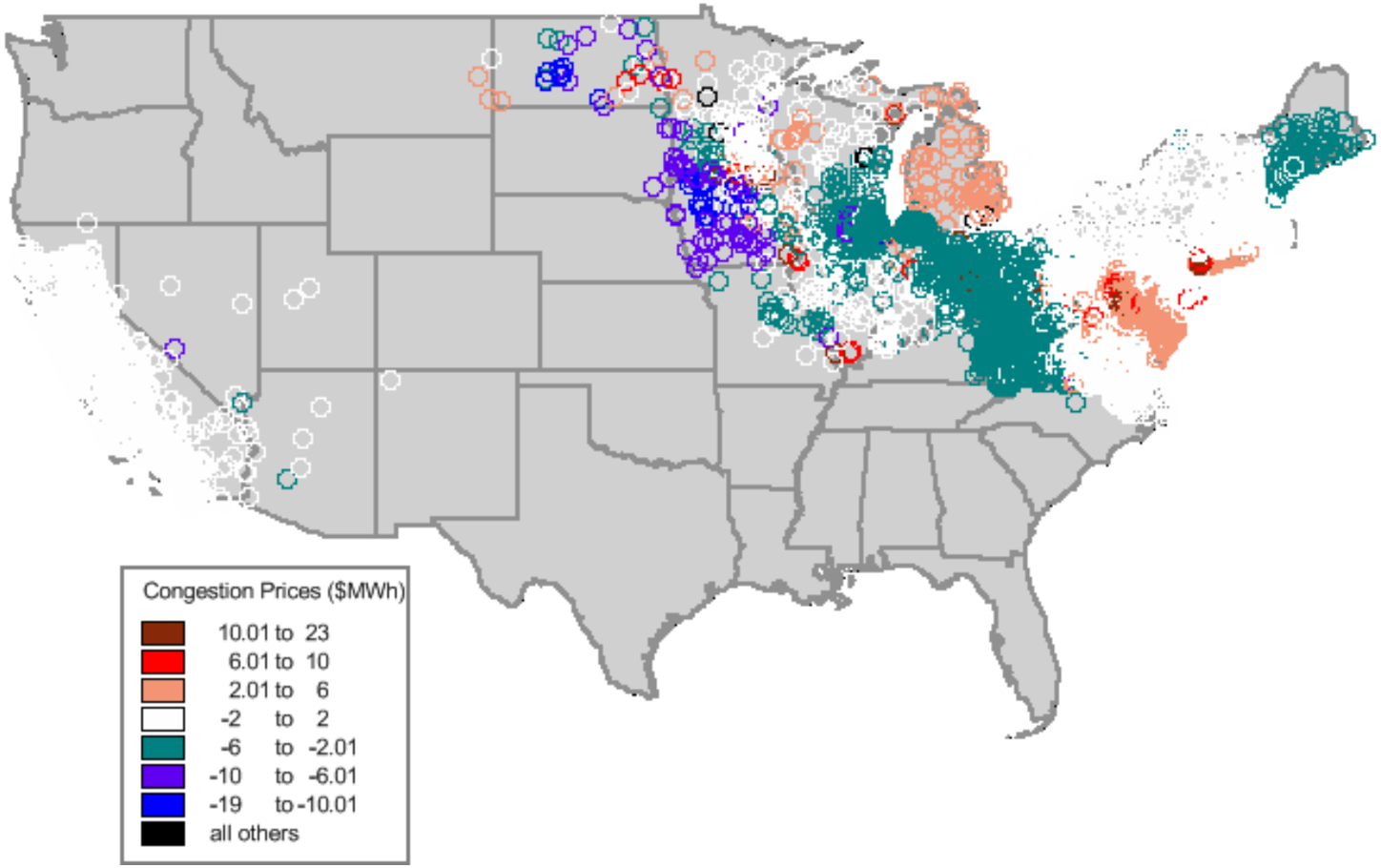
Day Ahead On-Peak Congestion Average Monthly Prices April 2010



Source: Velocity Suite

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Collaborative Greenhouse Gas (GHG) Programs

Collaborative Regional GHG Programs:

- Three North American groups with goals to lower regional GHG emissions were initiated by state Governors.
- 32 U.S. states, D.C., eight Canadian provinces, and six Mexican states are Participants or Observers.
- Observer jurisdictions do not commit to group GHG reduction goals, but participate in proceedings should they opt to join later. RGGI Observers are not on its Board.

Western Climate Initiative (WCI):

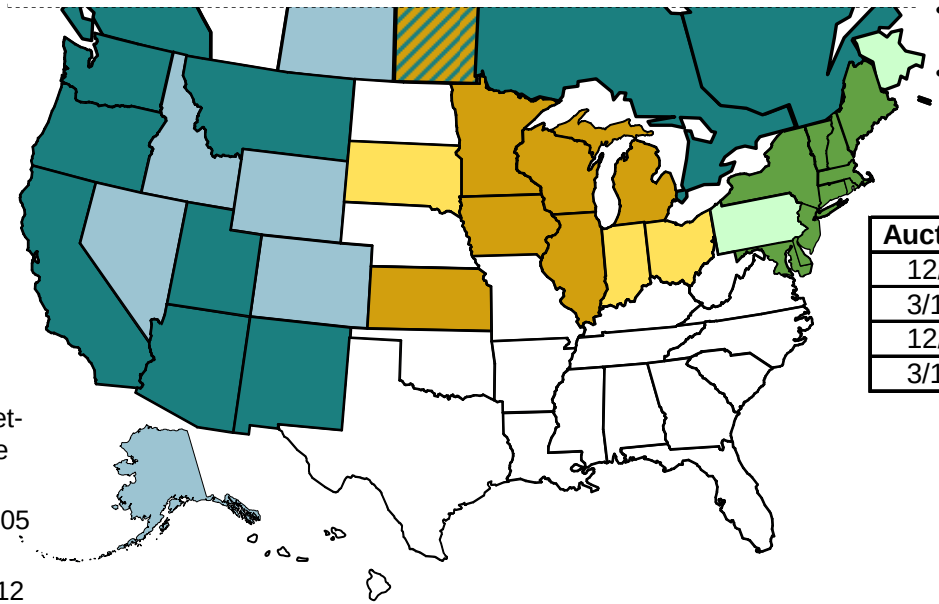
- Created February 2007
- Partners: 7 states, 4 provinces; Observers: 5 states, 1 province
- Announced its design for a market-based, *multi-sector* cap-and-trade program, Sept 2008:
  - 15% CO_2 reduction below 2005 levels by 2020
  - Phase I to take effect Jan 2012

Midwest Greenhouse Gas Reduction Accord:

- Established November 2007
- Participants: 6 states, 1 province; Observers: 3 states, 1 province
- Preliminary design recommendations issued Dec 2008: 15 - 25% reductions by 2020, 60 - 80% by 2050

Regional Greenhouse Gas Initiative (RGGI):

- Compliance period began Jan 1, 2009
- Participants: 10 states Observers: 1 state, D.C., 3 provinces
- Market-based cap-and-trade effort to reduce *power-sector* CO_2 emissions.
- 10% CO_2 reduction by 2018 covers over 200 plants
- One allowance is the right to emit 1 ton of CO_2
- Annual RGGI cap is 188 million tons



RGGI Auction Data

Auction Date	Vintage Year	Clearing Price
12/2/2009	2009	$2.05
3/10/2010	2010	$2.07
12/2/2009	2012	$1.86
3/10/2010	2013	$1.86

- Participant in WCI
- Observer to WCI
- Participant in MGGRA
- Observer to MGGRA
- Participant in RGGI
- Observer to RGGI
- Participant in MGGRA & WCI

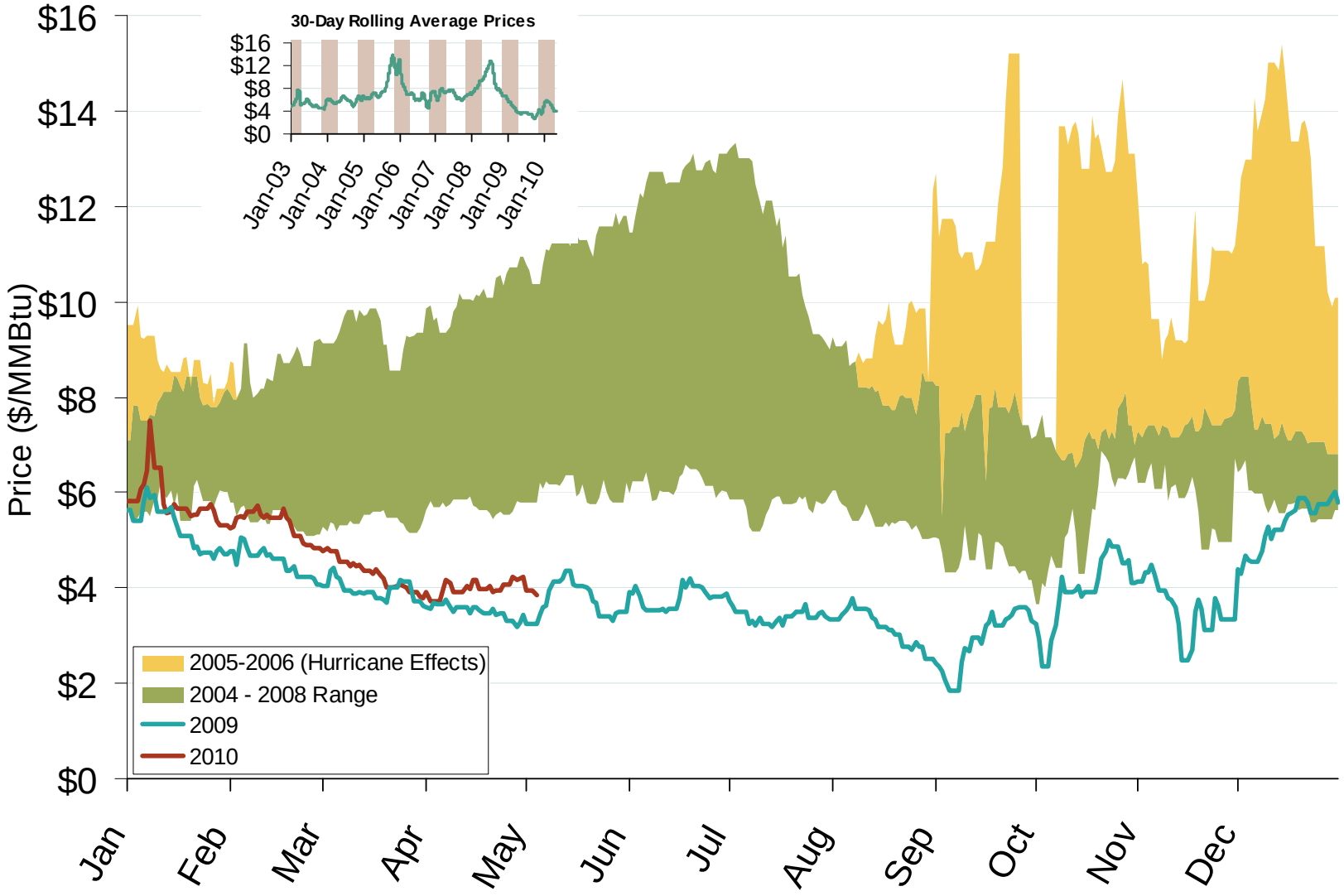
Updates at: http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-ghg.pdf

Notes: Kansas is a MGGRA participant and WCI observer. Ontario and Quebec are Partners to WCI and Observers to RGGI; Ontario is also an observer to RGGI.
Sources: regional initiatives - www.rggi.org, www.midwesternaccord.org, www.westernclimateinitiative.org, Point Carbon, analyst reports, trade press

Updated May 7, 2010

Natural Gas and Fuel Markets

Henry Hub Natural Gas Daily Spot Prices



Source: Derived from *Platts* data.

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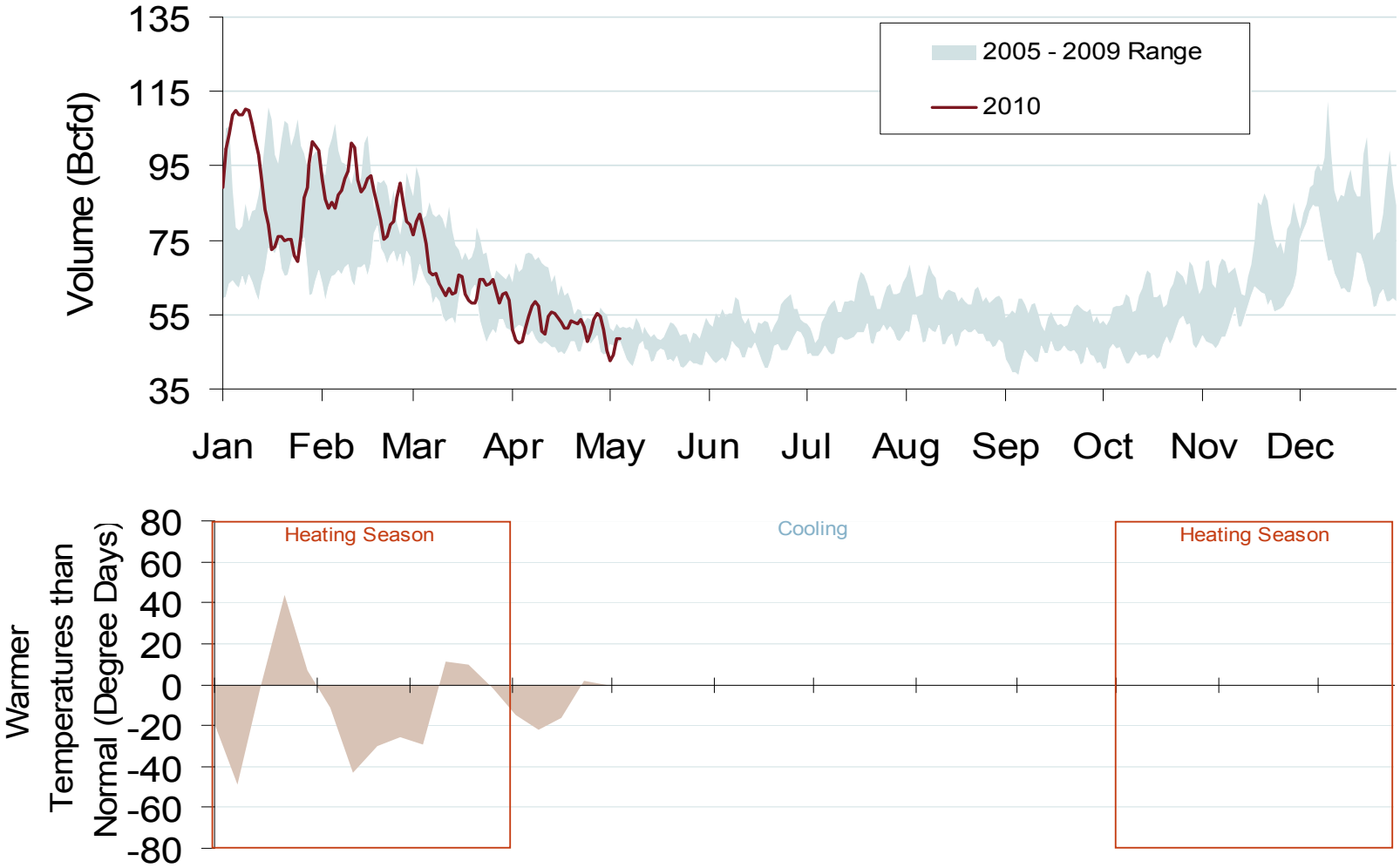
Updated May 13, 2010

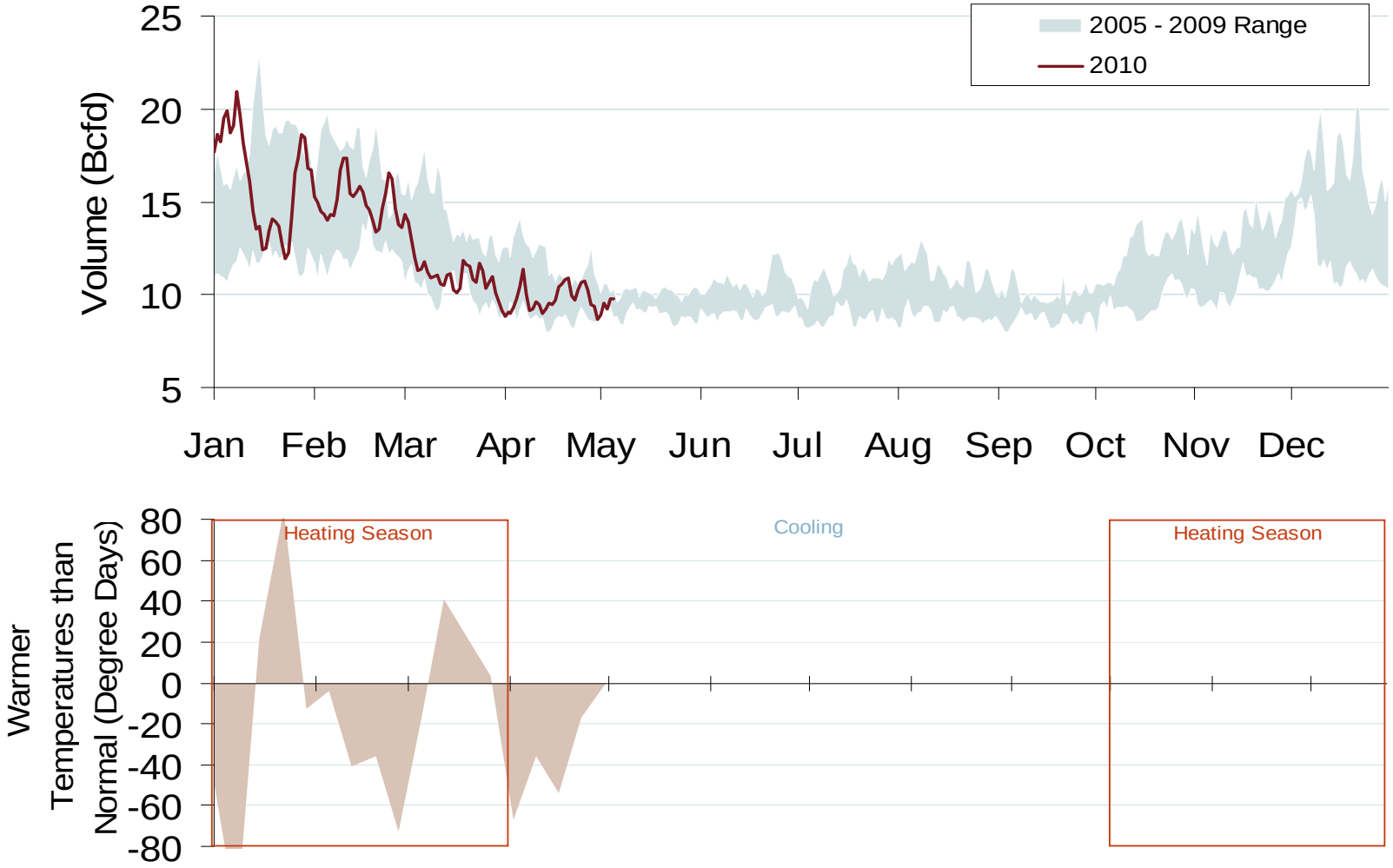
Total U.S. Natural Gas Demand (All Sectors) and Temperatures



Source: Derived from Bentek Energy and NOAA data.

Updated May 7, 2010

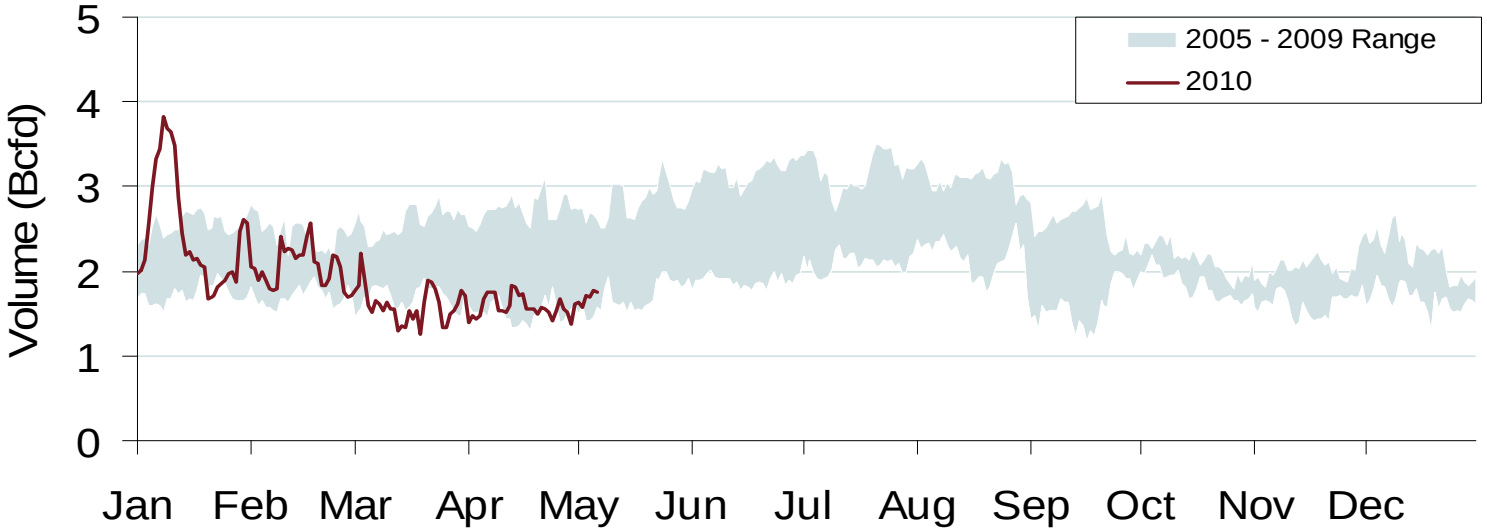
Daily Midwest Natural Gas Demand
All Sectors

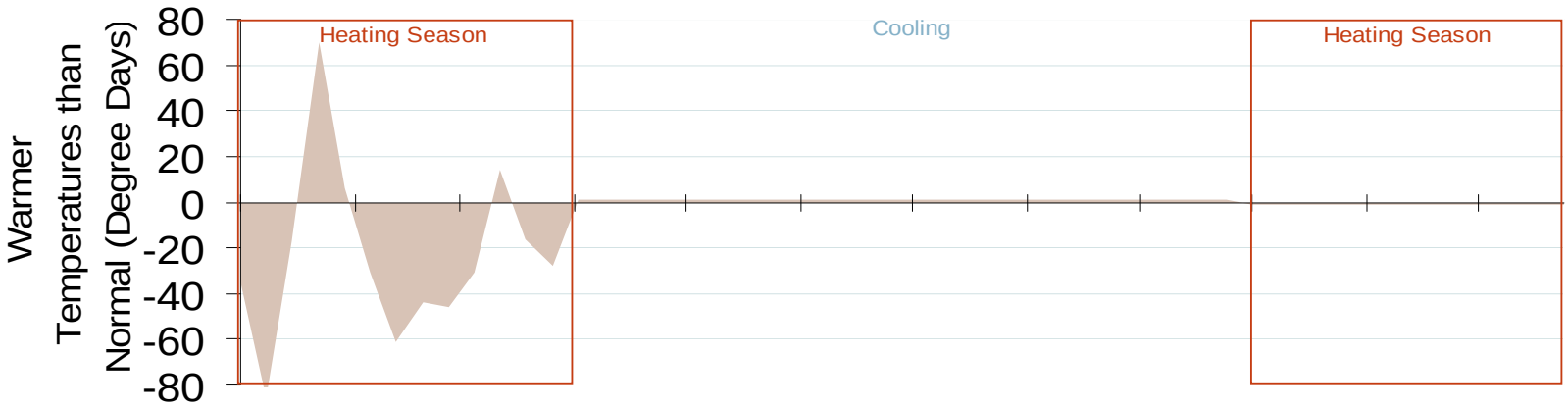


Source: Derived from Bentek Energy and NOAA data.

Updated May 7, 2010

Daily Gulf Natural Gas Demand
All Sectors





Source: Derived from Bentek Energy and NOAA data.

Updated May 7, 2010

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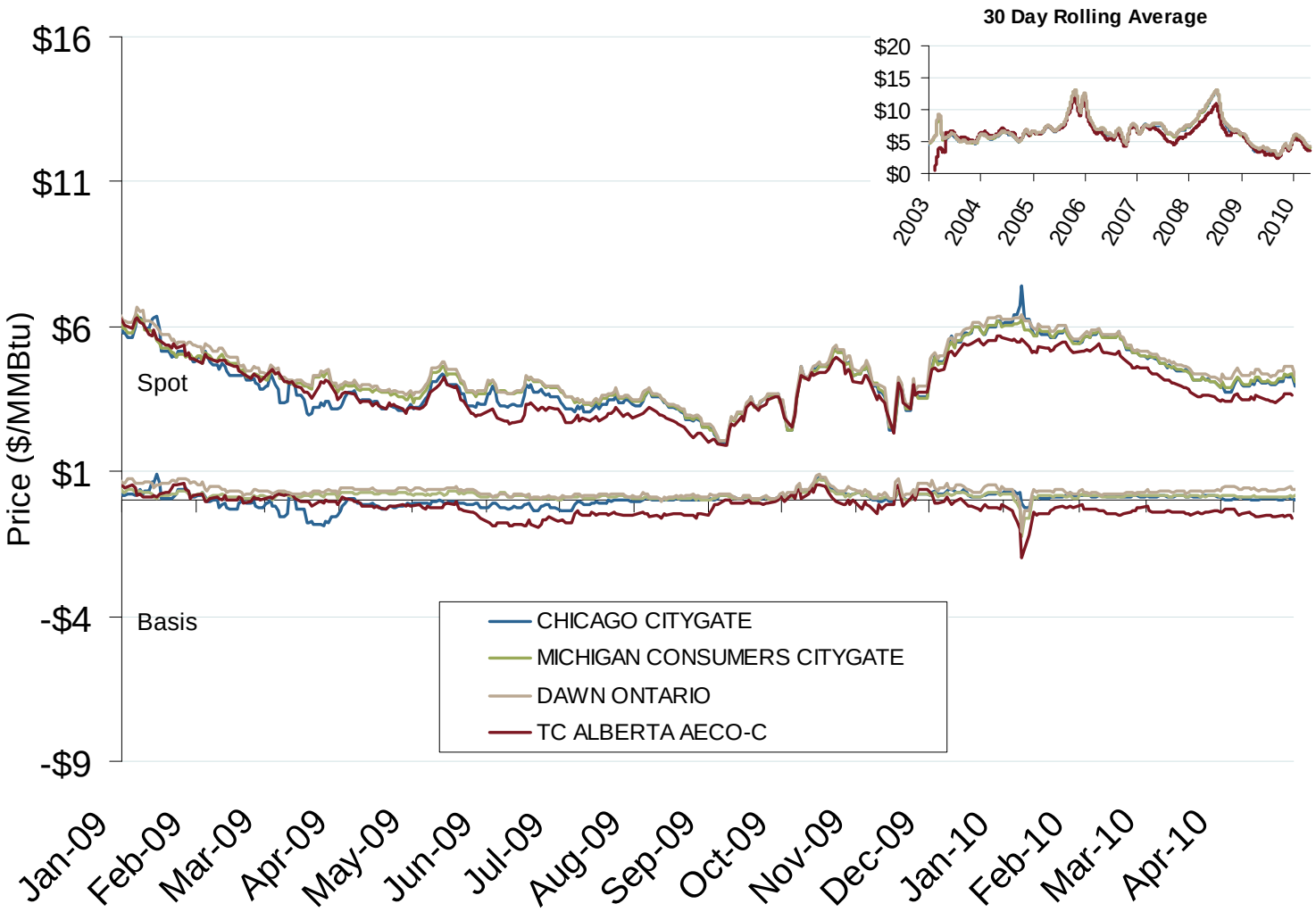
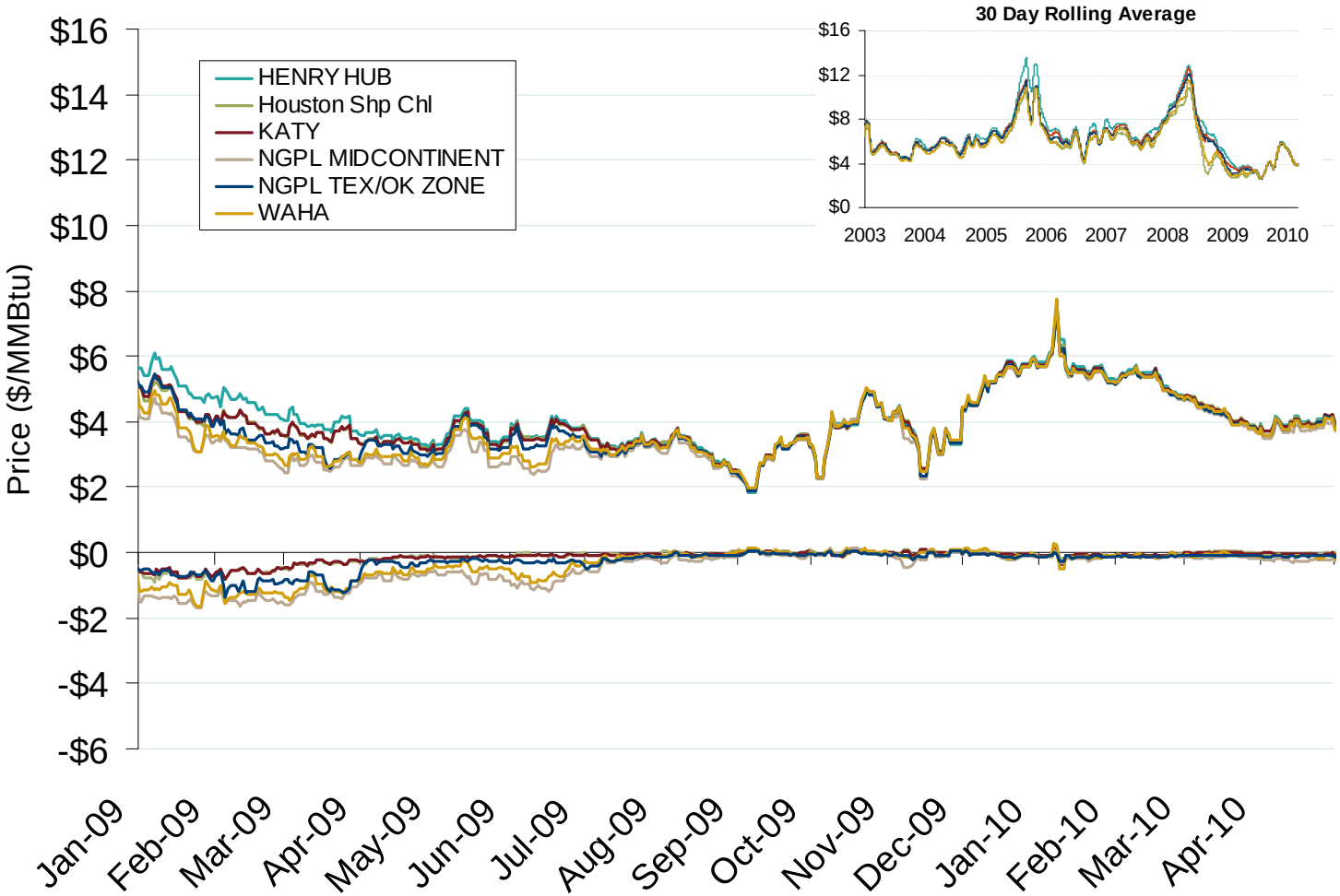
Midwestern Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated May 7, 2010

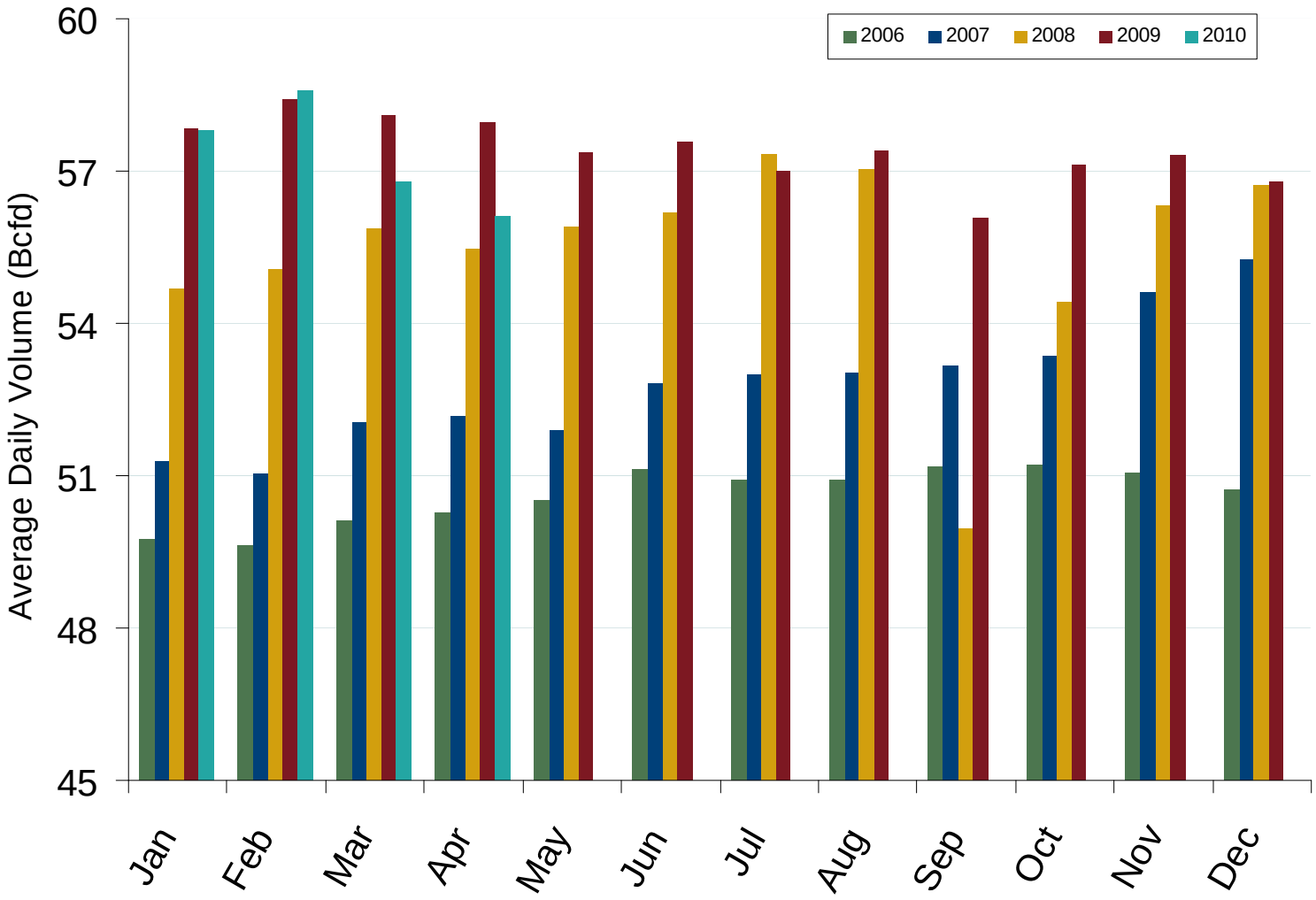
Gulf Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated May 7, 2010

U.S. Dry Gas Production



Source: Derived from *EIA and Bentek data.*

May 2010 Midwest Snapshot Report

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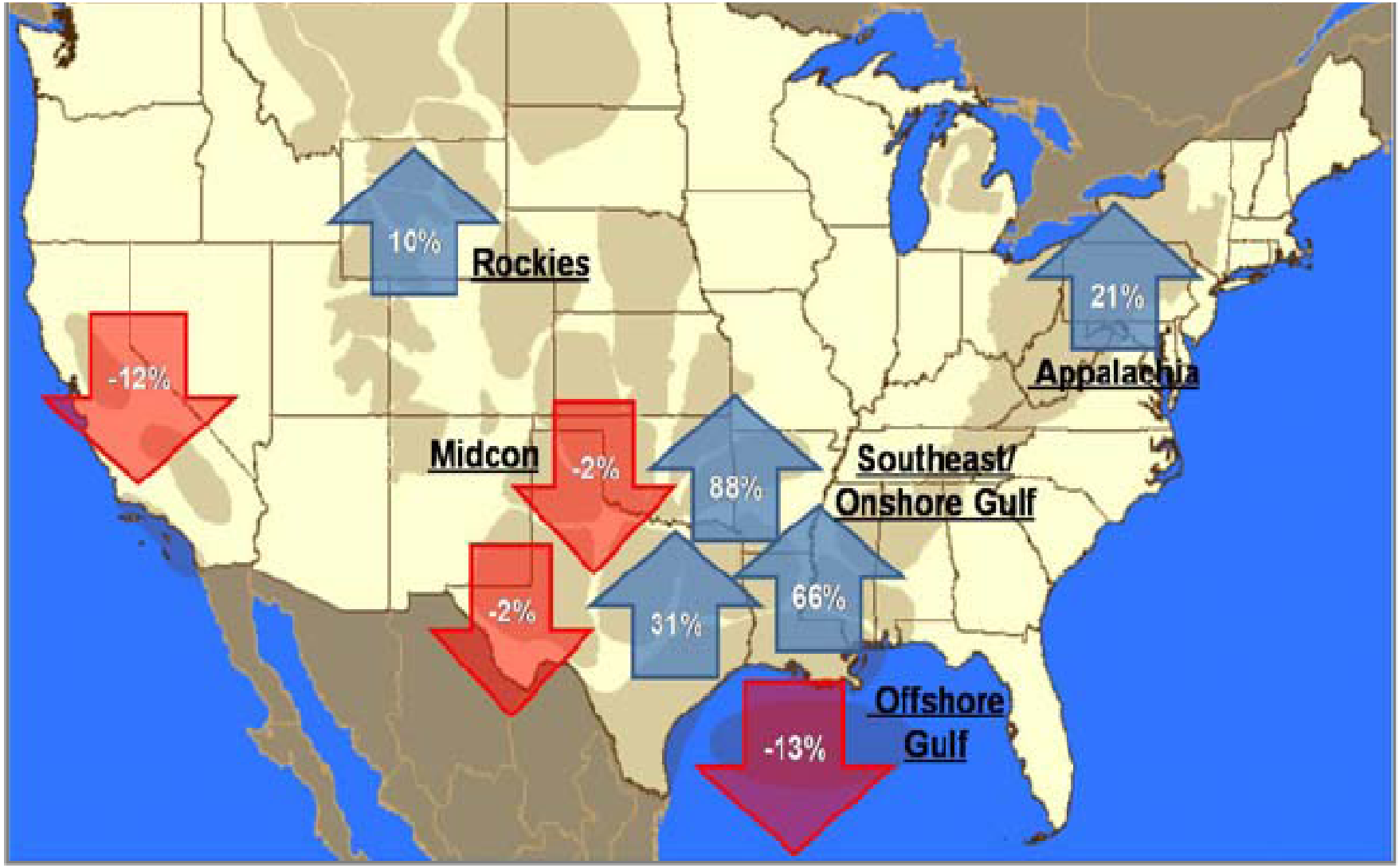
EIA-914 Production Data Survey Revisions "Much Ado About Nothing"

- EIA released revised production data on April 29
- Old method depended on historical data two to seven years old which did not accurately reflect shale gas production
- New method uses data that is only six to 18 months old
- The market was uncertain as to the magnitude of the revisions – some analysts estimated the new methodology would show production was overestimated by over 1 Bcfd
  - Market fell by over 24 cents in reaction to storage data released earlier, but the release of revised production data prompted only a 7-cent drop
- EIA revised:
  - February 2010 production upward by 1 Bcfd (1.6% above revised January data
  - January 2010 production downward by 0.6 Bcfd (0.9% of 63.43 Bcfd previously reported
  - 2009 monthly revisions ranged from -0.3% to -1.3% (0.34 Bcfd average monthly revision)
- EIA states the new methodology no longer underestimates shale production

Updated April 29, 2010

Changes in U.S. Gas Production 2007-2009

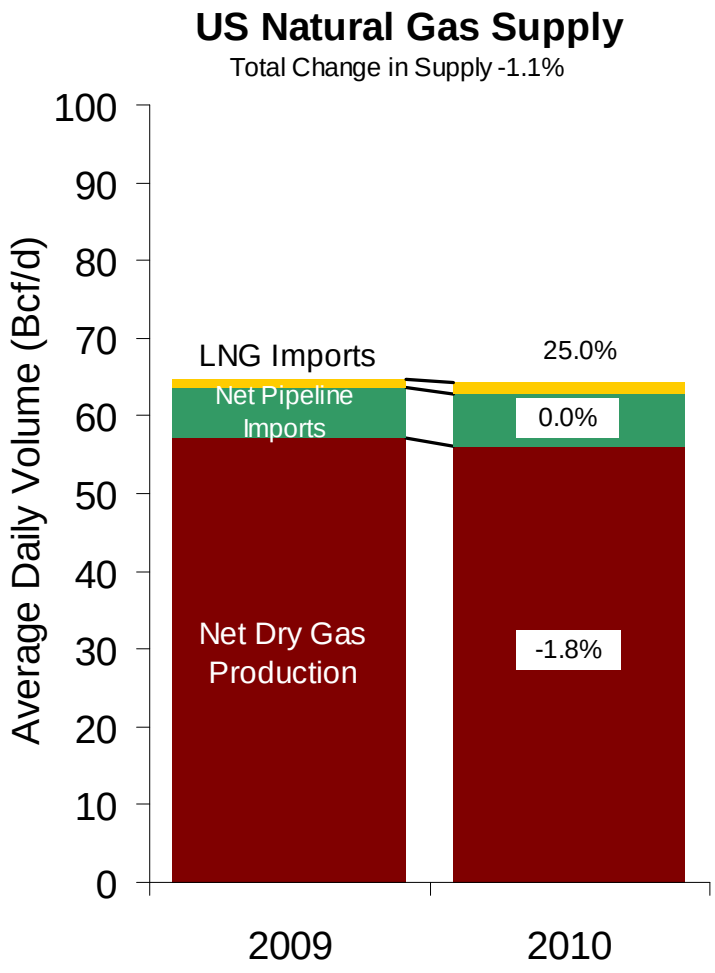


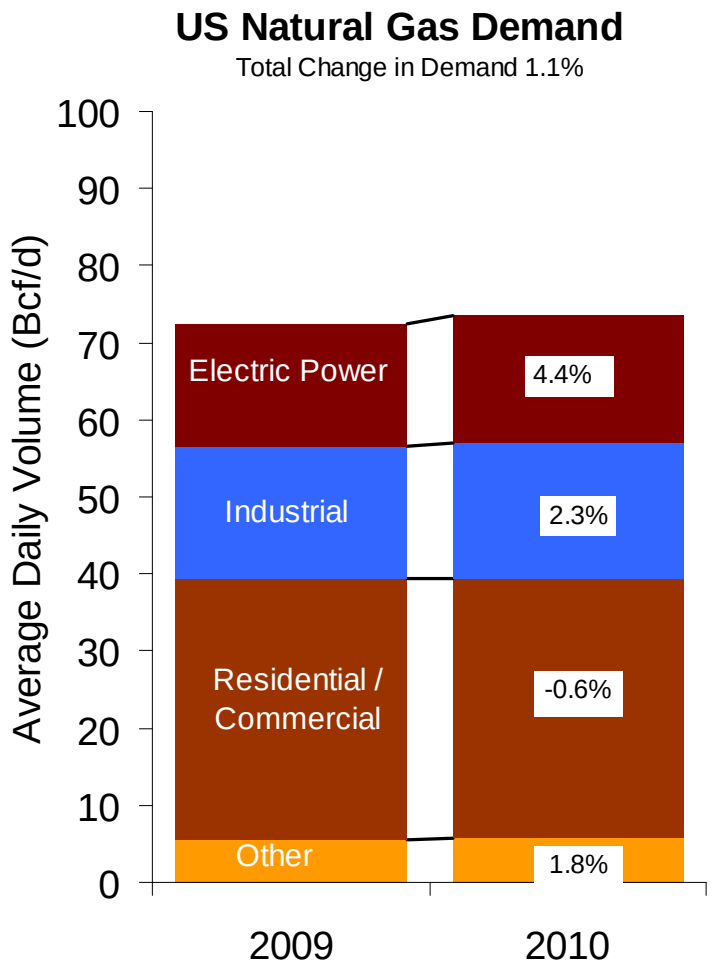
Source: Bentek Energy, LLC

Updated May 5, 2010

May 2010 Midwest Snapshot Report

U.S. Natural Gas Supply and Demand 2009 vs. 2010: January - April





Source: Derived from Bentek data.

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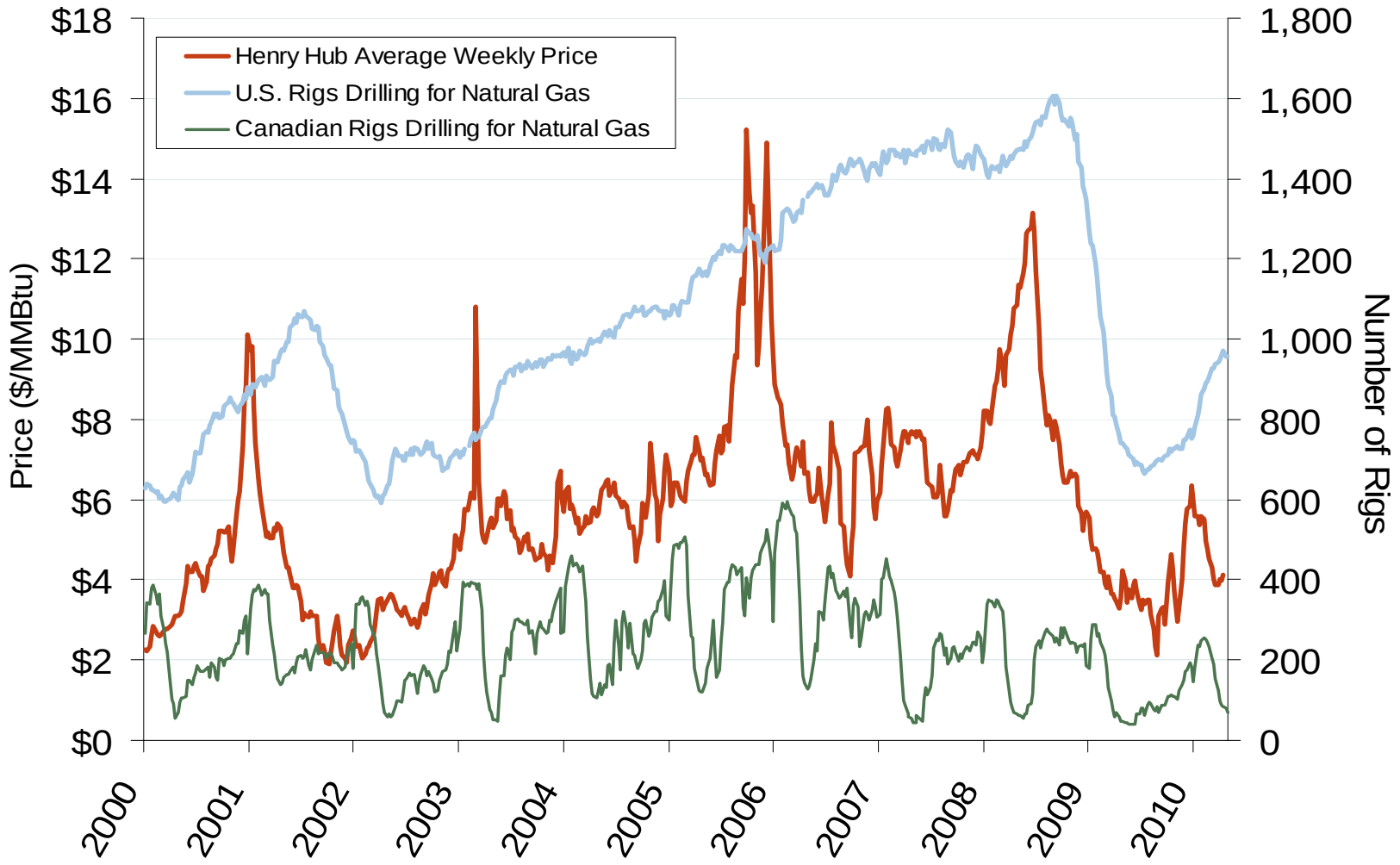
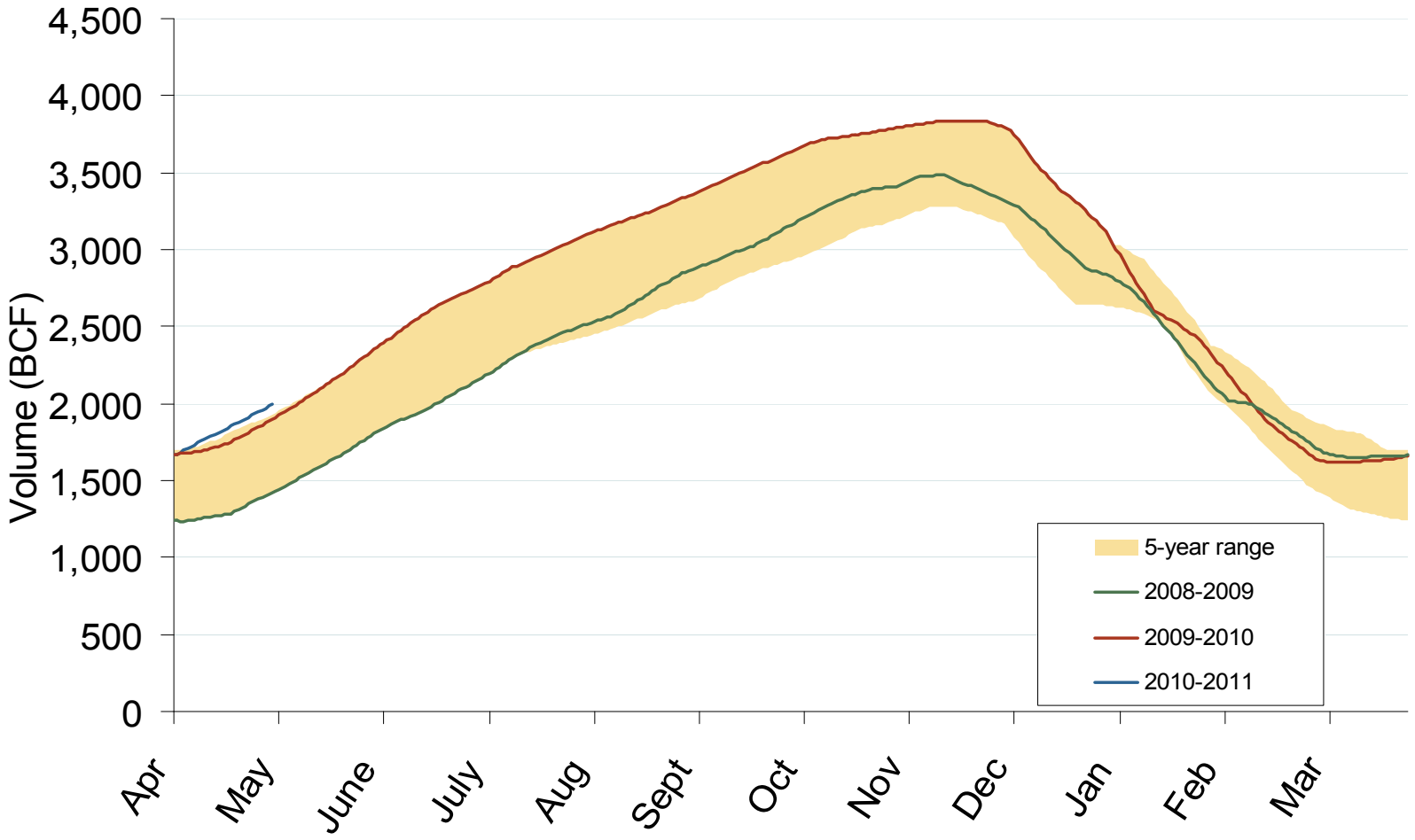
U.S. and Canadian Natural Gas Drilling Rig Count and Daily Spot Prices



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

Updated May 7, 2010

Total U.S. Working Gas in Storage



Source: Derived from *EIA* data.

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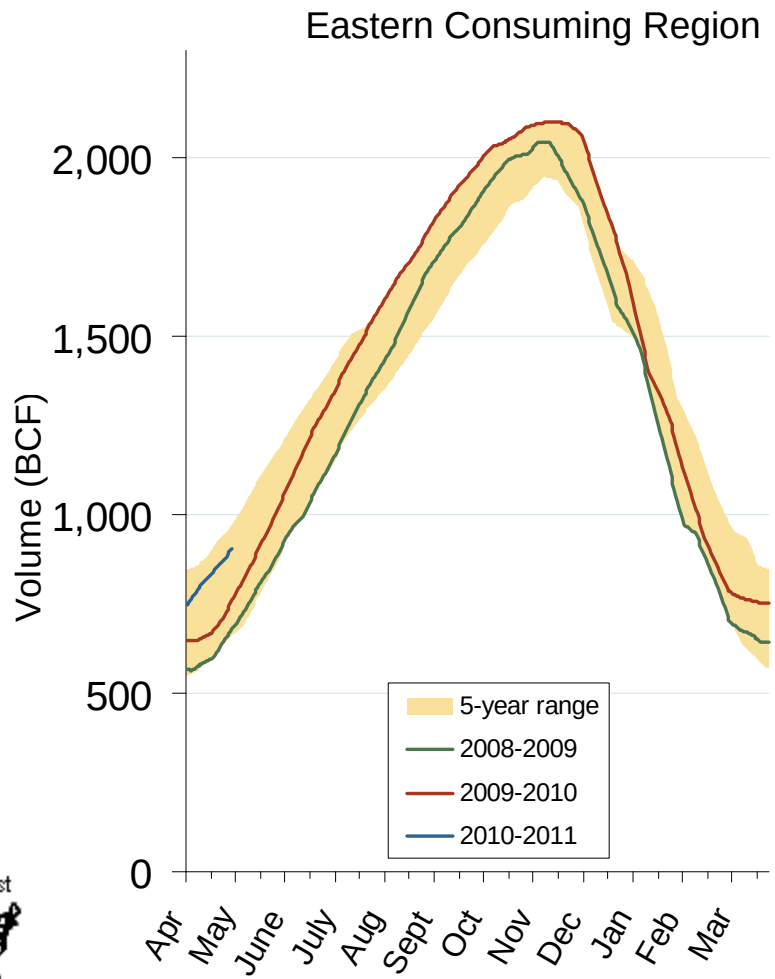
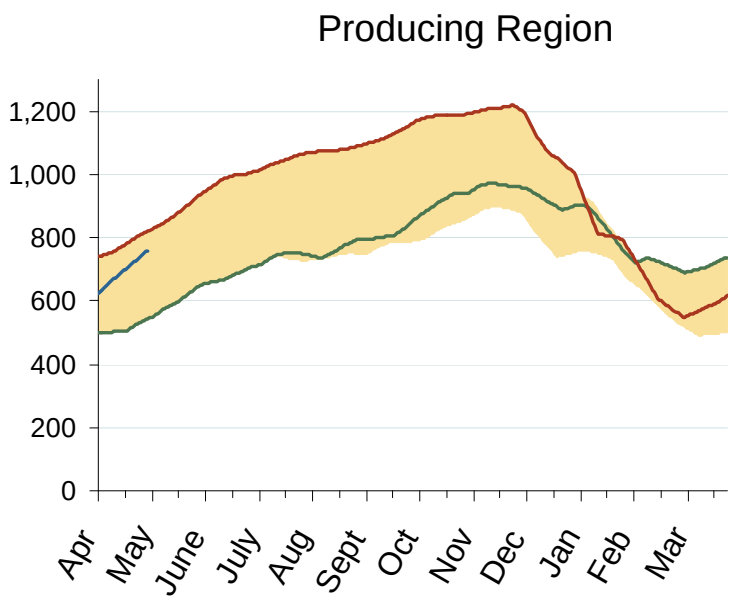
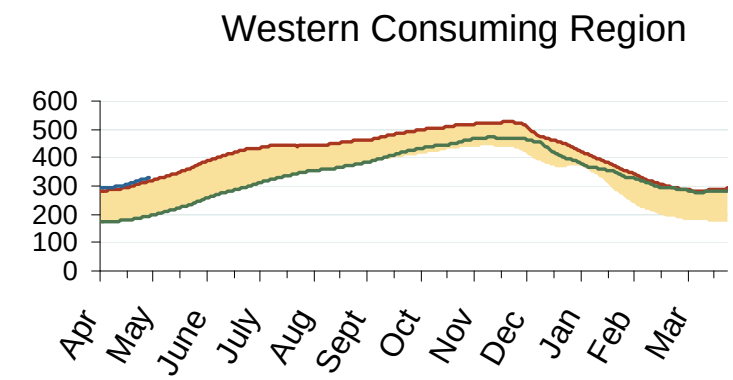
Regional Totals of Working Gas in Storage



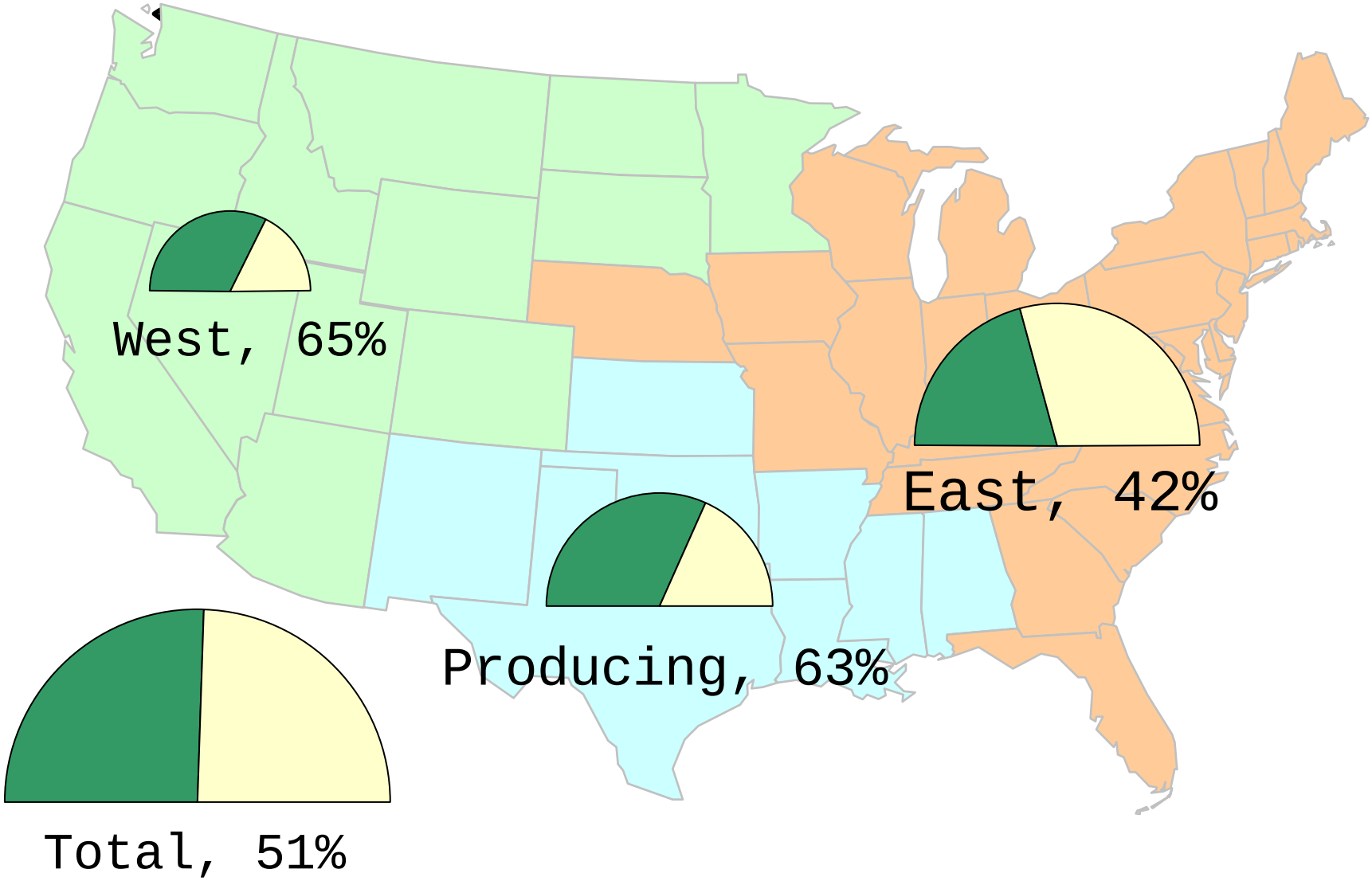




Source: Derived from *EIA* data.

Updated May 7, 2010

Natural Gas Storage Inventories – % full on April 30, 2010



Source: Derived from EIA Storage and Estimated Working Gas Capacity data.

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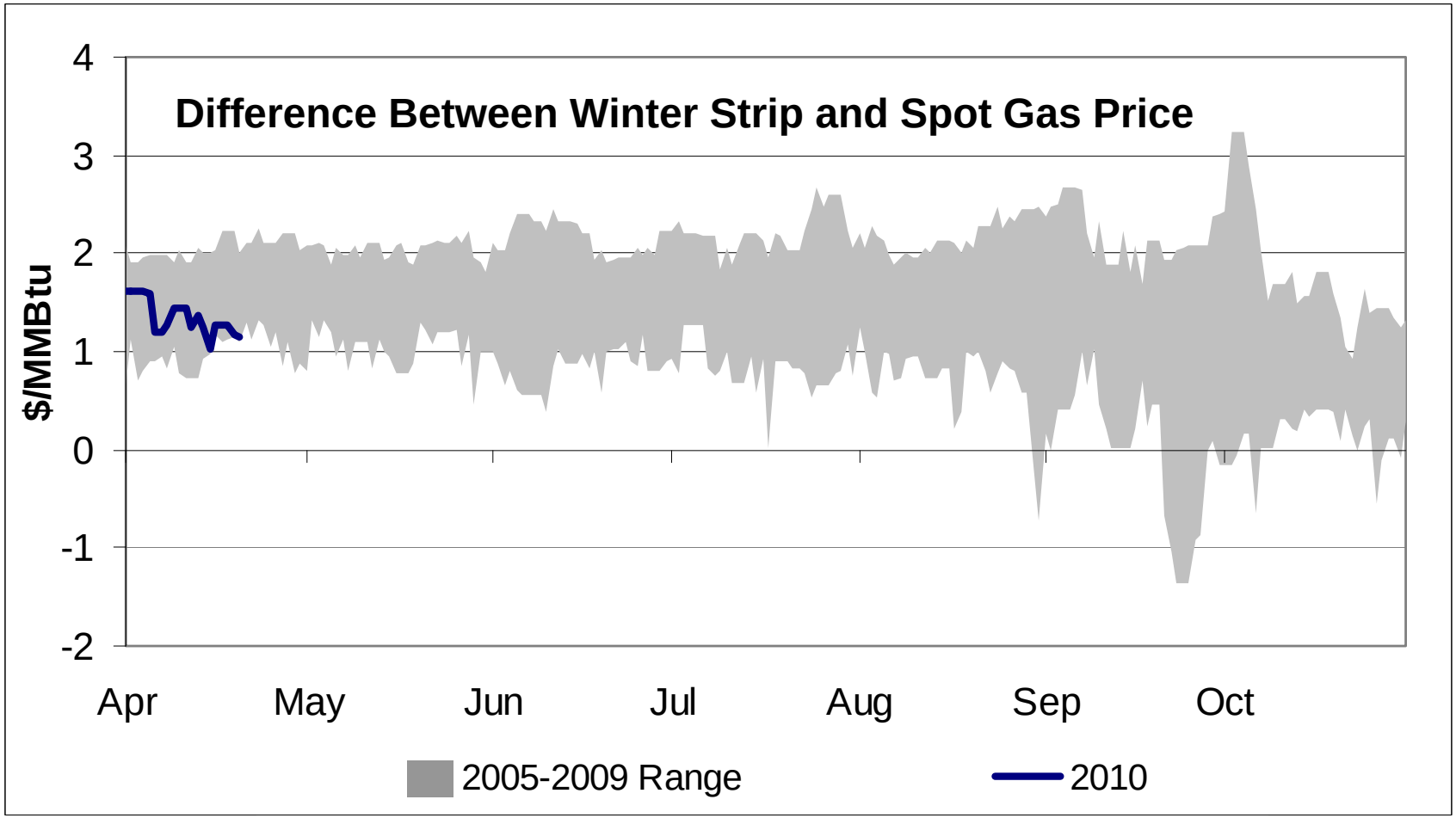
Low Commodity and Storage Costs Support Robust Storage Injections



Source: Derived from Bloomberg Data

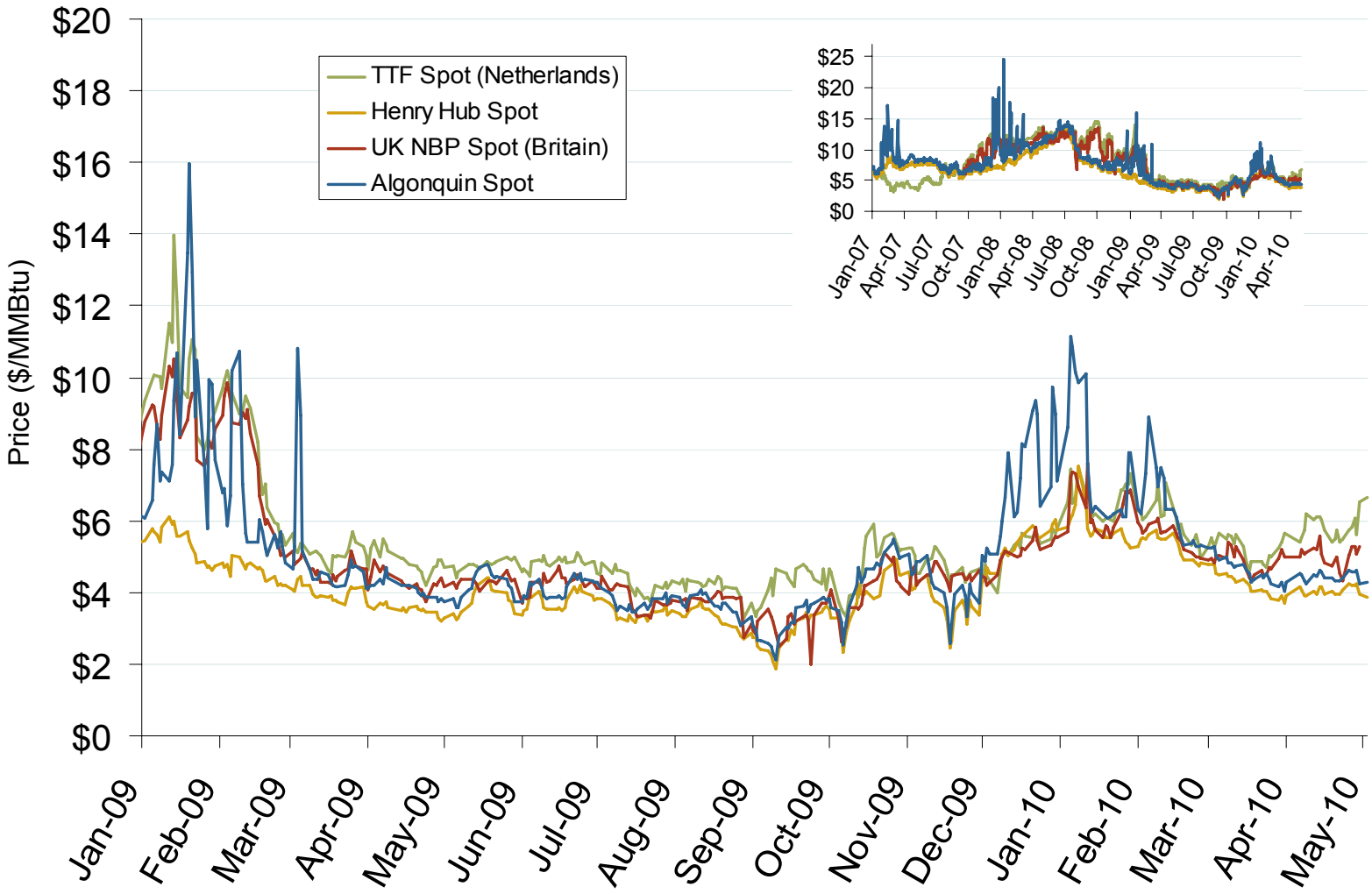
Updated May 12, 2010

Salt Cavern Storage Enhances System Flexibility

- Over 90% of total U.S. salt cavern capacity (>500 Bcf) is in the SE/Gulf region
- Physical advantages over depleted field and aquifer storage
  - Multiple cycles up to 10-12 per year
  - High deliverability
  - Greater field integrity
  - Responds to daily/hourly variations in customer supply needs
- Enhances customer flexibility
  - Pipeline and LDC customers
    - More easily supports no-notice service
    - Better manage imbalances and penalties
    - Helps facilitate daily nomination changes and title transfers
    - Parking and lending
  - High deliverability source for the quickly changing needs of gas fired generation and industrial loads
  - Commercial customers
    - Backstop sales contracts
    - Capture profits from spot price movements
- Allows the operator to offer market based rates and a wider variety of supply management tools to a larger array of customers

Updated April 29, 2010

Atlantic Basin European and US Spot Natural Gas Prices



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

Updated May 7, 2010

World LNG Estimated May 2010 Landed Prices

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

May 2010 Midwest Snapshot Report

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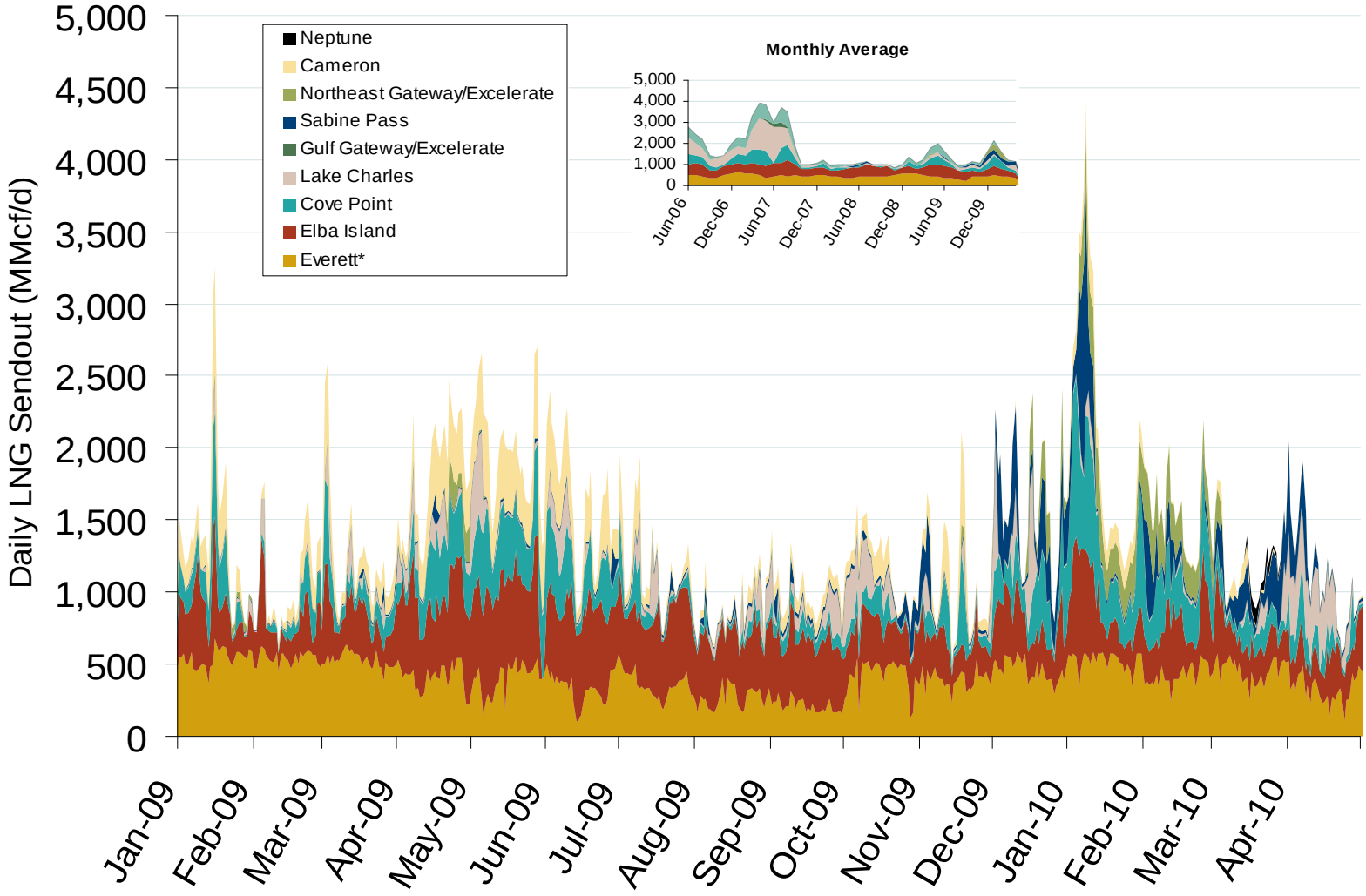
Daily Gas Sendout from Existing U.S. LNG Facilities

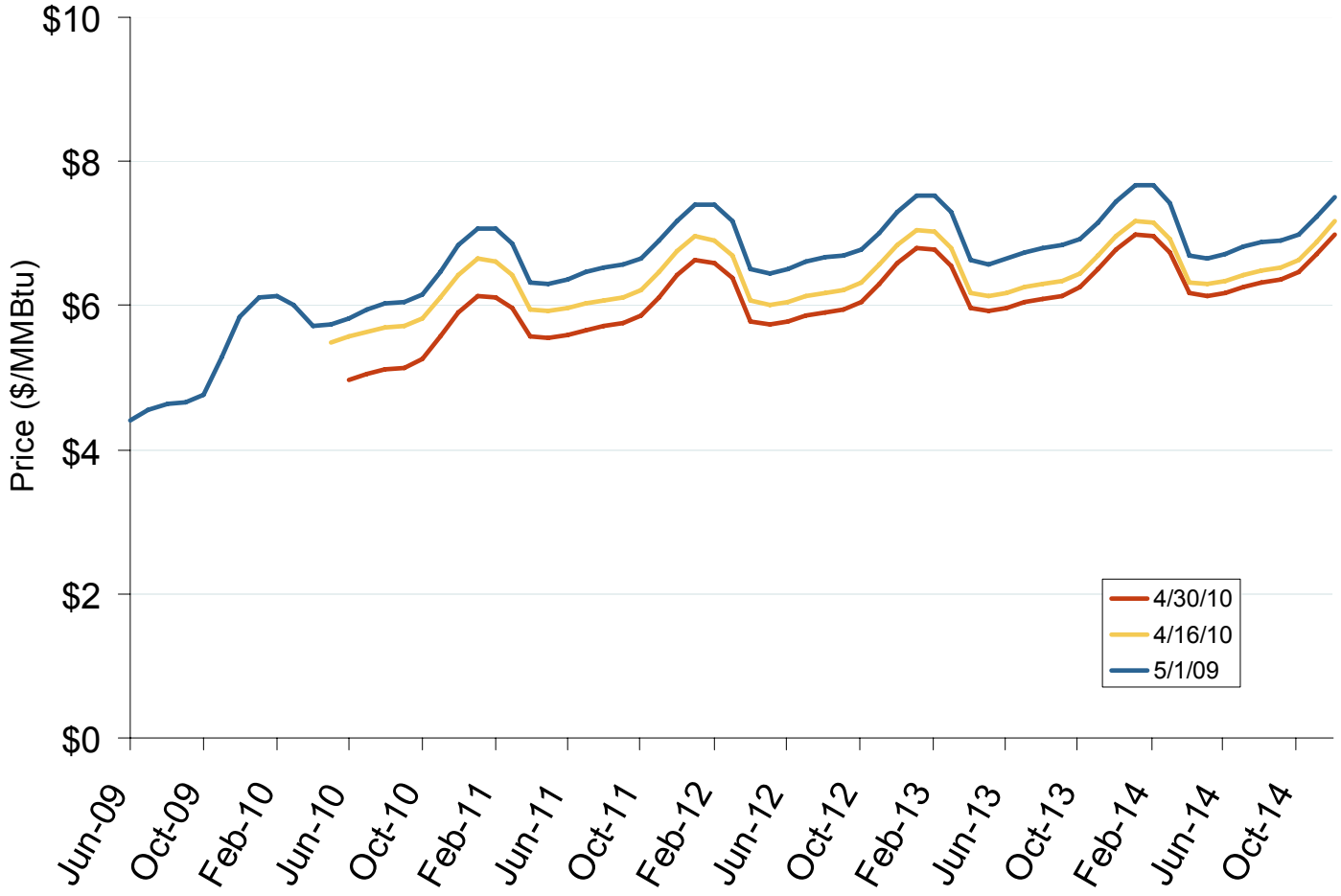


Source: Derived from *Bentek* data.

* Everett data includes flows onto the AGT and TGP interstate lines, plus estimates of flows to the Mystic 7 power plant, Keyspan Boston Gas, and LNG trucked out of the terminal. Excludes Freeport LNG which flows via intrastate pipelines.

Updated May 7, 2010

NYMEX Natural Gas Forward Price Curve

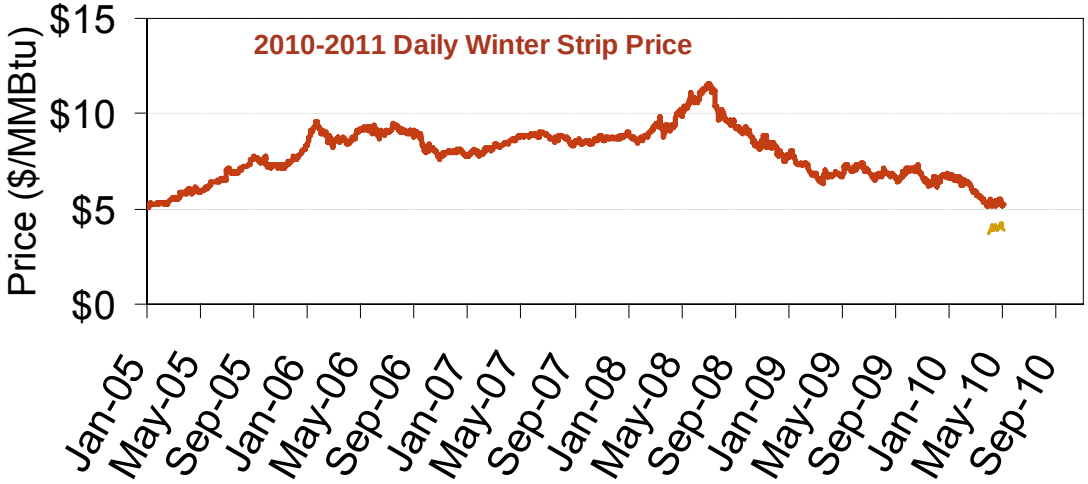


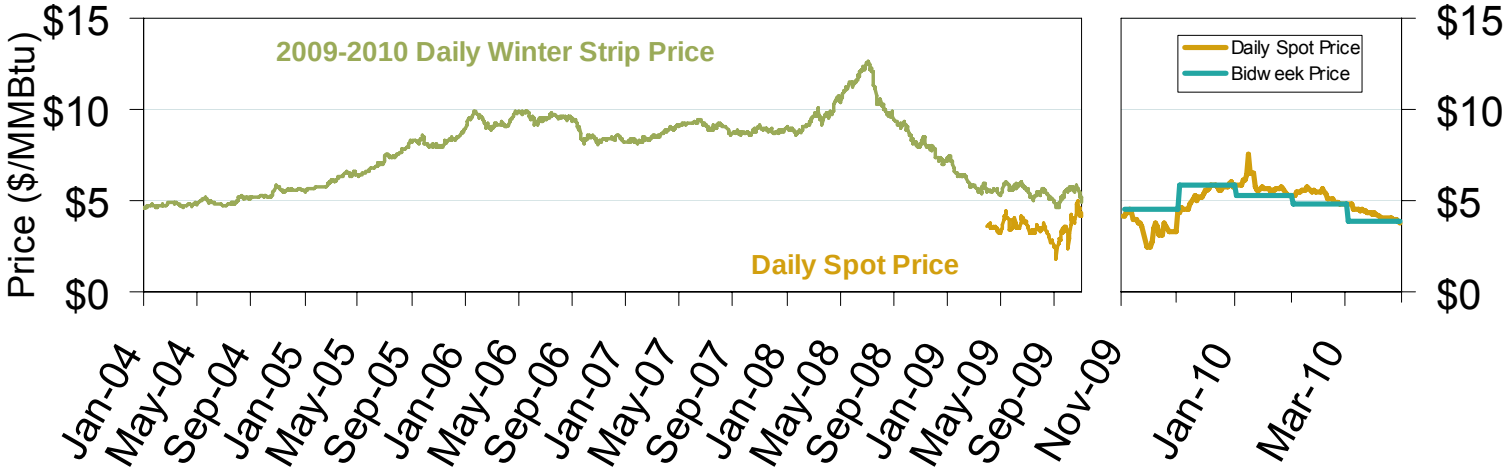
The NYMEX futures contract trades in 10,000 million Btu units. The blue series shows the forward price curve for these contracts 1-year ago. The red and yellow curves show prices for contracts traded on the current and previous months.

Source: Derived from *NYMEX* data.

Updated May 7, 2010

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





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

Updated May 7, 2010

Bidweek Gas Prices Rise for May

Bidweek is the last five business days of every month for gas to be delivered every day the following month.

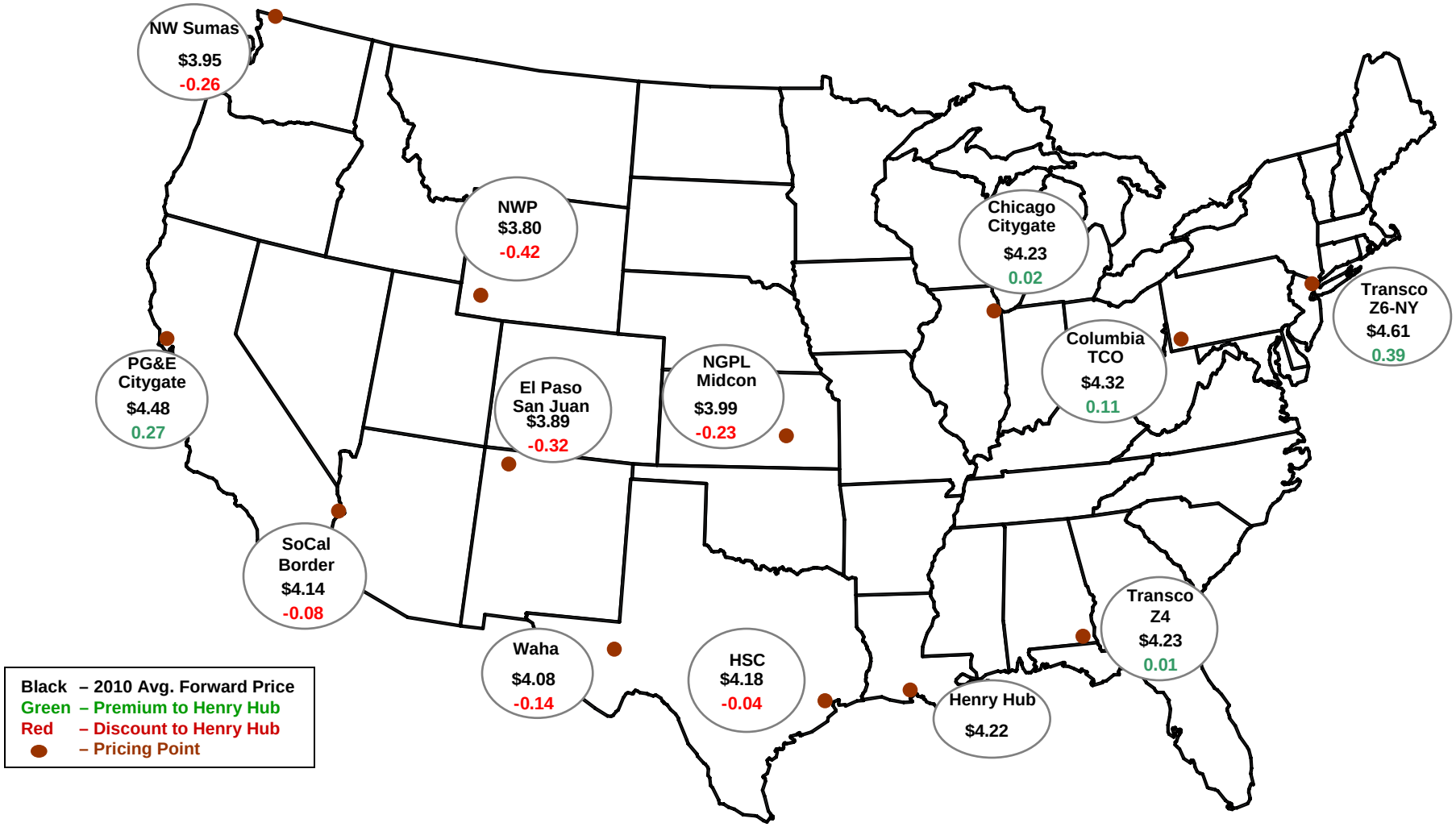
Trading on ICE shows:

- More than half of the points traded during May bidweek are up from the prior month. Last month, only a quarter of the points traded above $4/MMBtu;
- 67 of 98 points traded above $4/MMBtu.
- Northeastern hubs Algonquin citygates, Dawn and Iroquois Zone 2 traded above $4.60/MMBtu, replacing PG&E citygate – $4.52/MMBtu – as the most expensive in the country.
- The lowest prices were located in the Midwest and Rockies, where CIG (Colorado) and AECO (Alberta) traded below $3.71/MMBtu.
- AECO continues to be the most actively traded point during bidweek, with its fixed price and physical basis volumes representing 14% of all May bidweek transactions.

Source: Derived from InterContinental Exchange

Updated May 12, 2010

Average Summer Forward Gas Prices ($MMBtu)
June – October 2010

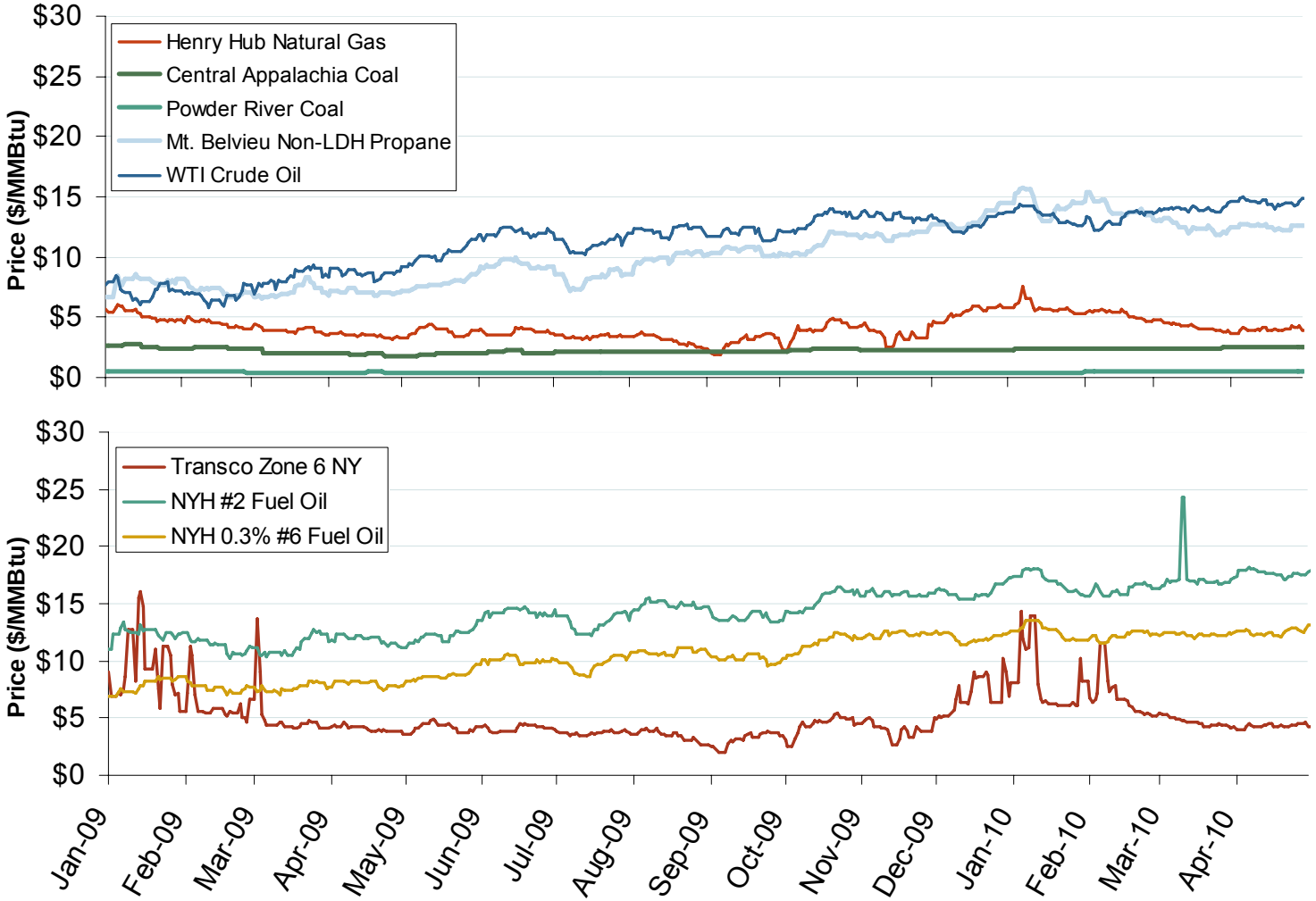


Source: Derived from Bloomberg

May 2010 Midwest Snapshot Report

Update May 10, 2010

Oil, Coal, Natural Gas and Propane Daily Spot Prices

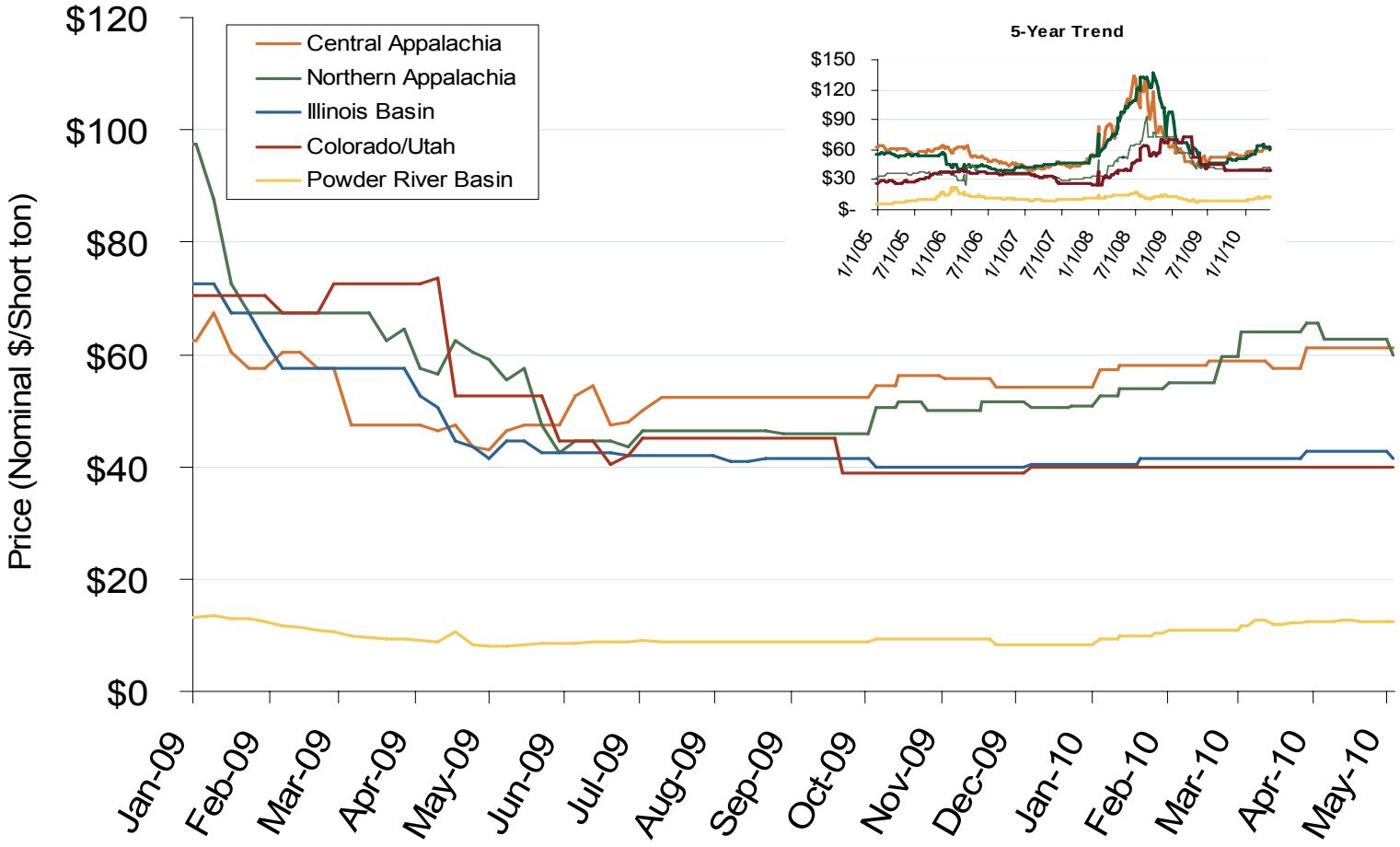


Source: Derived from *ICE* and *Bloomberg* data.

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 7, 2010

Regional Coal Spot Prices



Note: the Central Appalachian (CAPP) coal is priced at Big Sandy. All others are mine mouth prices. Prices do not include transportation costs to a plant, as those can vary widely by contract specifications. Prices exclude incremental cost of emissions allowances.

Source: Derived from *Bloomberg* data.

Updated May 7, 2010