OE ENERGY MARKET SNAPSHOT

National Version – December 2010 Data

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

Office of Enforcement
Federal Energy Regulatory Commission
January 2011

Special Report:

- **Audits in 2010 Report on Enforcement**
- **5 Year Oil Pipeline Index Update**

Division of Audits

- **Audits staff completed 52 audits of public utilities and natural gas pipeline and storage companies last year.**
- **These audits generated 210 recommendations for corrective action and included $4.1 million in monetary recoveries.**
- **Audits staff addressed several significant accounting issues including the International Financial Reporting Standards and the Capitalization of Interest During Construction.**

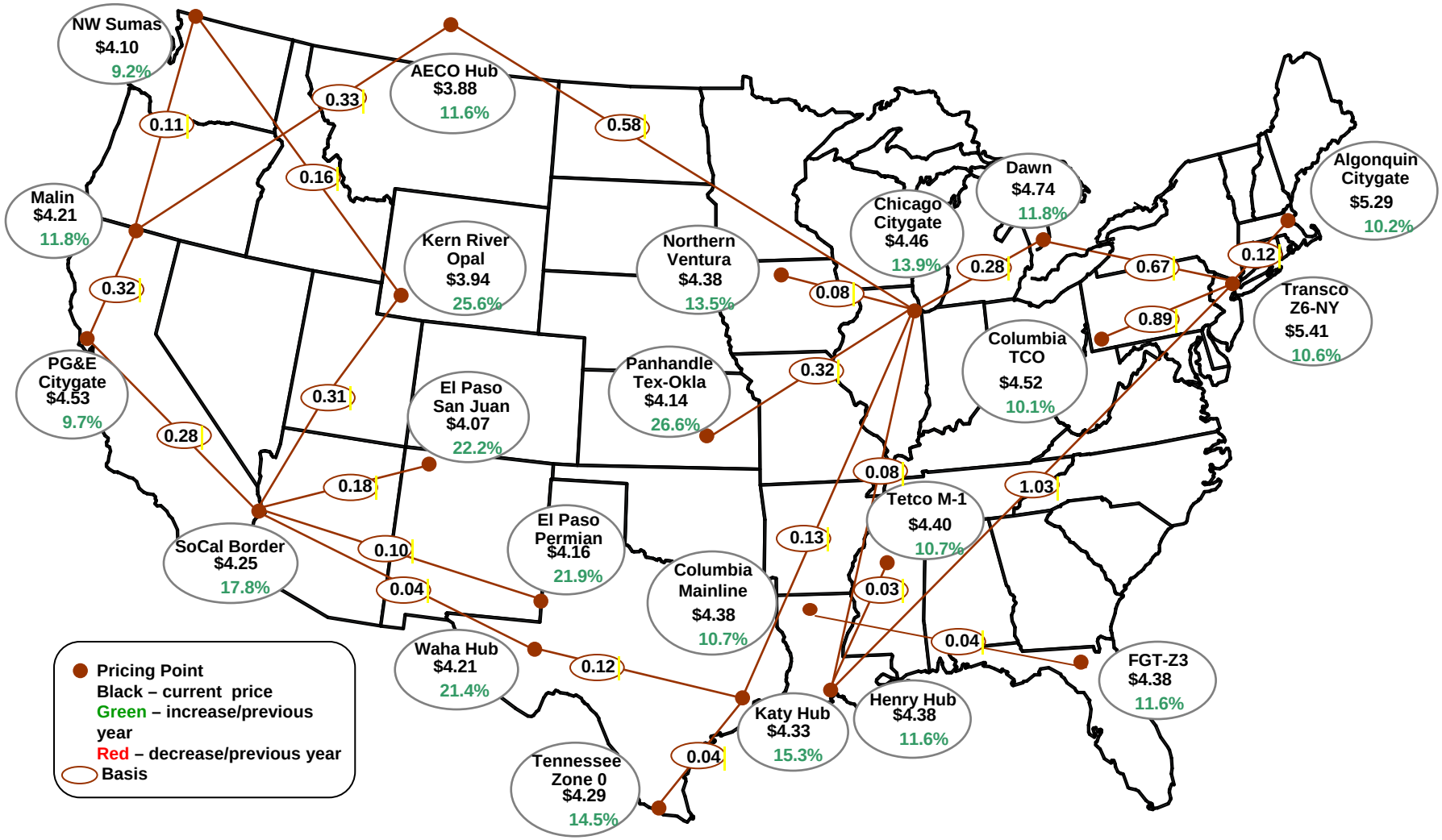
Order Establishing Index for Oil Price Change Ceiling Levels

- The December 16, 2010 Order establishes the current Five-Year Oil Pipeline Pricing Index for just and reasonable rates.
- The Commission uses the Kahn methodology to measure changes in capital and operating cost per barrel-mile over the previous five year period (Form 6 data).
- A Notice of Inquiry (NOI) of June 15, 2010 proposed using Producer Price Index for Finished Goods plus 1.3 percent (PPI-FG +1.3) as Pricing Index for next five years.
- The Association of Oil Pipelines (AOPL) cited Department of Transportation's safety regulations related to pipeline integrity and risk management as the basis for the cost increases they have experienced over the last five years.
- Shippers stated that safety regulations are not unique to the pipelines, as changes to policy and environmental regulations have impacted shippers as well. They argue that shippers should not be required to bear the burden of the added costs that pipelines have incurred as a result of these regulations.

Current Five Year Index =
Producer Price Index for Finished Goods plus 2.65%
(PPI-FG+2.65)

Natural Gas and Fuel Markets

Average Spot Gas Prices, 2010 ($MMBtu)



Source: Derived from *Platts* data.

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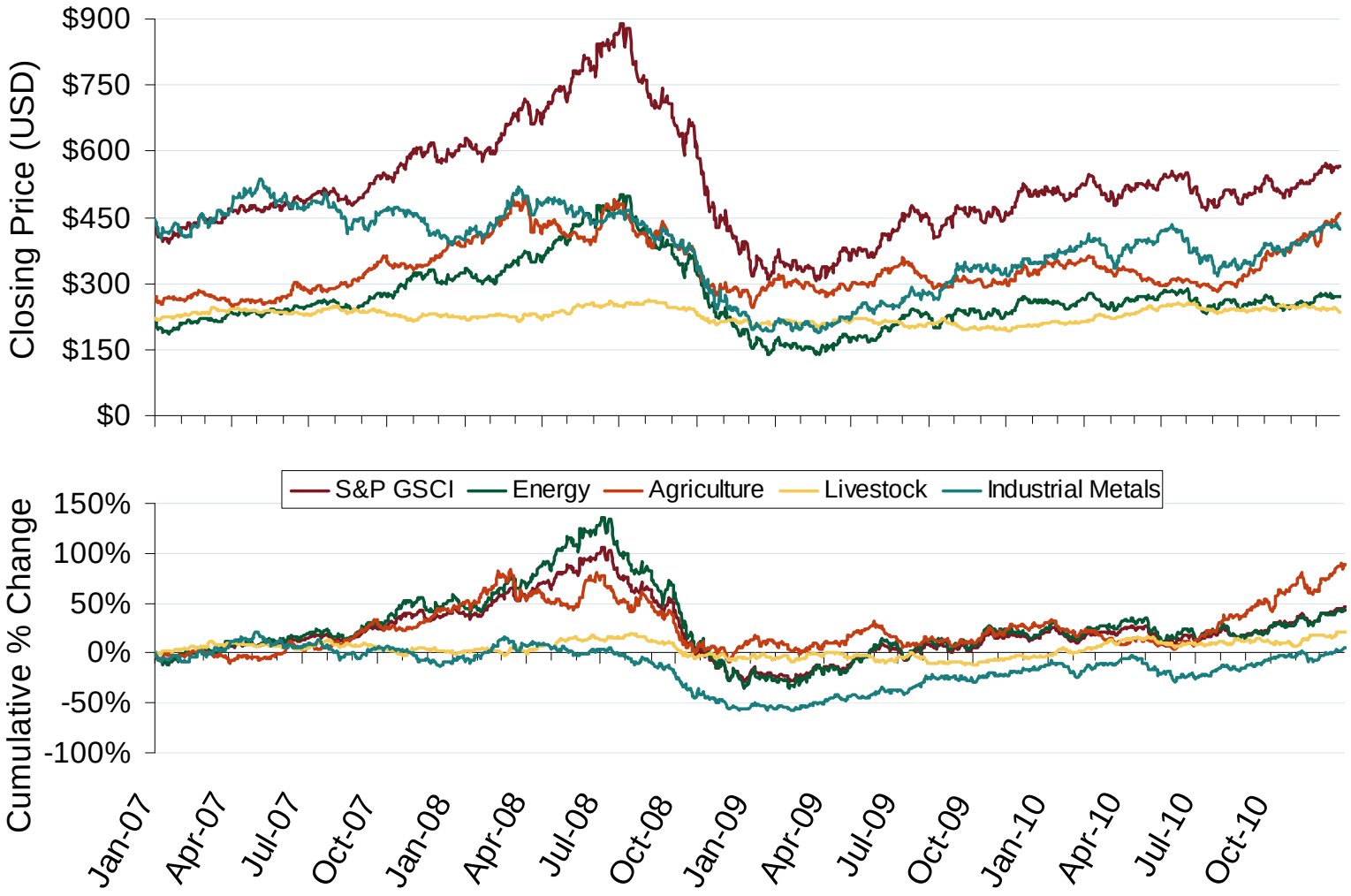
S&P Goldman Sachs Commodity Index Official Closing Price



Source: Derived from *Bloomberg* data.

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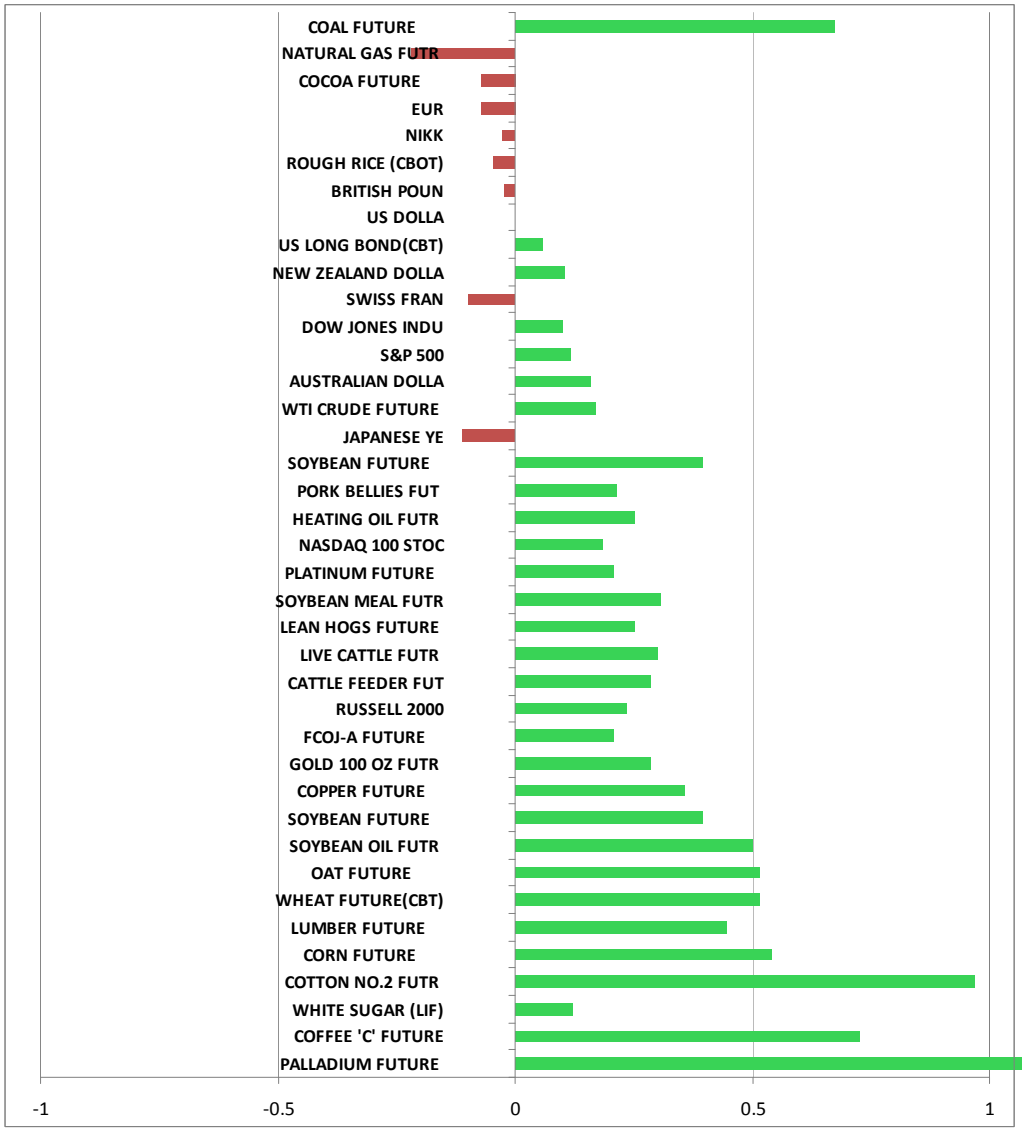
Natural Gas Price Change Runs Counter to Many Markets



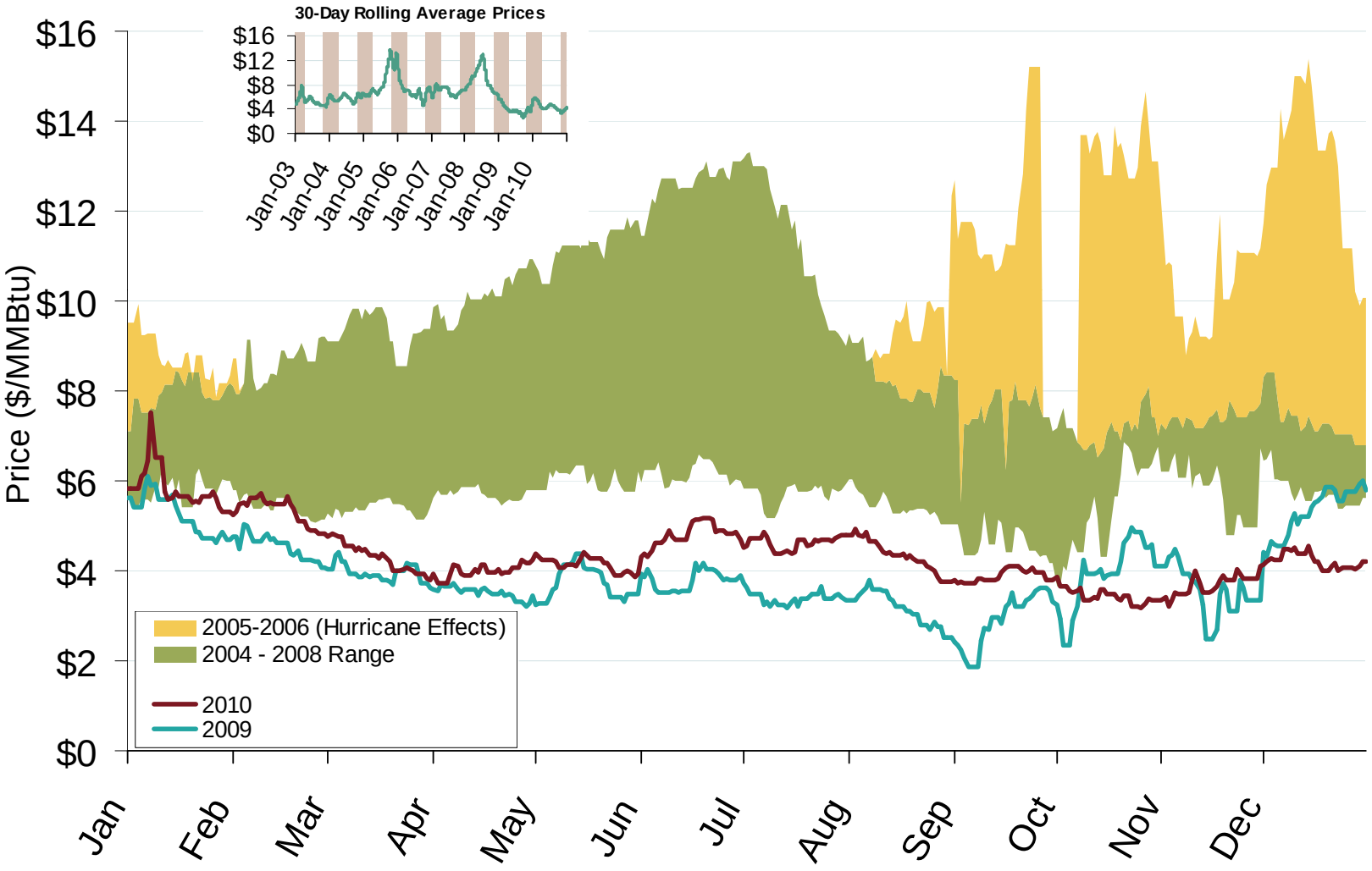
% Change in Price from Jan to Dec 2010

Source: Derived from *Bloomberg* data.

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

Federal Energy Regulatory Commission • Market Oversight • www.ferc.gov/oversight

Henry Hub Natural Gas Daily Spot Prices



Source: Derived from *Platts* data.

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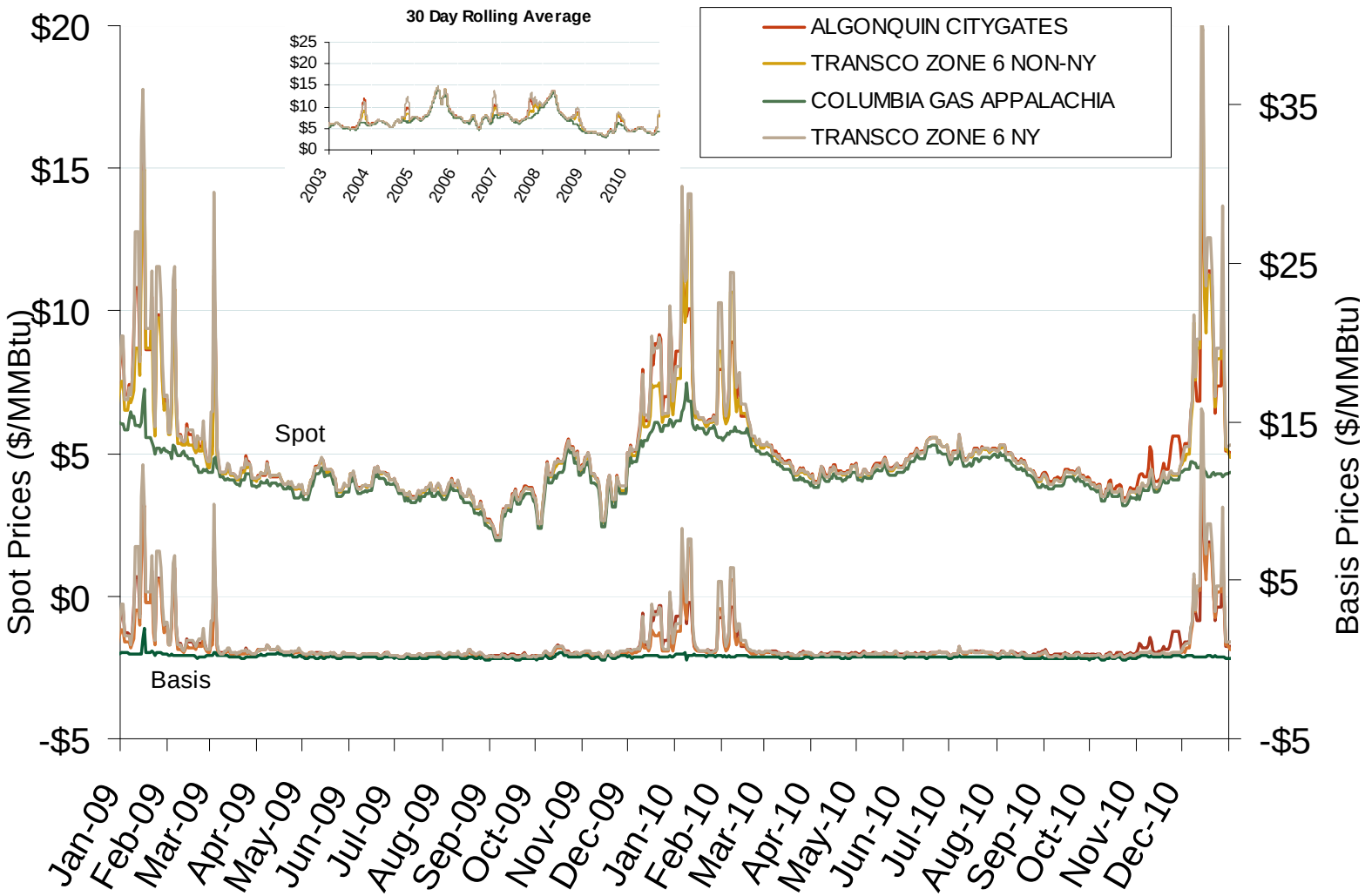
Northeastern Spot Prices and Basis



Source: Derived from *Platts* data.

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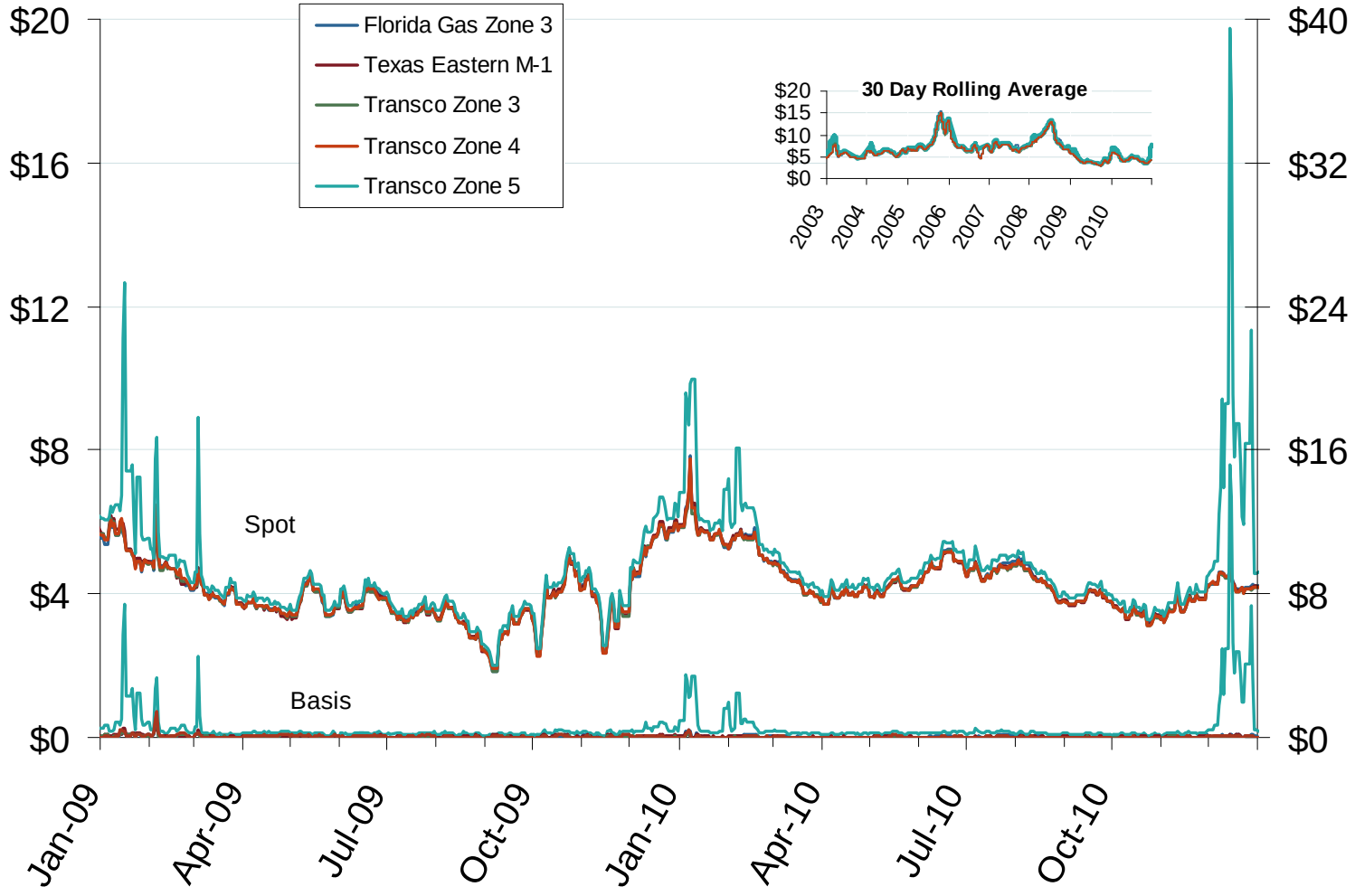
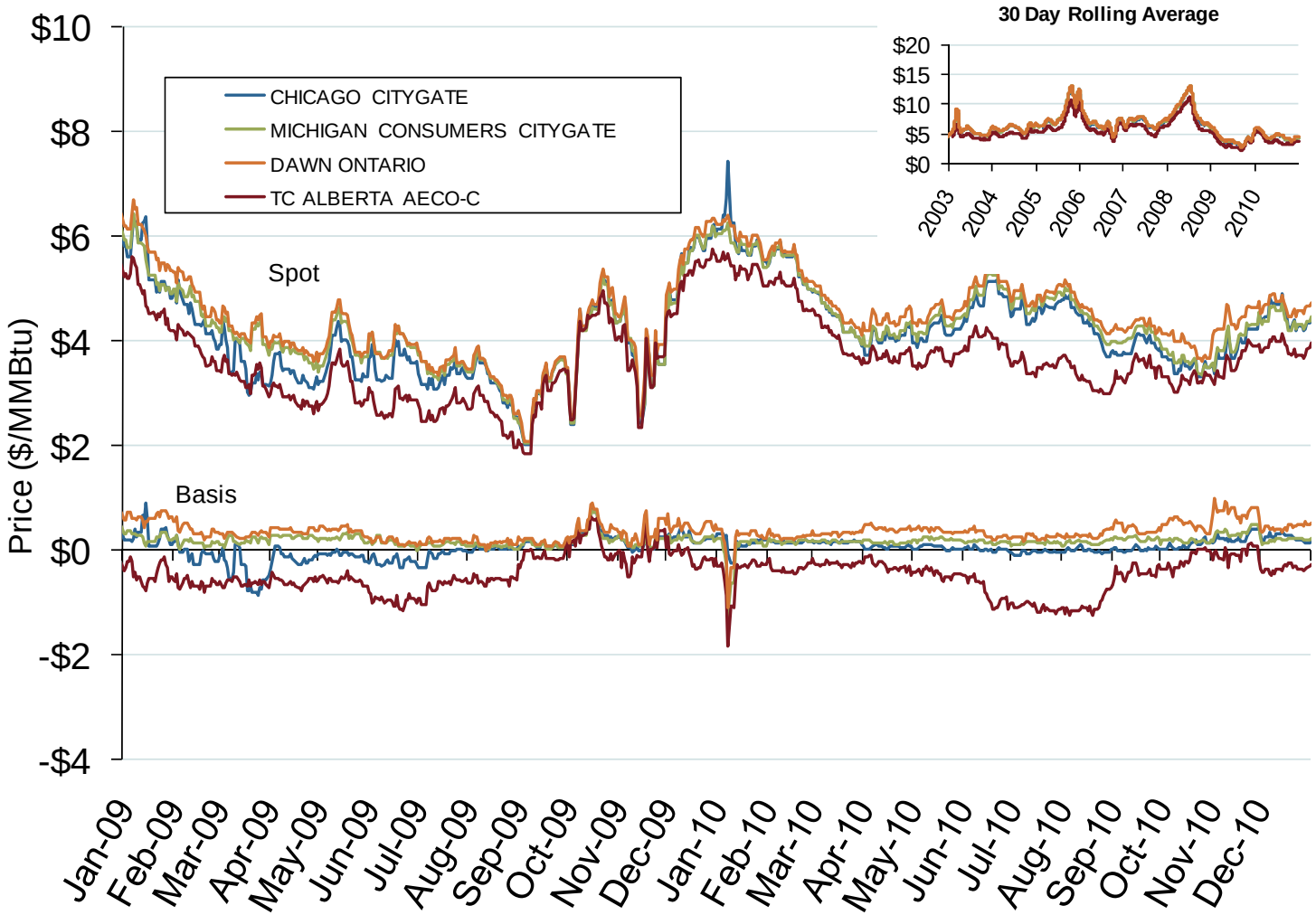
Southeastern Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated January 10, 2011

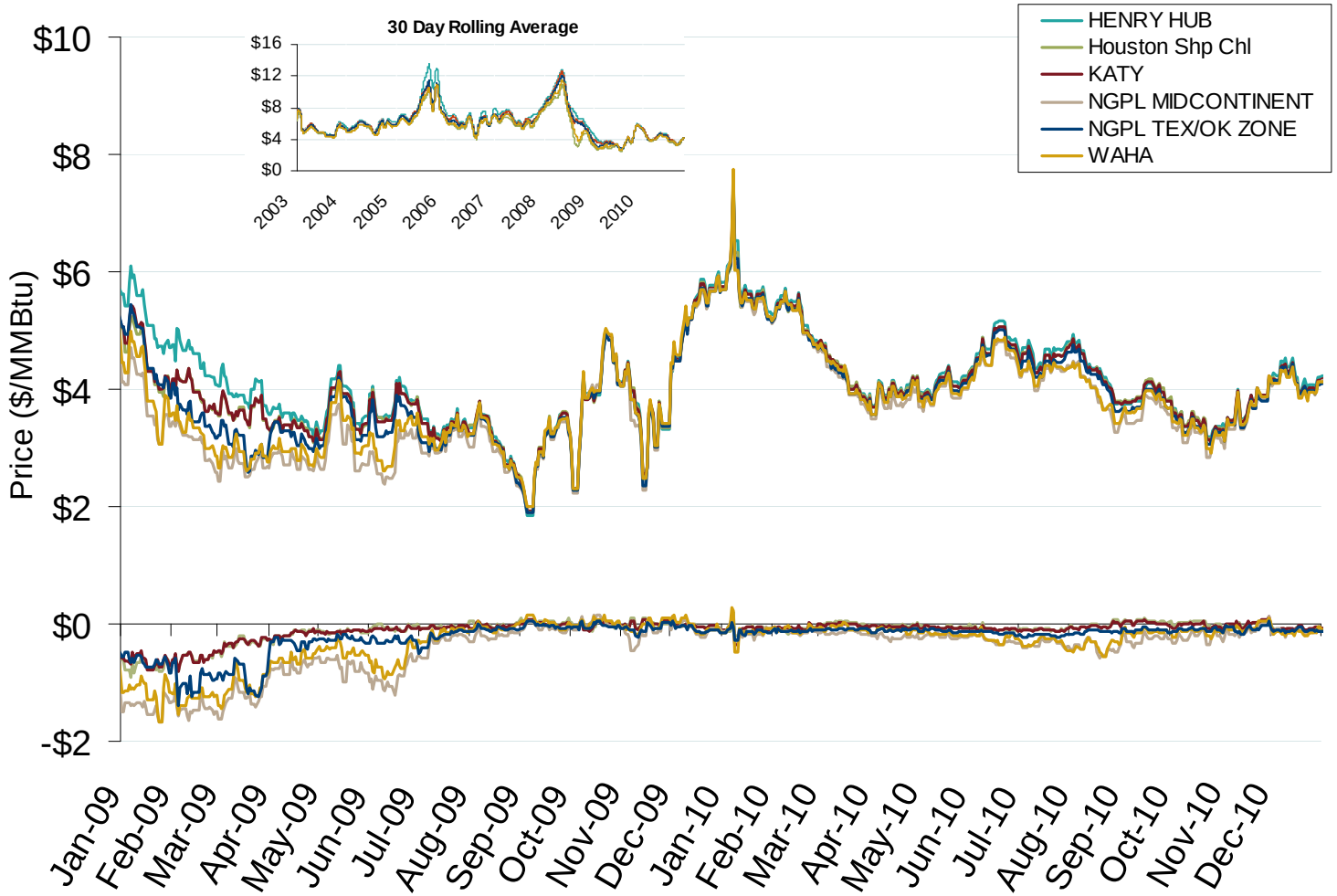
Midwestern Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

Updated January 10, 2011

Gulf Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

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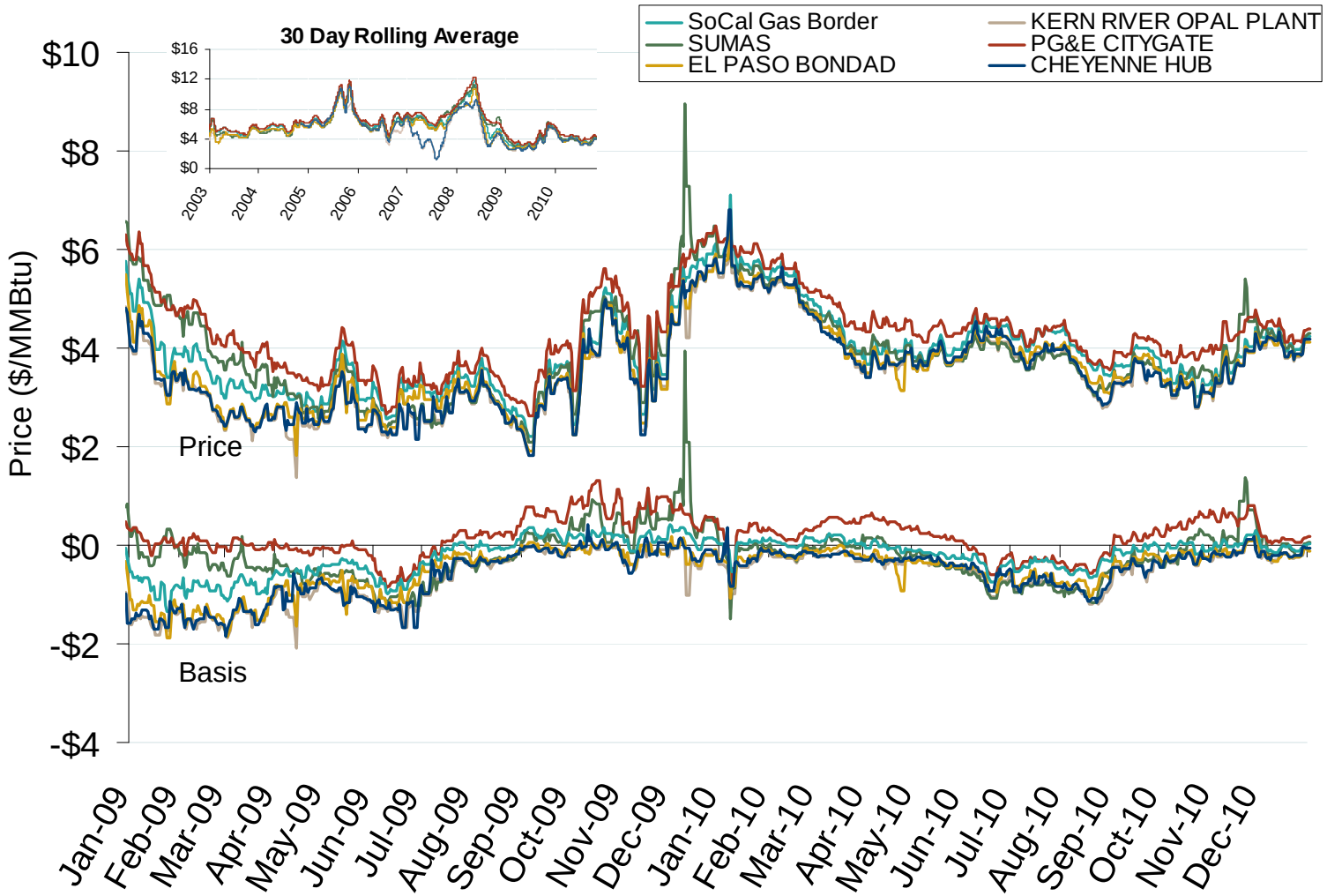
Western Day-Ahead Hub Spot Prices and Basis



Source: Derived from *Platts* data.

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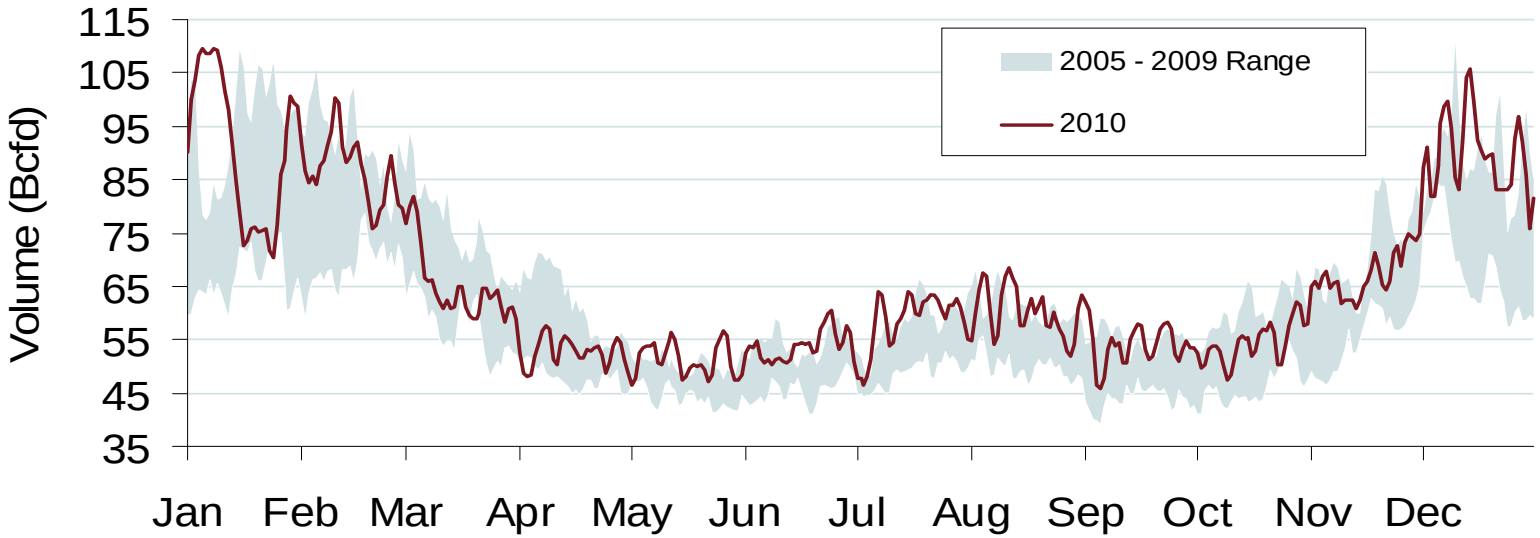
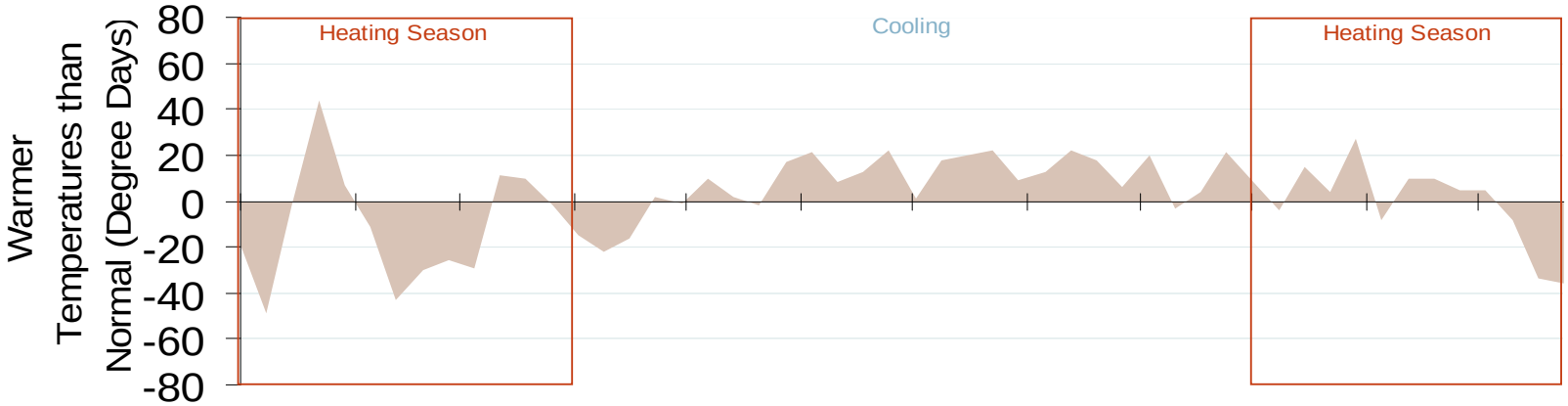
Total U.S. Natural Gas Demand (All Sectors) and Temperatures





Source: Derived from *Bentek Energy* data.

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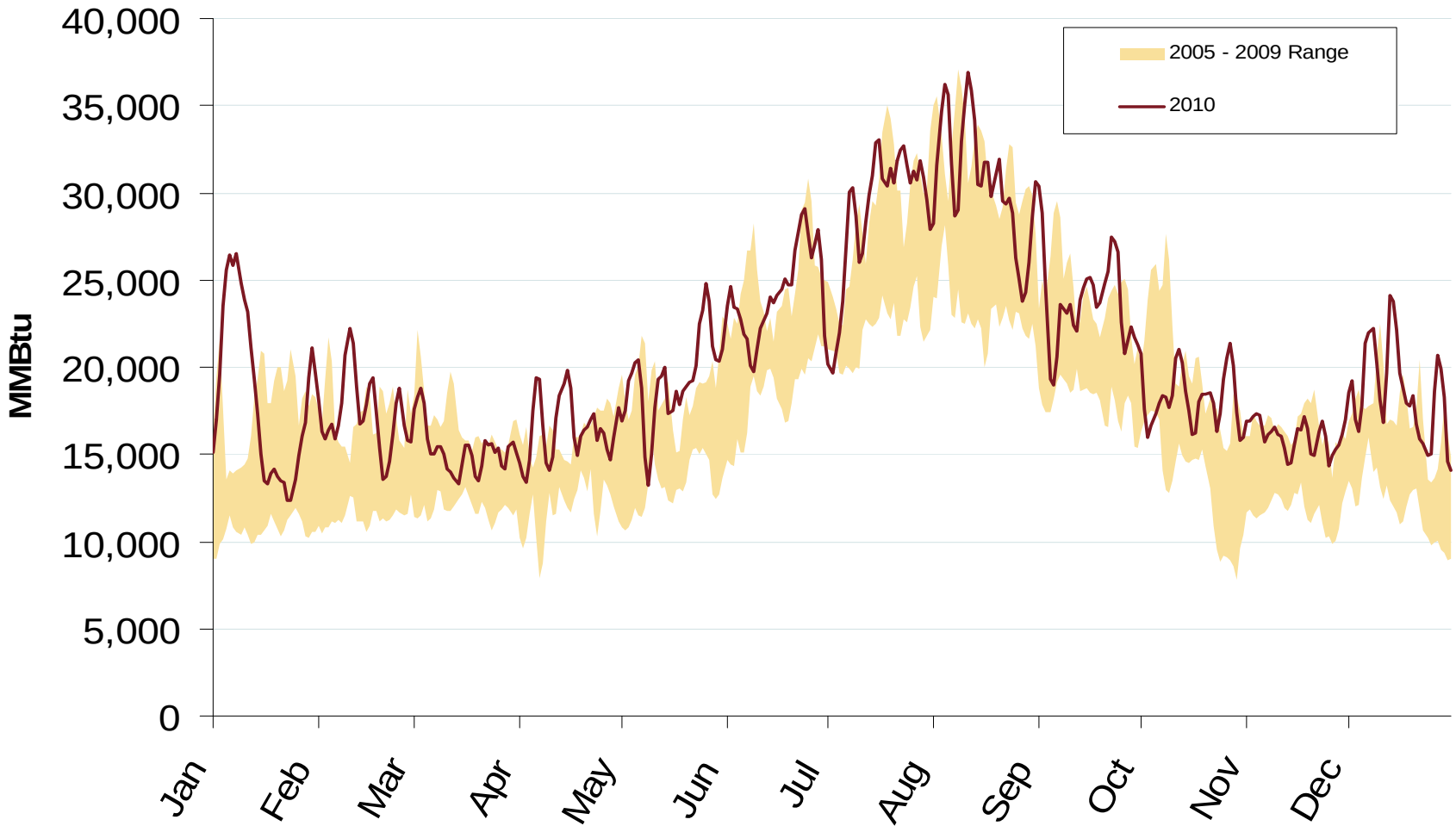
U.S. Natural Gas Consumption for Power Generation



Source: Derived from *Bentek* data.
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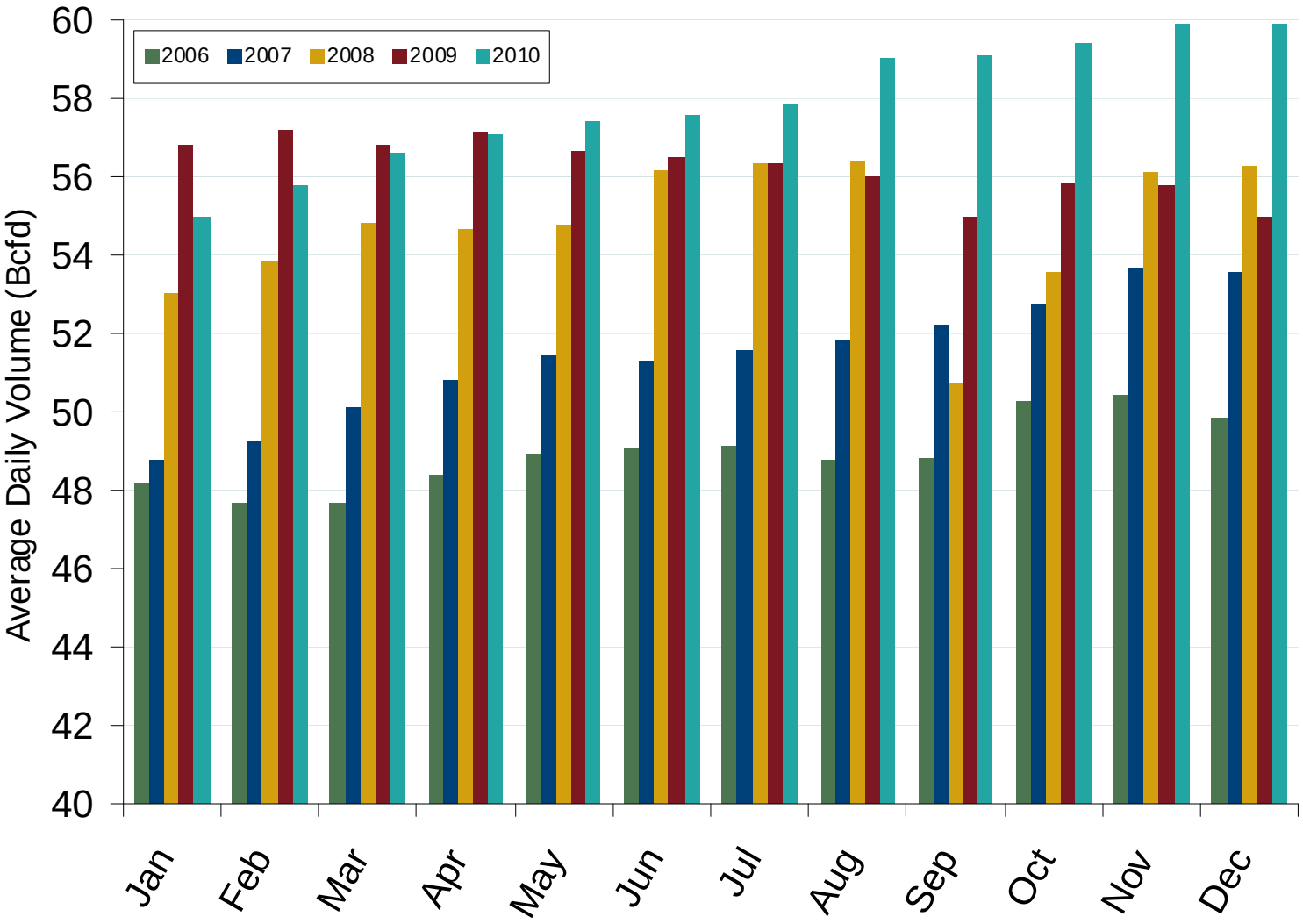
U.S. Dry Gas Production



Source: Derived from *EIA and Bentek data.*

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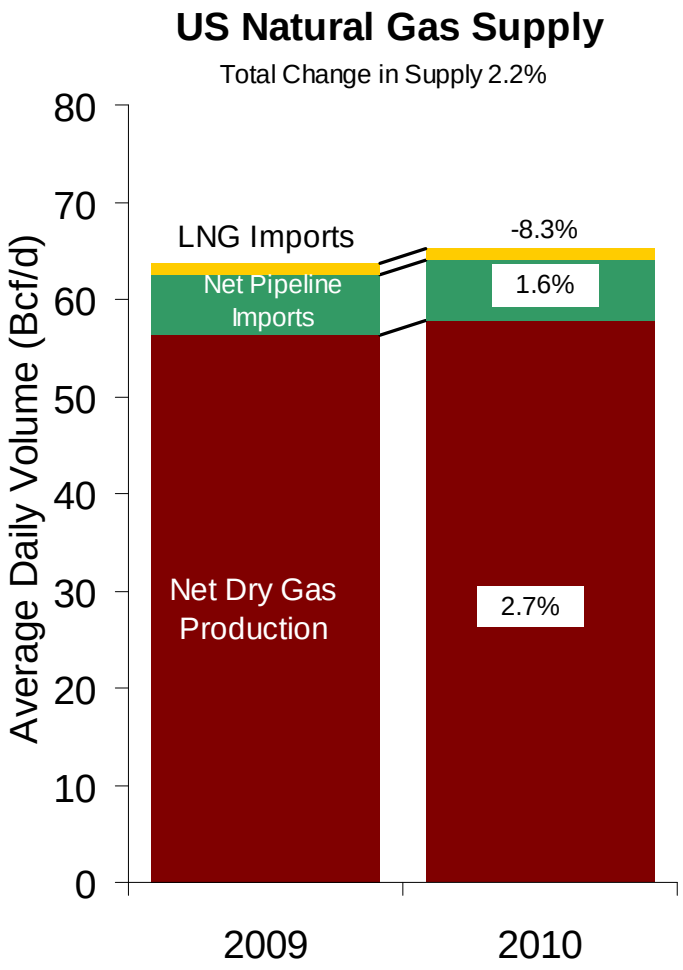
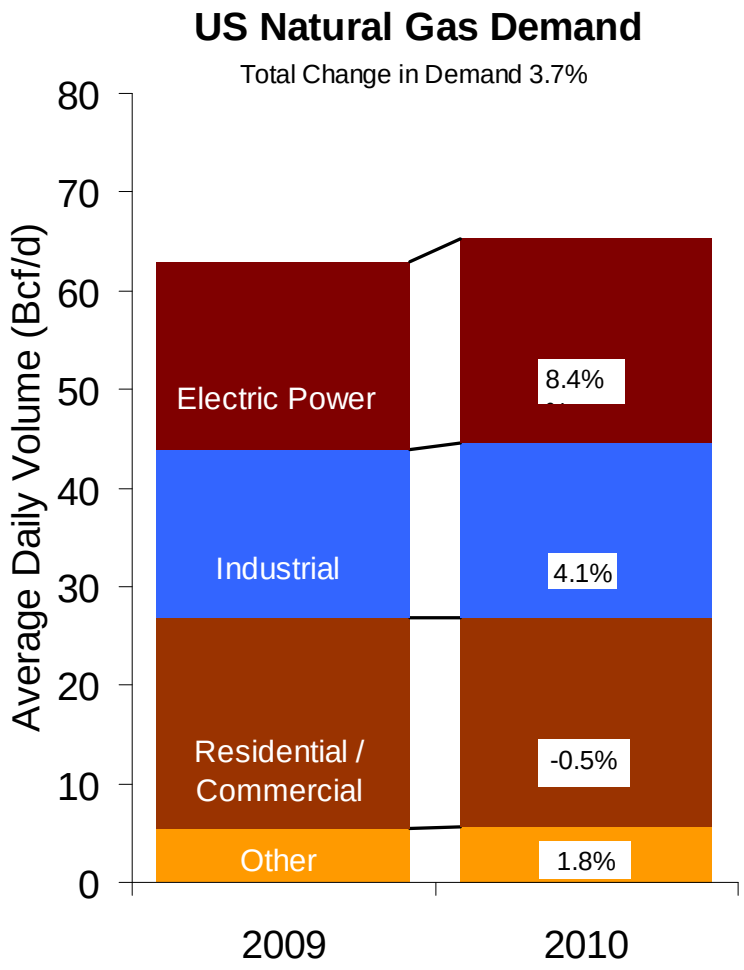
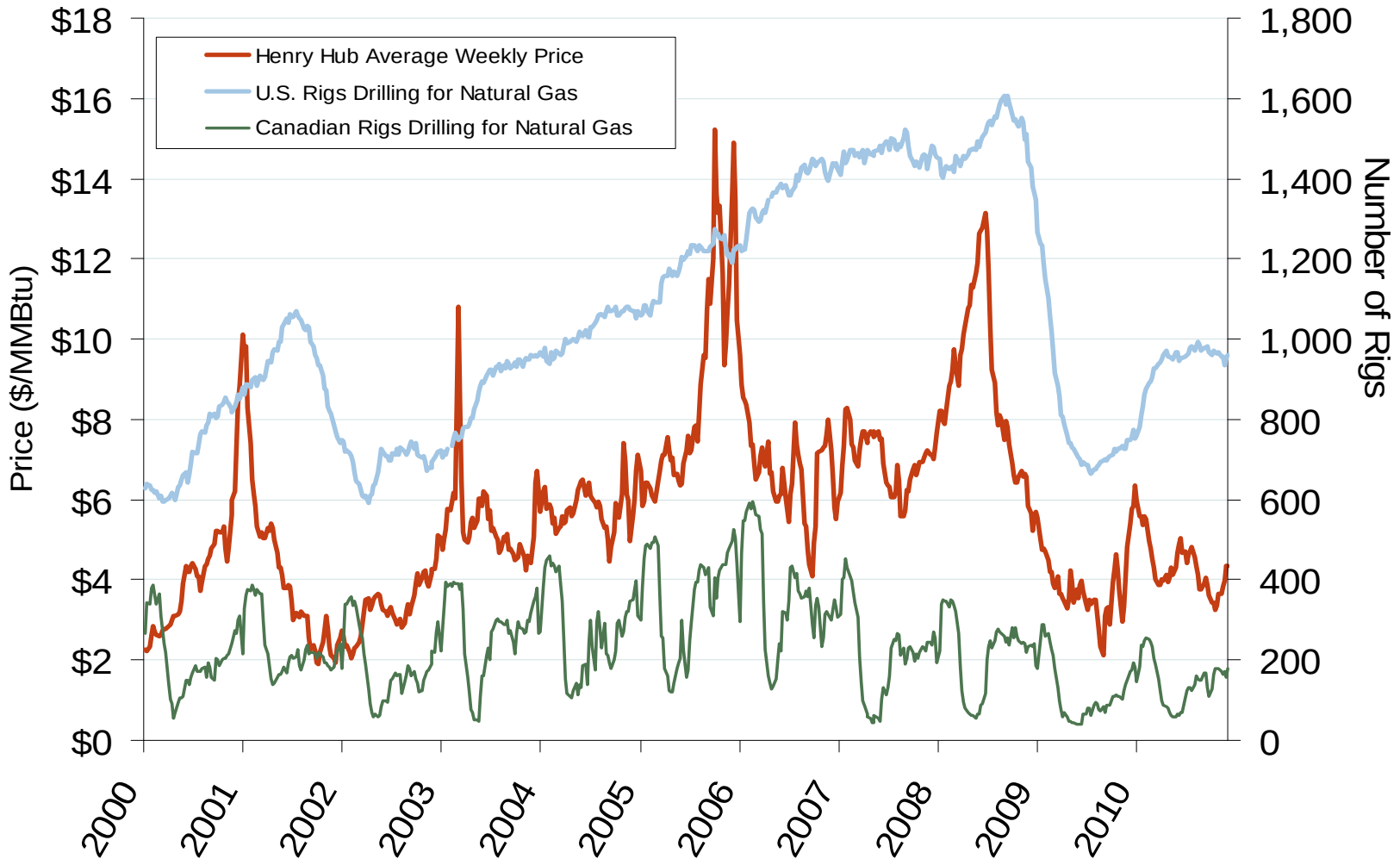
U.S. Natural Gas Supply and Demand 2009 vs. 2010: January - December





Source: Derived from *Bentek* data.

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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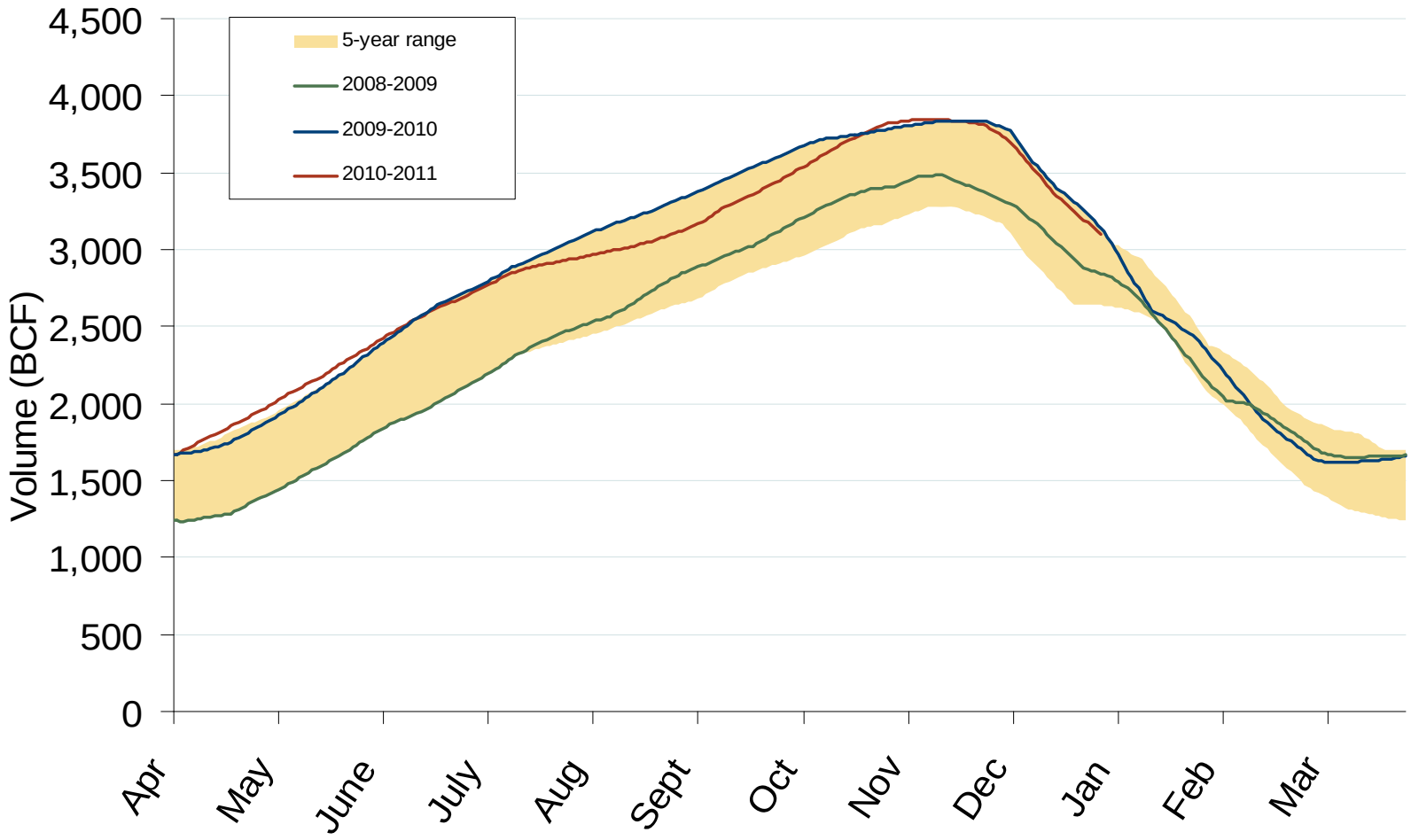
Total U.S. Working Gas in Storage



Source: Derived from *EIA* data.

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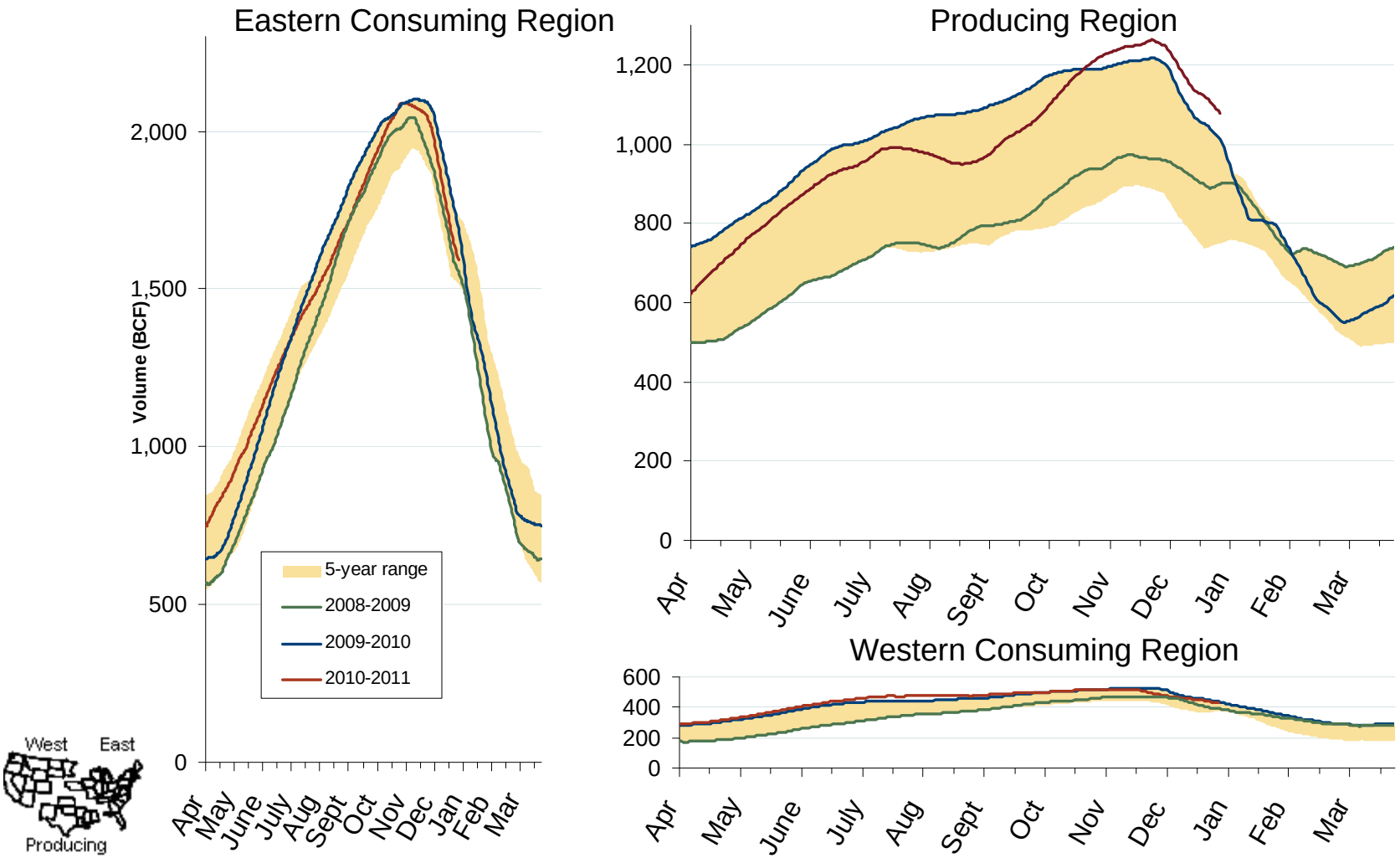
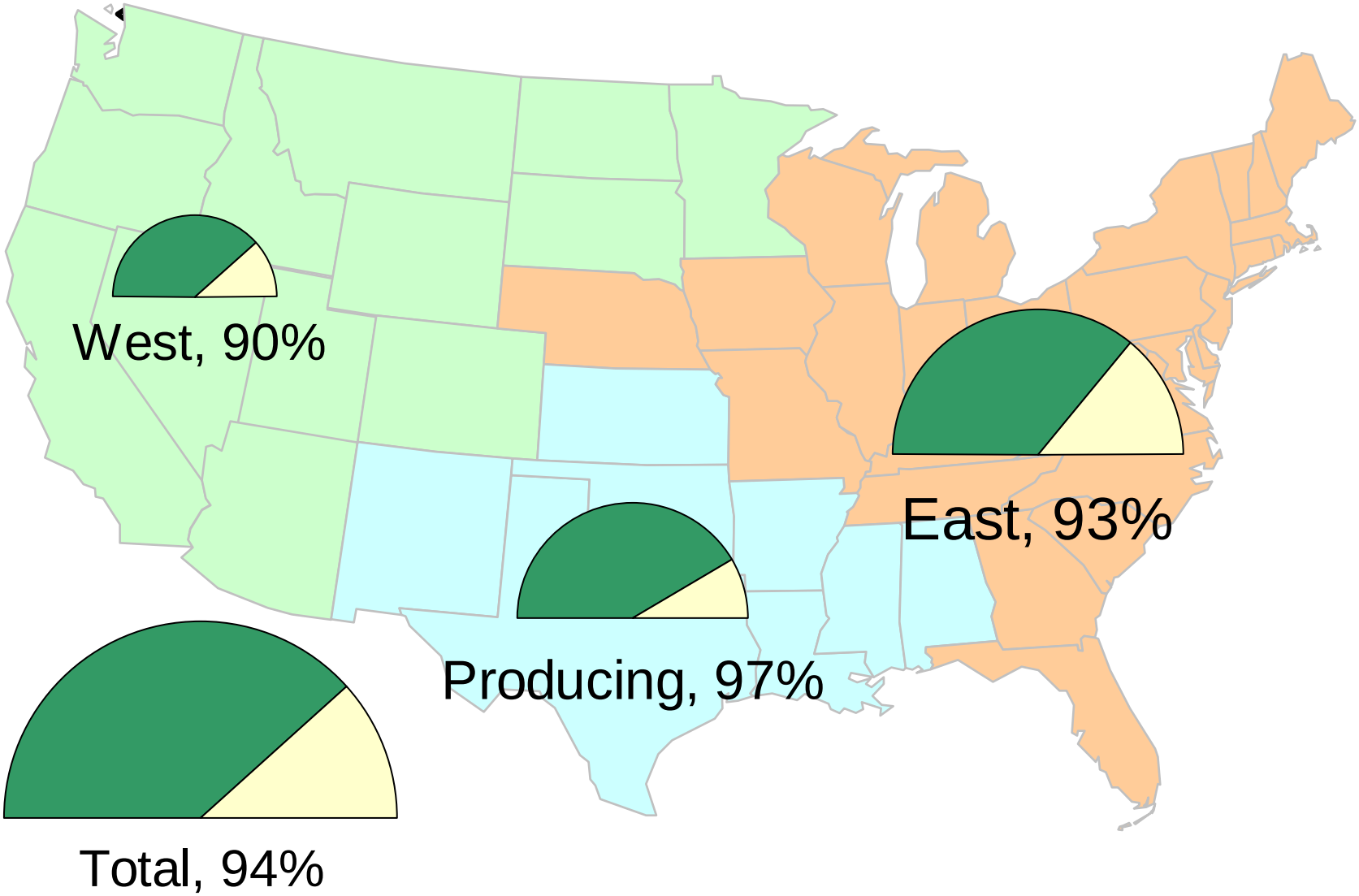
Regional Totals of Working Gas in Storage



Source: Derived from *EIA* data.

Natural Gas Storage Inventories – December 31, 2010



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

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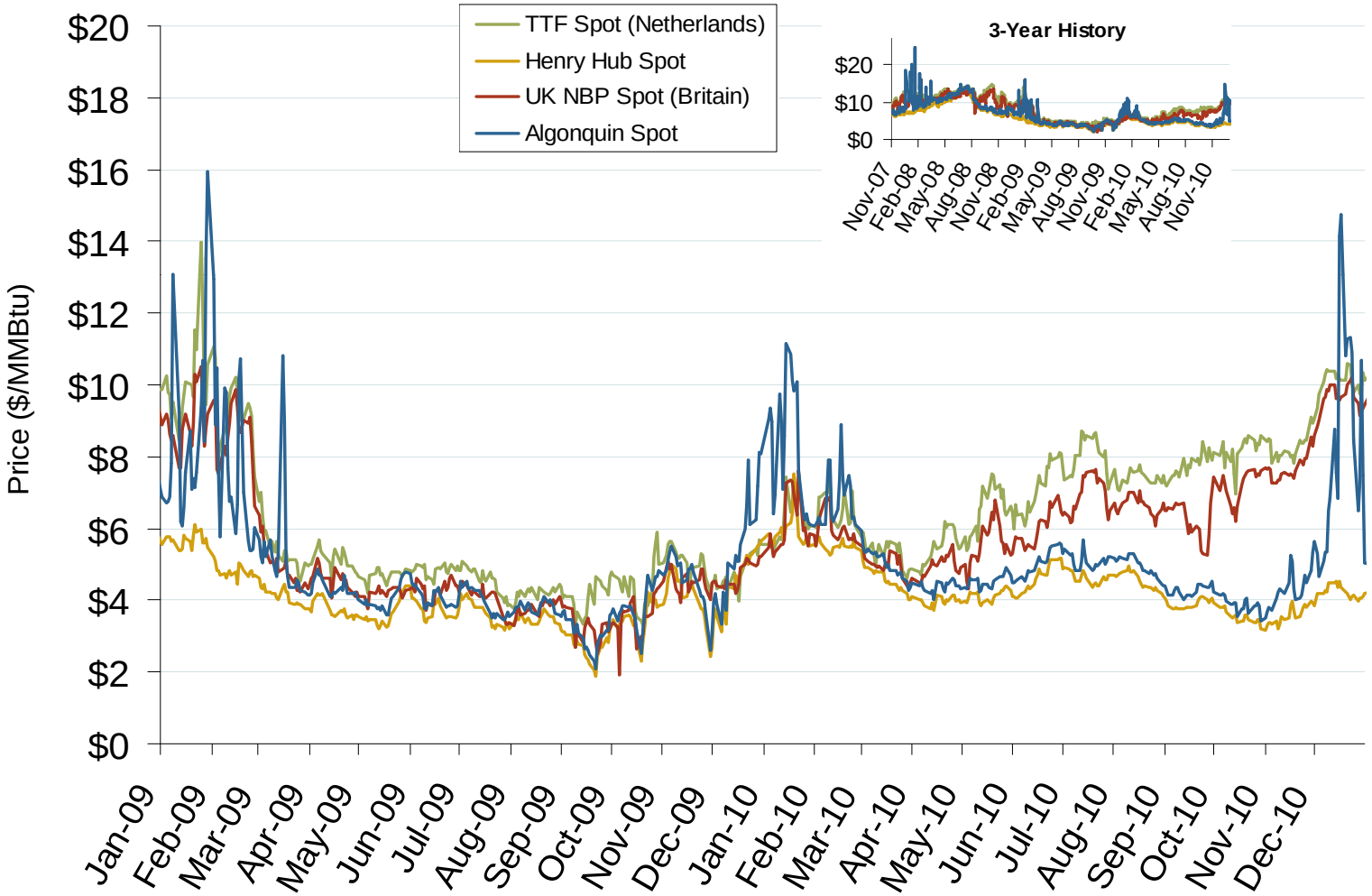
Atlantic Basin European and US Spot Natural Gas Prices



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

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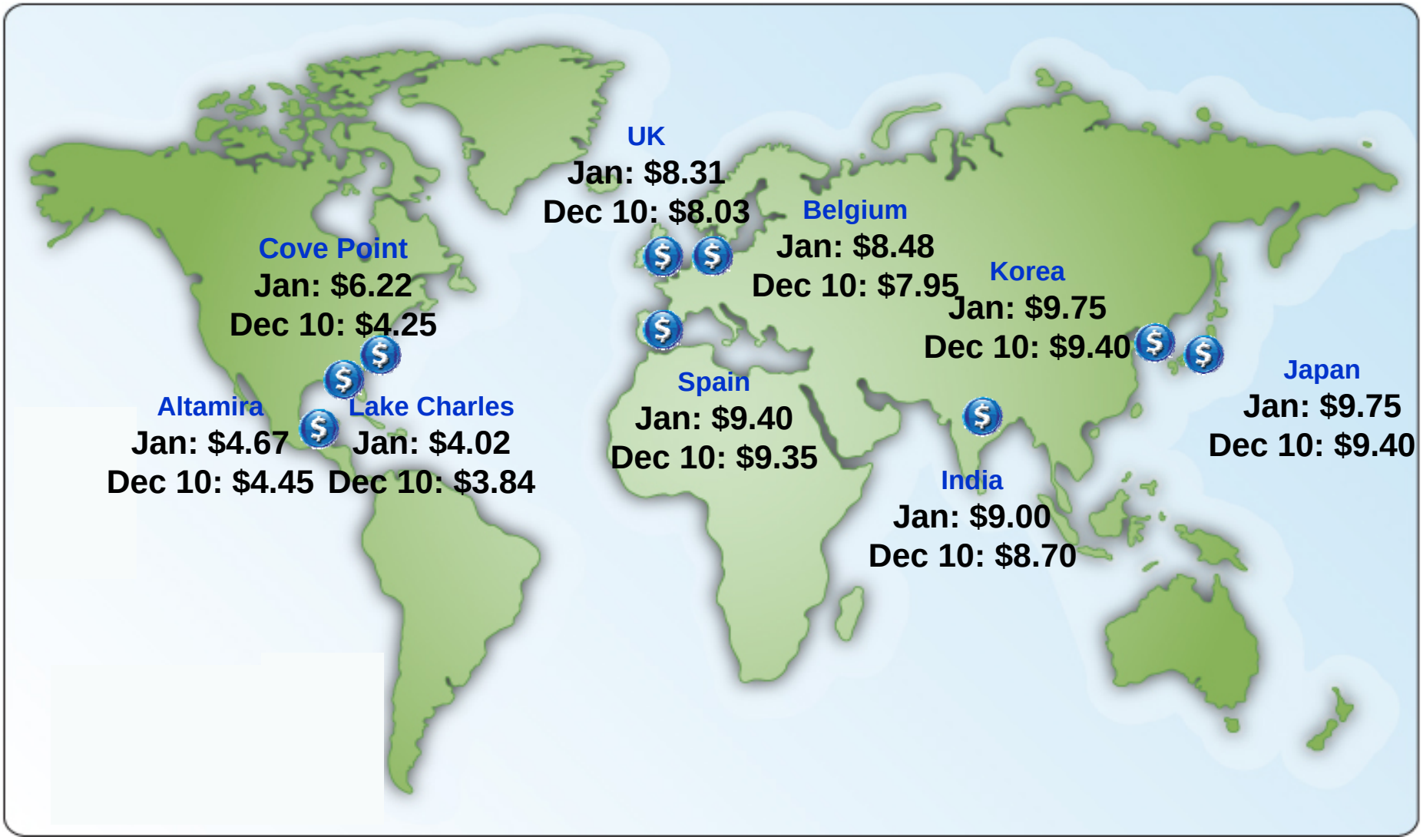
World LNG Estimated January 2011 Landed Prices



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

January 2011 National Snapshot Report

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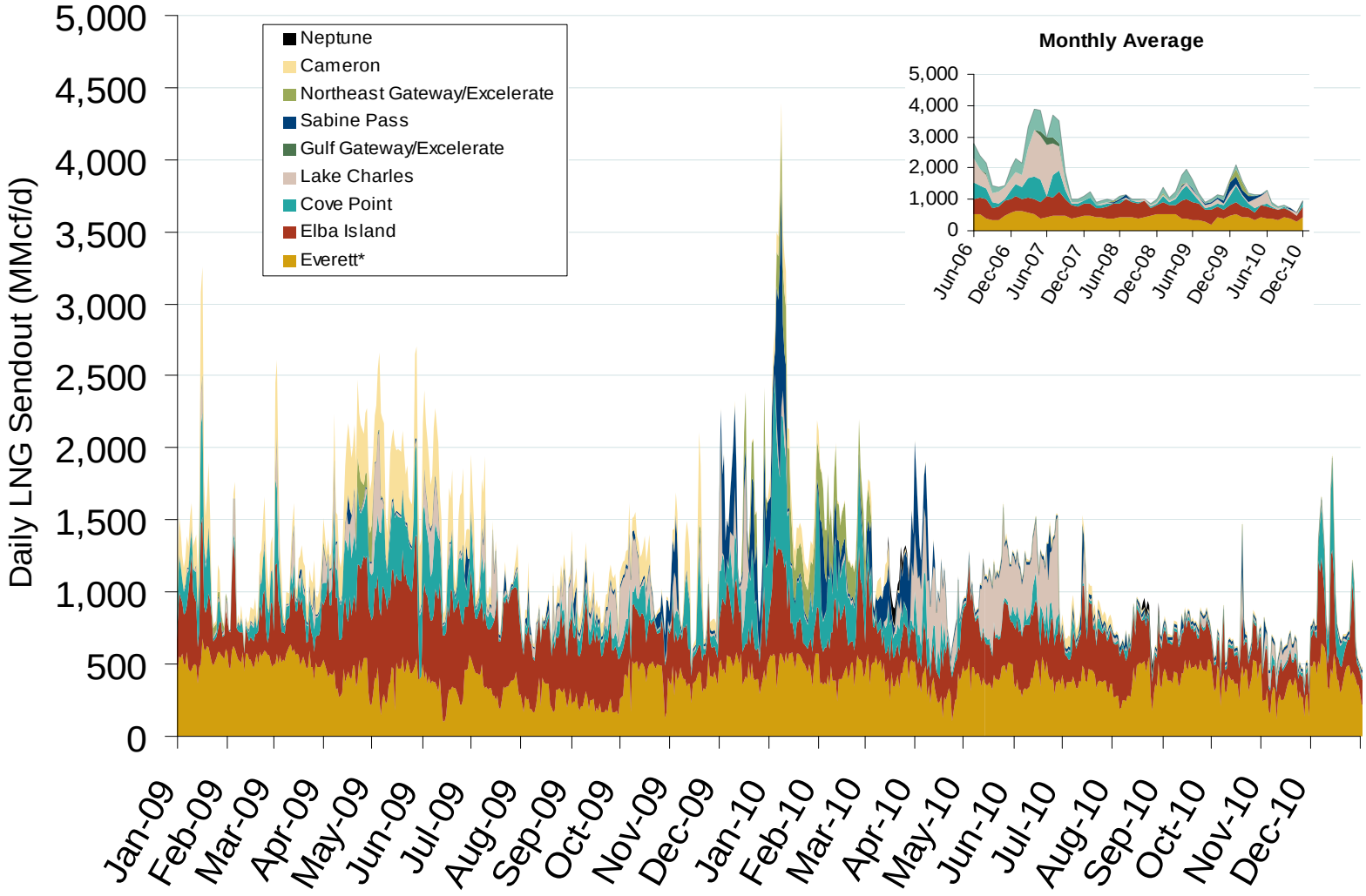
Daily Gas Sendout from Existing U.S. LNG Facilities



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.

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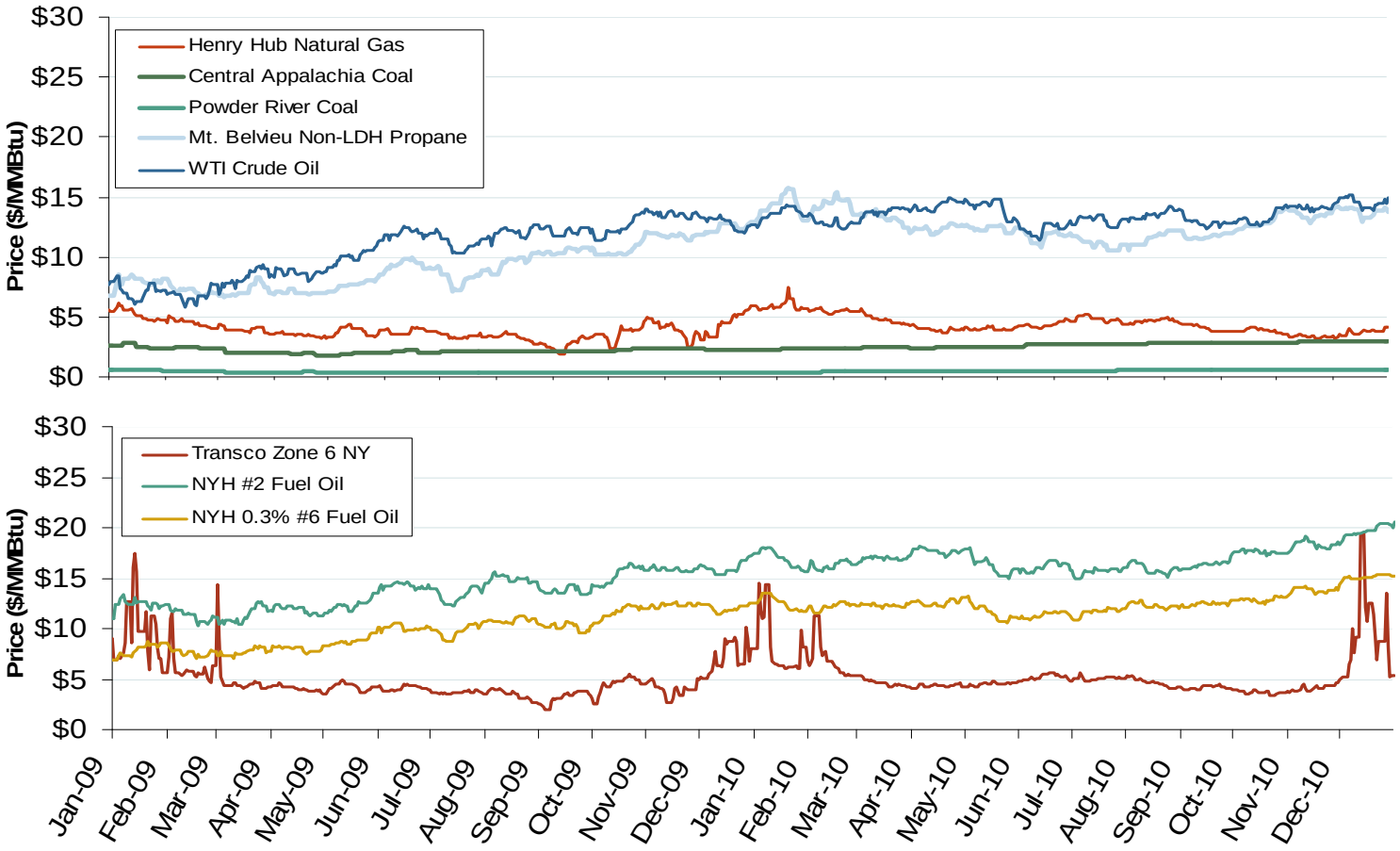
Oil, Coal, Natural Gas and Propane Daily Spot Prices

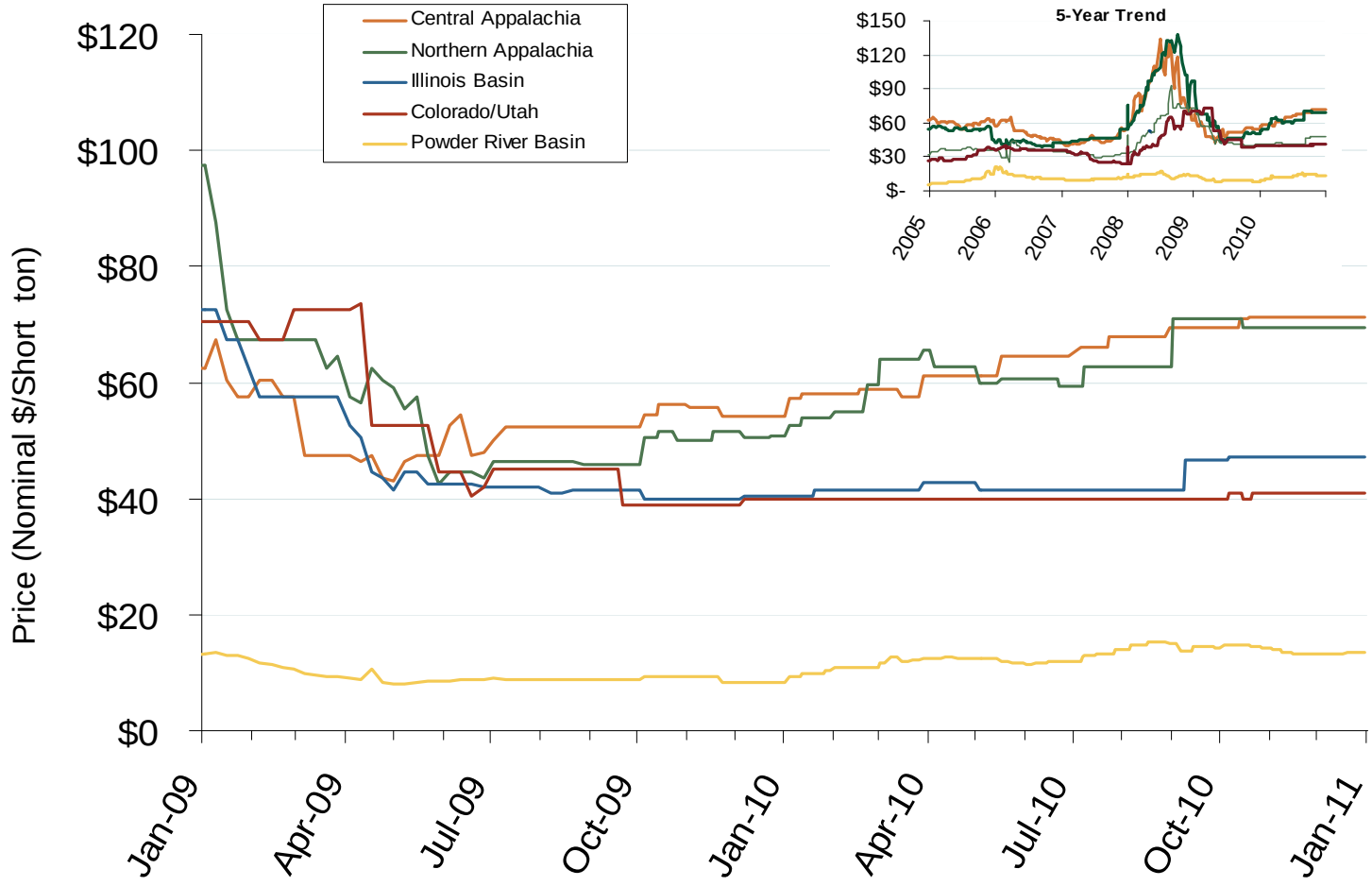


Source: Derived from *Bloomberg* and *ICE* data.

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: January 06, 2011

Regional Coal Spot Prices

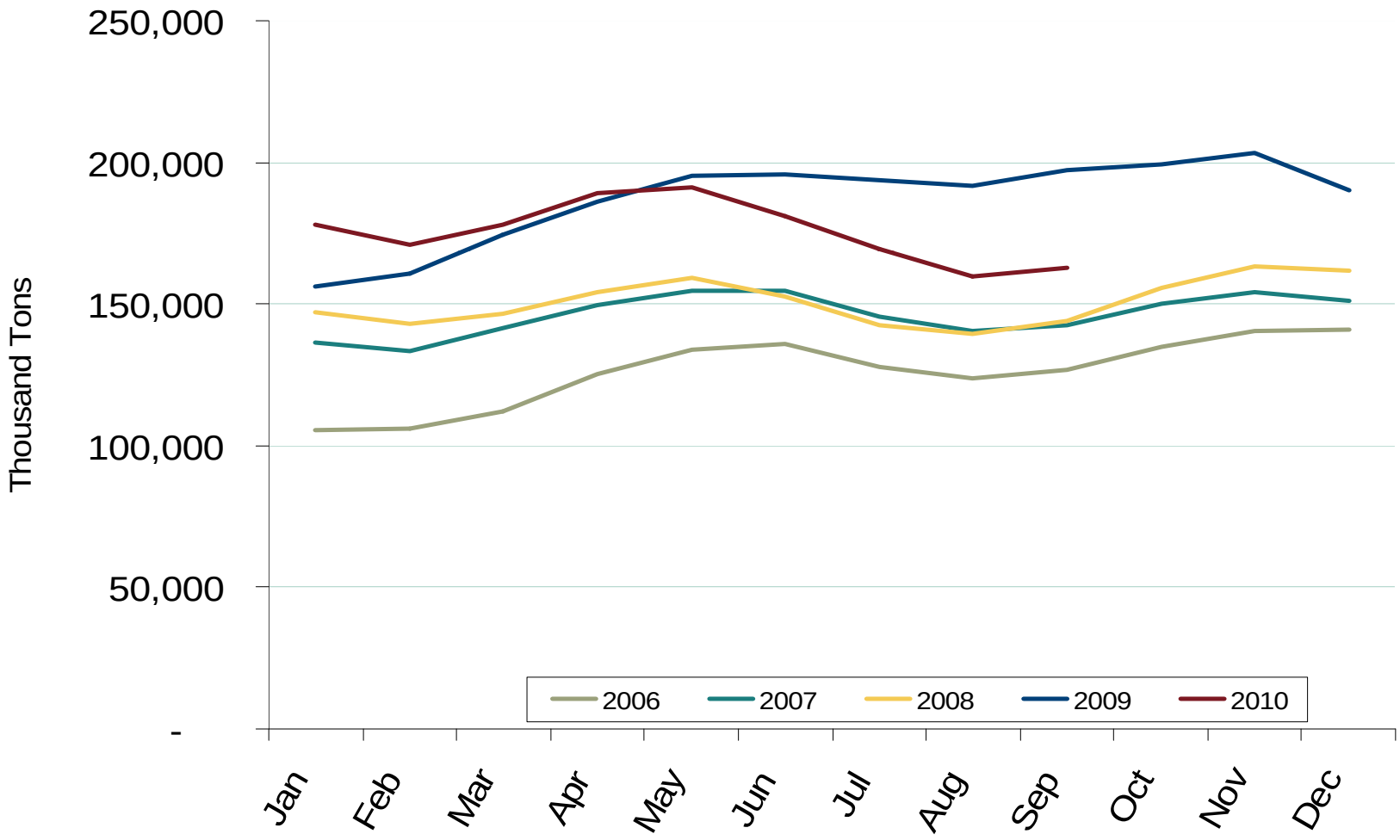


Source: Derived from *Bloomberg* data.

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.

Updated: January 06, 2011

U.S. Coal Stockpiles at Electric Power Generating Facilities



Source: Energy Information Administration. Excludes Industrial and Commercial Plants.

Updated January 10, 2011

Electricity Markets

Electric Market Overview: On-Peak Spot Electric Prices

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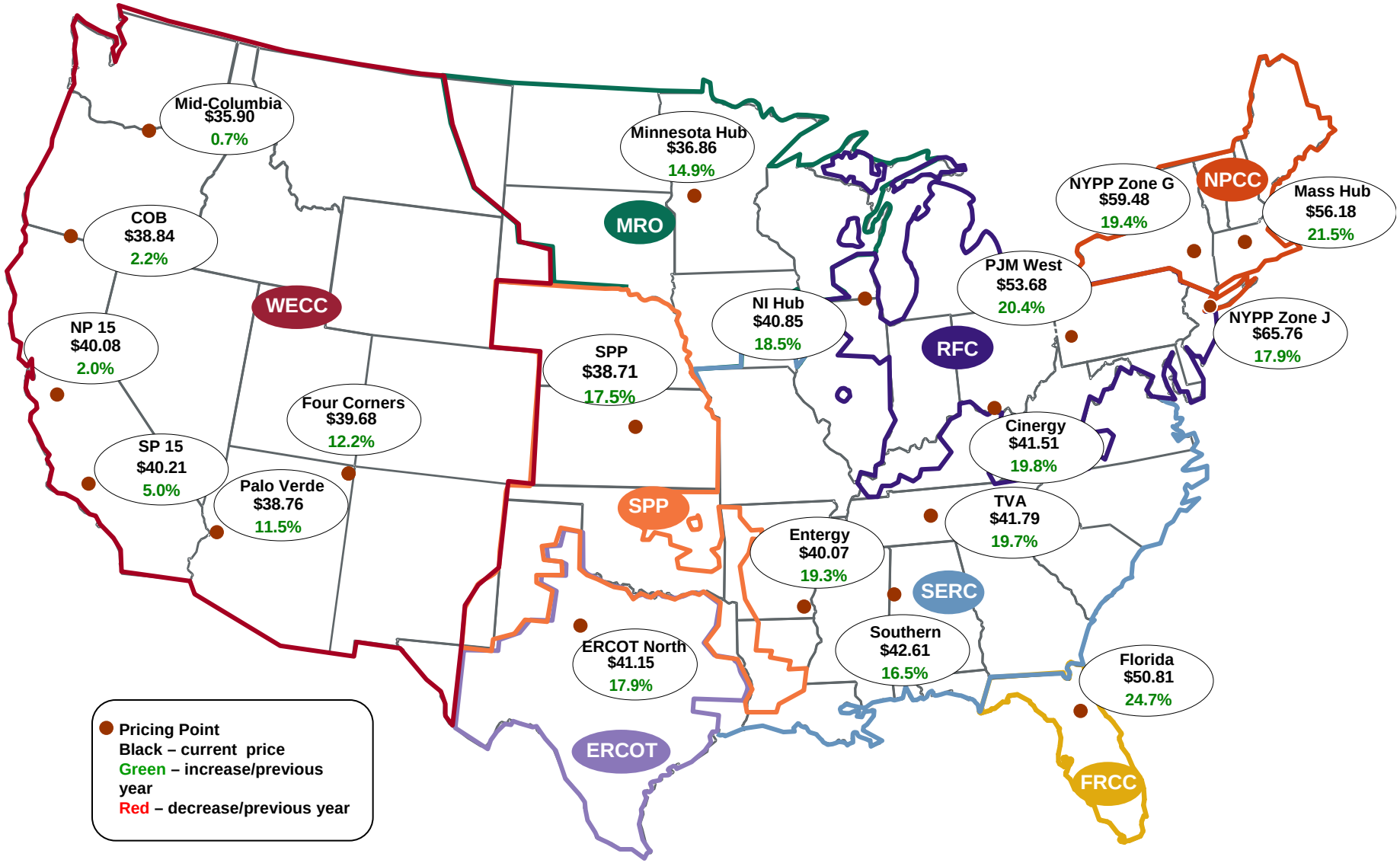
Average On-Peak Spot Electric Prices 2010 ($/MWh)



Source: Derived from *Platts* data.

Updated January 4, 2011

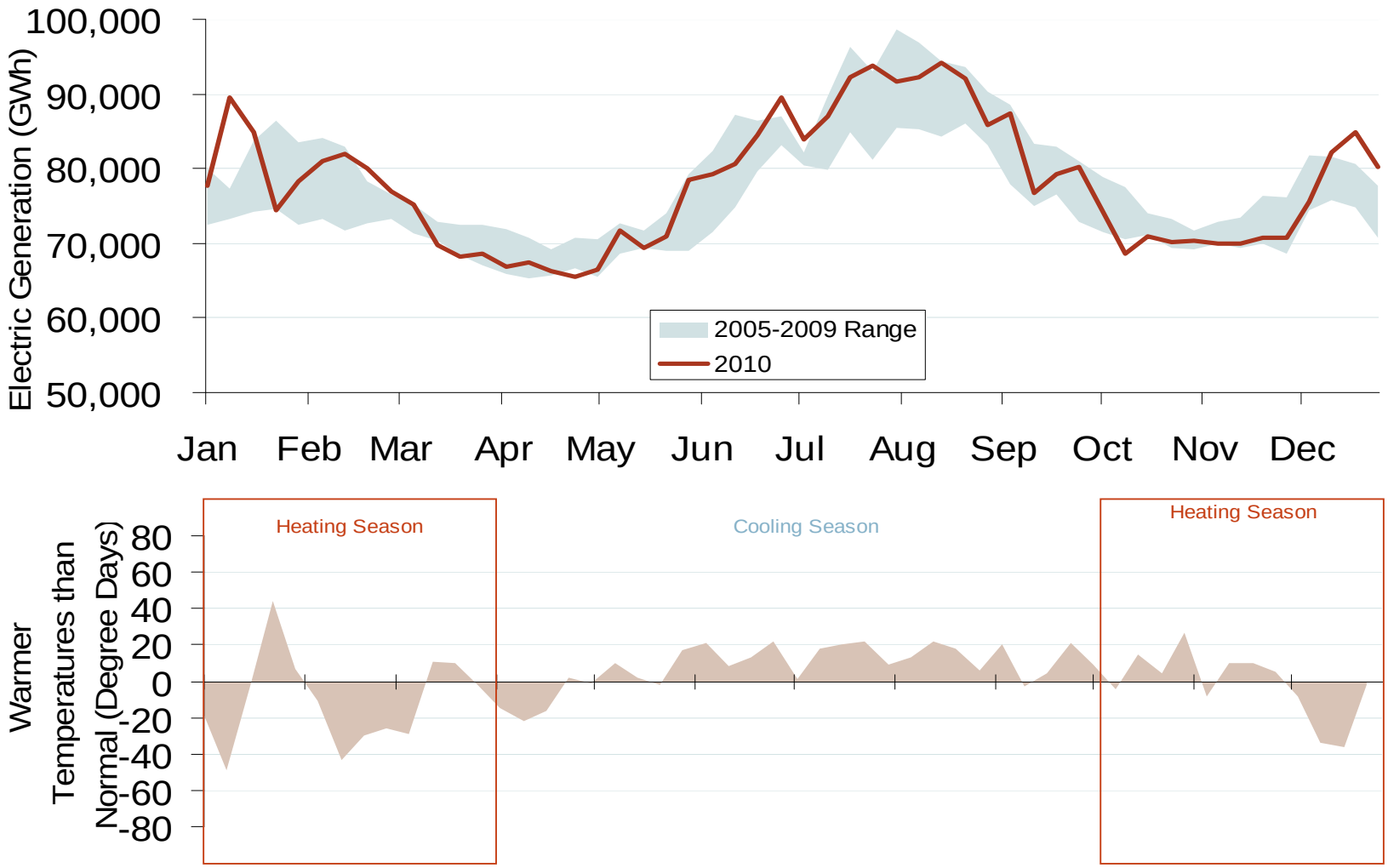
Regional Spot Prices: 2008-2010

	On-peak Spot Prices ($/MWh)					Off-peak Spot Prices ($/MWh)				
	2008	2009	2010	% Change 08-09	% Change 09-10	2008	2009	2010	% Change 08-09	% Change 09-10
Northeast										
Mass Hub	91.55	46.24	56.18	-49.5%	21.5%	66.50	34.57	38.84	-48.0%	12.4%
Ny Zone G*	100.99	49.80	59.48	-50.7%	19.4%	67.32	34.14	39.47	-49.3%	15.6%
NY Zone J*	112.63	55.77	65.76	-50.5%	17.9%	70.29	35.25	40.37	-49.8%	14.5%
NY Zone A*	68.34	35.54	43.89	-48.0%	23.5%	50.68	27.98	34.05	-44.8%	21.7%
PJM West	83.70	44.60	53.68	-46.7%	20.4%	51.21	31.68	35.81	-38.1%	13.0%
Southeast										
VACAR	70.86	36.42	43.24	-48.6%	18.7%	39.36	25.68	29.18	-34.7%	13.6%
Southern	70.13	36.58	42.61	-47.8%	16.5%	39.82	25.82	29.51	-35.1%	14.3%
TVA	69.01	34.91	41.79	-49.4%	19.7%	38.61	24.69	27.43	-36.1%	11.1%
Florida	74.66	40.75	50.81	-45.4%	24.7%	41.35	28.00	31.59	-32.3%	12.8%
Entergy	68.49	33.57	40.07	-51.0%	19.3%	35.26	21.89	24.87	-37.9%	13.7%
Midwest										
Cinergy	66.88	34.65	41.51	-48.2%	19.8%	31.14	22.15	24.34	-28.9%	9.9%
Michigan Hub	69.15	36.56	43.68	-47.1%	19.5%	31.81	22.97	26.84	-27.8%	16.9%
Minnesota Hub	67.46	32.09	36.86	-52.4%	14.9%	25.76	14.19	17.61	-44.9%	24.1%
NI Hub	66.13	34.47	40.85	-47.9%	18.5%	31.24	19.49	21.70	-37.6%	11.3%
Illinois Hub	62.52	31.36	38.22	-49.8%	21.9%	26.29	17.44	20.44	-33.6%	17.2%
MAPP South	69.18	33.31	37.60	-51.9%	12.9%	34.00	20.78	21.76	-38.9%	4.7%
South Central										
SPP North	68.77	32.94	38.71	-52.1%	17.5%	33.66	20.36	21.51	-39.5%	5.7%
ERCOT North	73.42	34.89	41.15	-52.5%	17.9%	46.71	22.37	26.97	-52.1%	20.6%
Southwest										
Four Corners	71.84	35.38	39.68	-50.8%	12.2%	49.40	23.76	27.02	-51.9%	13.7%
Palo Verde	71.87	34.77	38.76	-51.6%	11.5%	52.16	24.26	27.72	-53.5%	14.3%
Mead	75.63	36.58	40.11	-51.6%	9.7%	54.90	26.34	29.37	-52.0%	11.5%
Northwest										
Mid-C	65.00	35.66	35.90	-45.1%	0.7%	53.70	28.24	29.19	-47.4%	3.4%
COB	73.86	38.02	38.84	-48.5%	2.2%	55.81	29.22	29.86	-47.7%	2.2%
California										
NP15	80.14	39.29	40.08	-51.0%	2.0%	59.22	28.66	29.89	-51.6%	4.3%
SP15	79.36	38.31	40.21	-51.7%	5.0%	57.86	26.64	29.14	-54.0%	9.4%

Source: Derived from *Platts* data.

Updated January 4, 2011

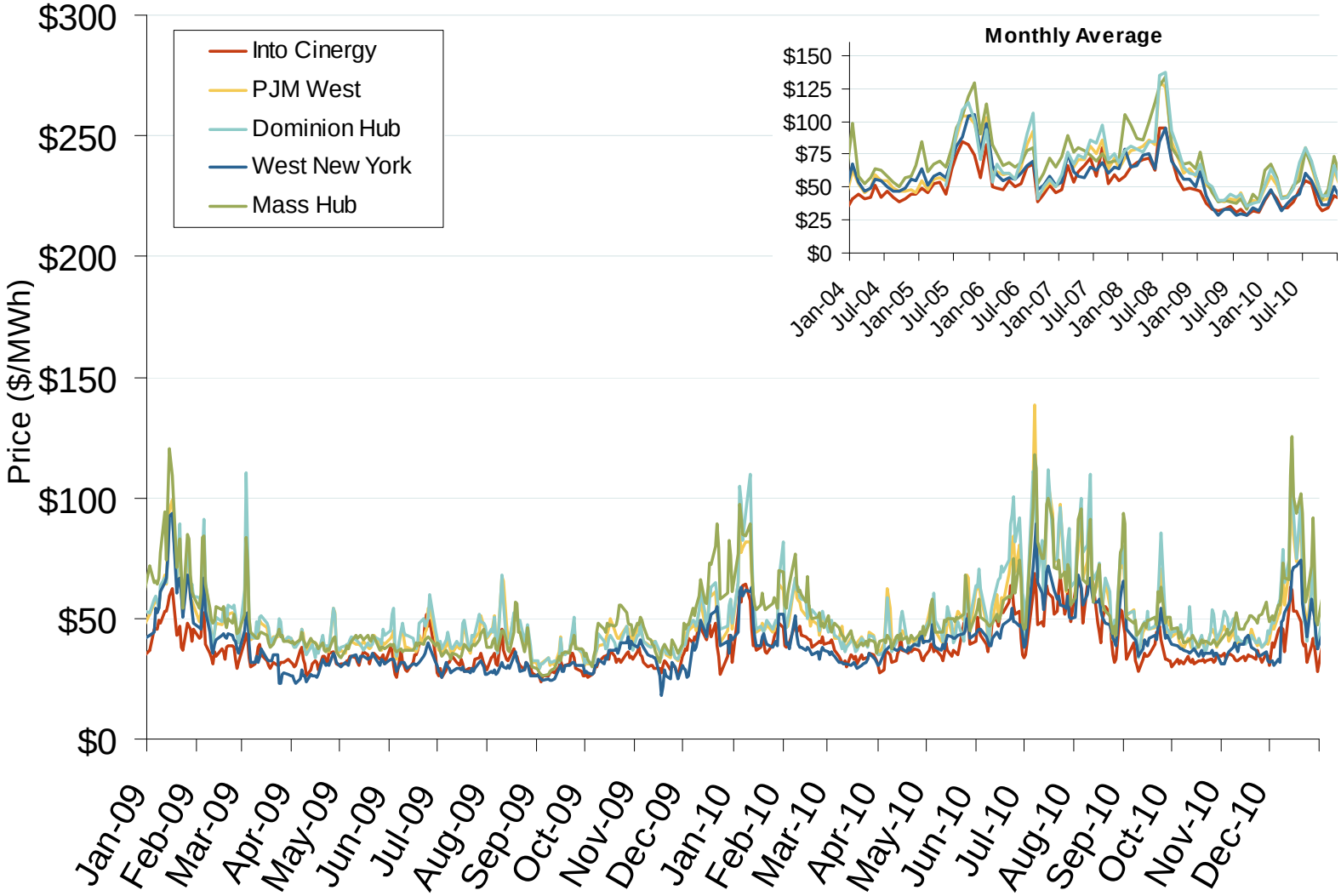
Weekly U.S. Electric Generation Output and Temperatures



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

Updated January 10, 2011

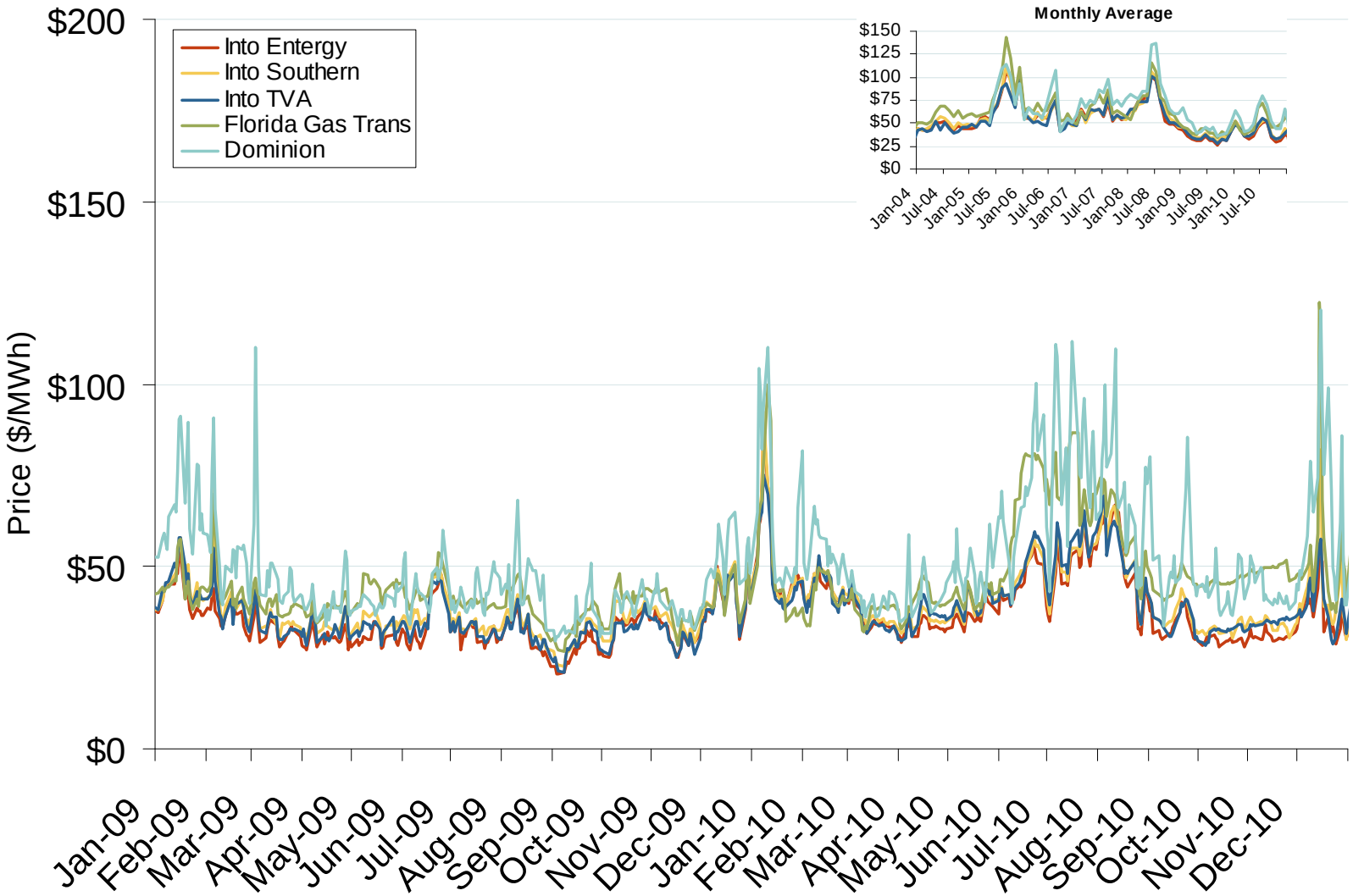
Eastern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from Platts data.

Updated: January 04, 2011

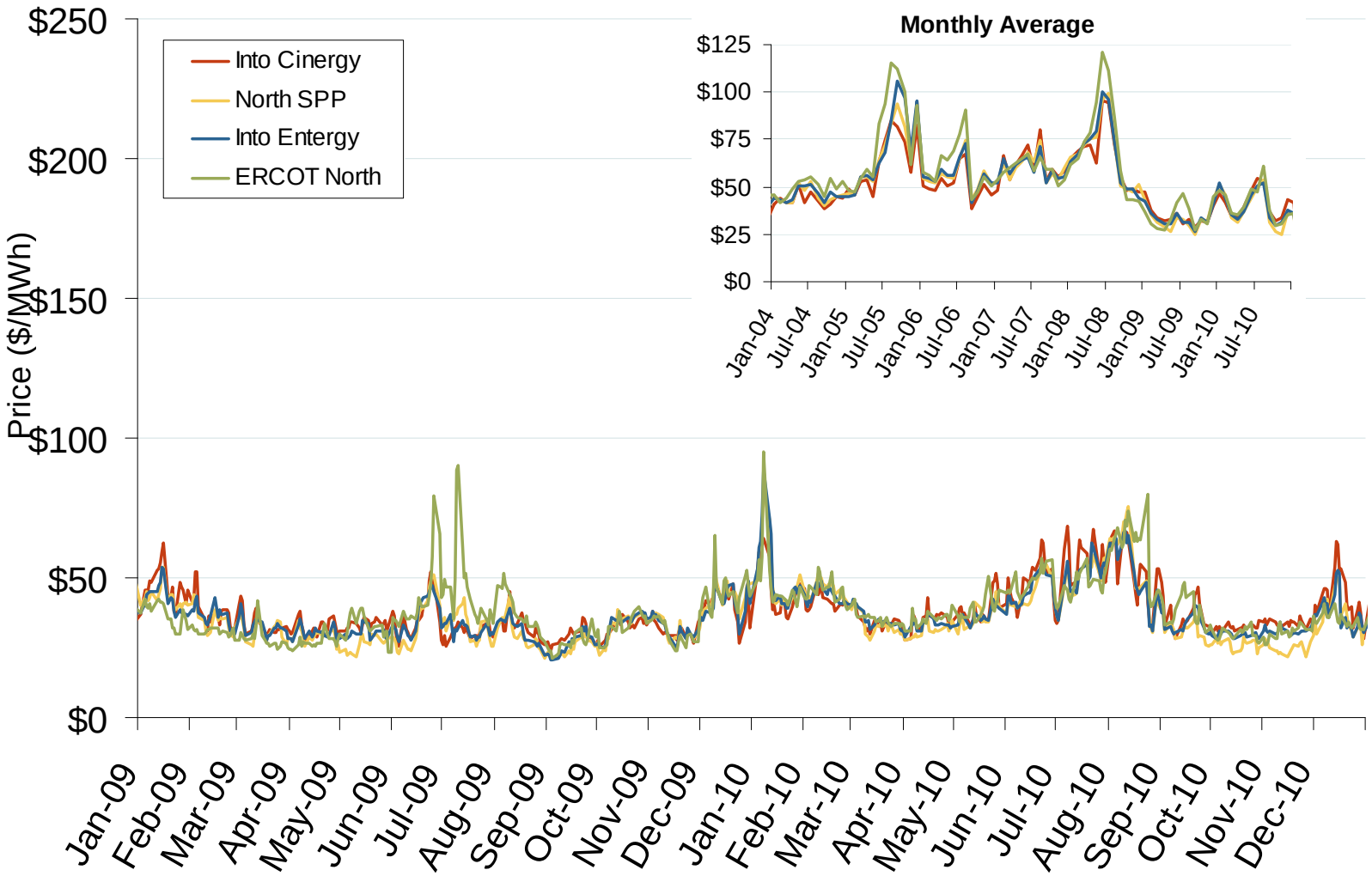
Southeastern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from Platts data.

Updated: January 10, 2011

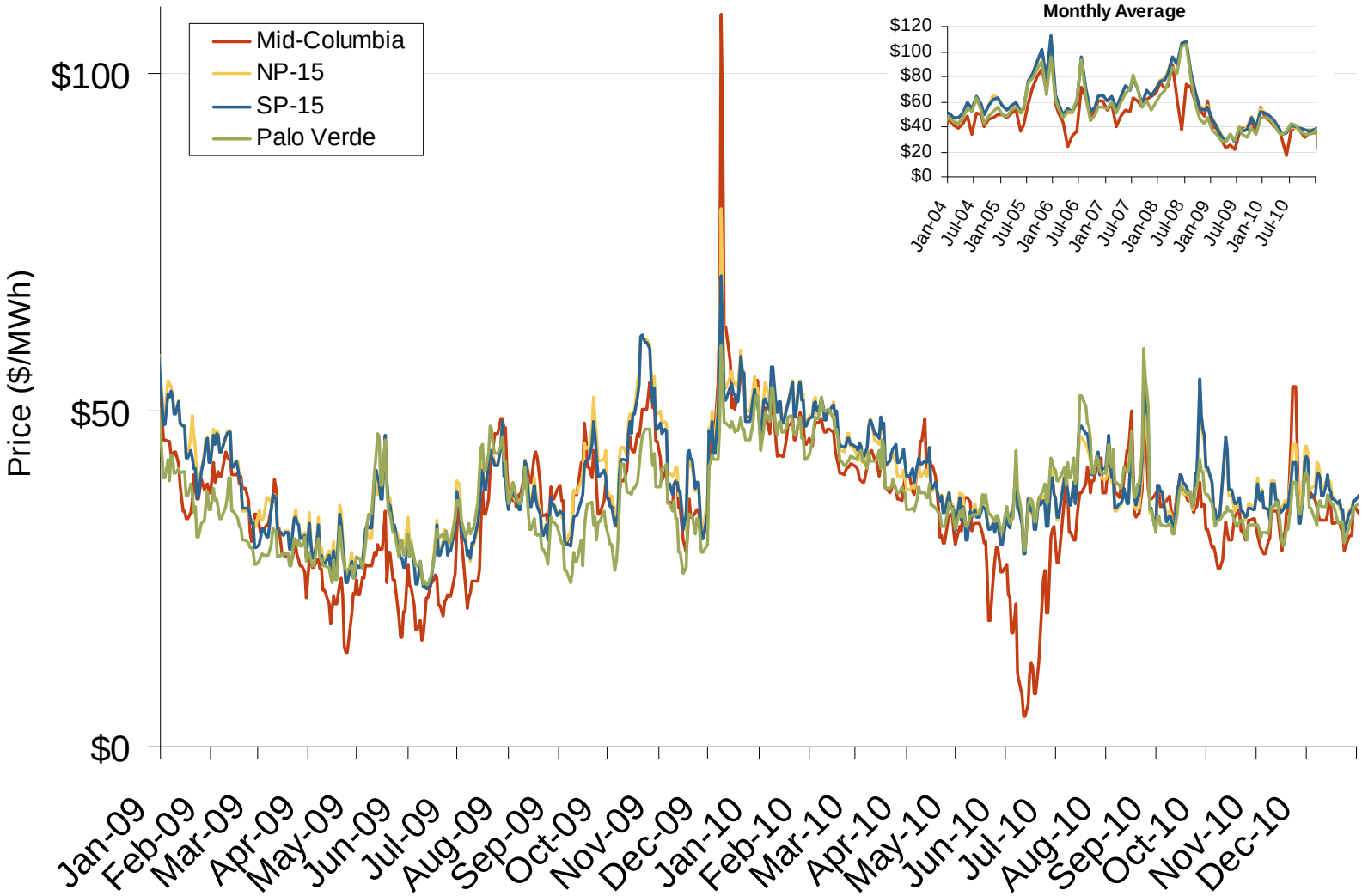
Central Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated: January 05, 2011

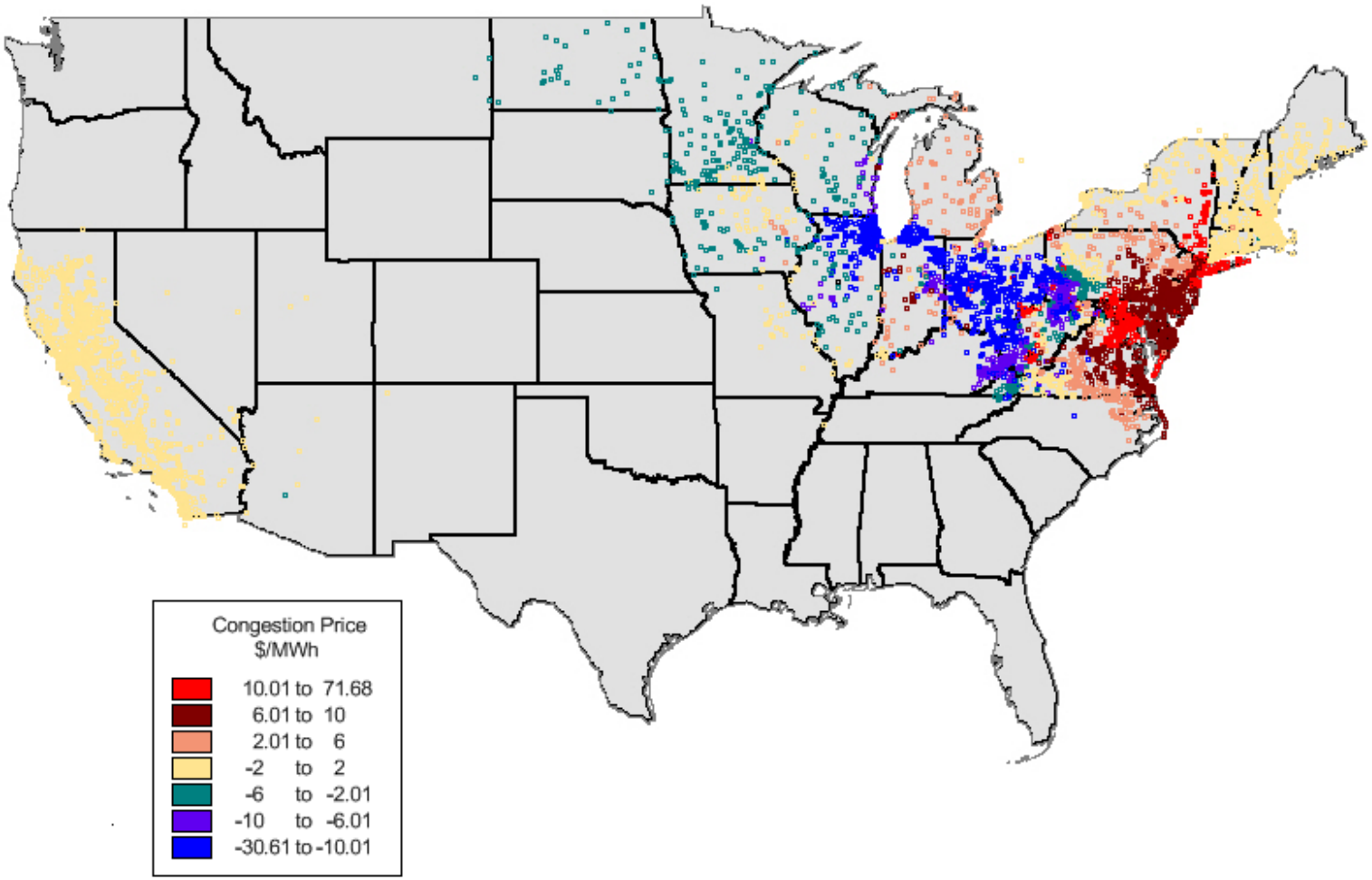
Western Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from Platts data.

Updated: January 10, 2011

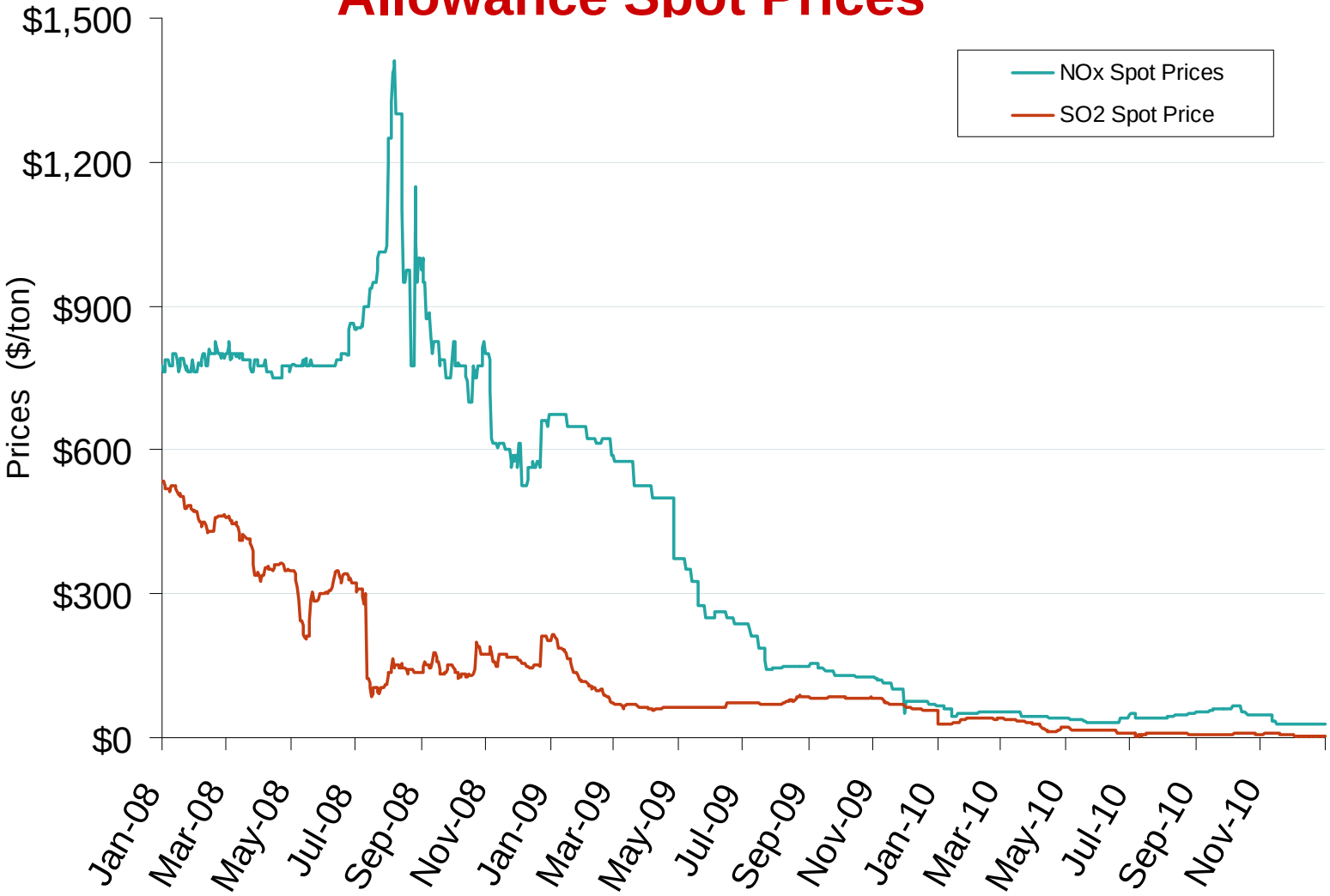
Average Nodal Congestion Prices – Day Ahead On-Peak December 2010



Source: Derived from *Velocity Suite* data.

Updated January 3, 2011

SO2 Allowance Spot Prices and NOx Seasonal Allowance Spot Prices



Source: Derived from *Bloomberg* data.

Updated: January 06, 2011

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):

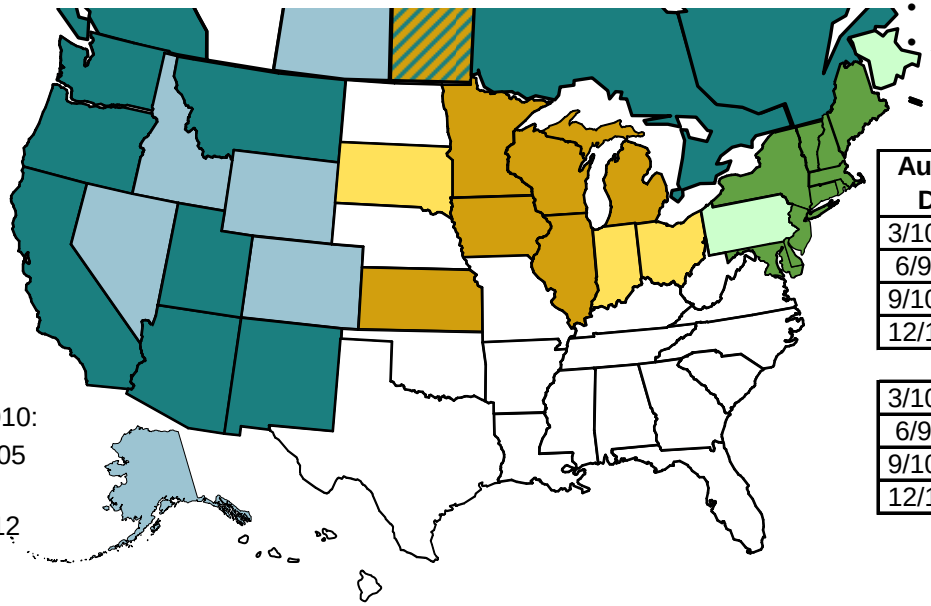
- Created February 2007
- Partners: 7 states, 4 provinces; Observers: 5 states, 2 provinces
- Market Design introduced July 2010:
  - 15% CO_2 reduction below 2005 levels by 2020
  - Phase I to take effect Jan 2012

Midwest Greenhouse Gas Reduction Accord (MGGRA):

- 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	Offered (M)	Sold (M)
3/10/2010	2010	$2.07	40.7	40.7
6/9/2010	2010	$1.88	40.7	40.7
9/10/2010	2010	$1.86	45.6	34.4
12/1/2010	2010	$1.86	45.6	24.8
3/10/2010	2013	$1.86	2.14	2.09
6/9/2010	2013	$1.86	2.14	2.14
9/10/2010	2013	$1.86	2.14	1.31
12/1/2010	2013	$1.86	2.14	1.17

- 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

Continued on Page 2.

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Collaborative Greenhouse Gas Programs

National Energy and Environment Update:

- Three bills have been introduced in the House to limit federal GHG regulation, including the Clean Air Transport Rule. Senator Rockefeller (D-WV) plans to re-introduce his legislation to delay rules at least 2 years.

The EPA introduces the Transport Rule

- The Transport Rule would replace the Clean Air Interstate Rule (CAIR) that was vacated by the U.S. Court of Appeals for the District of Columbia Circuit in 2008.
- The Rule would apply to fossil fuel fired electric generating units (EGUs) with a nameplate capacity of greater than 25 MW producing electricity for sale in the 31 covered states and DC.
- Emission limits would be set on a state-by-state basis.
- The Transport Rule significantly limits or bans interstate trading of allowances. Some intrastate trading will be allowed.
- The EPA expects the to finalize the Transport Rule in late Spring of 2011. The first phase of reduction would be required by early 2012 and the second phase by early 2014.

RGGI Auctions:

- Auction 10 conducted on December 1, 2010 raising $48 million for energy efficiency, renewable energy, and other consumer-benefit programs in participating states.
- Participant states are: CT, DE, ME, MD, MA, NH, NJ, NY, RI, VT.
- RGGI has raised over $768 million to date.
- The number of potential RGGI bidders has dropped from 82 in Auction 1 to 49 in Auction 10. The Ratio of bids to supply has fallen from 4.1 to 0.57 over the same period.
- Both current and future allowances cleared at $1.86 per allowance, the mandated floor price.
- Auction 11 is scheduled for March 9, 2011.

CA referendum to suspend GHG law defeated:

- The “California Jobs Initiative,” or proposition 23, was defeated with approximately 59% of the vote.

GHG trading begins 2011 with light trading:

- Little interest in 2012 NOx allowances due to the Transport Rule’s exclusion of existing allowances. Interest is expected to increase as the probability of Congress blocking EPA’s action increases.
- Tight supply seen in CA GHG markets.

EIA finds energy-related CO2 emissions down 7% in 2009:

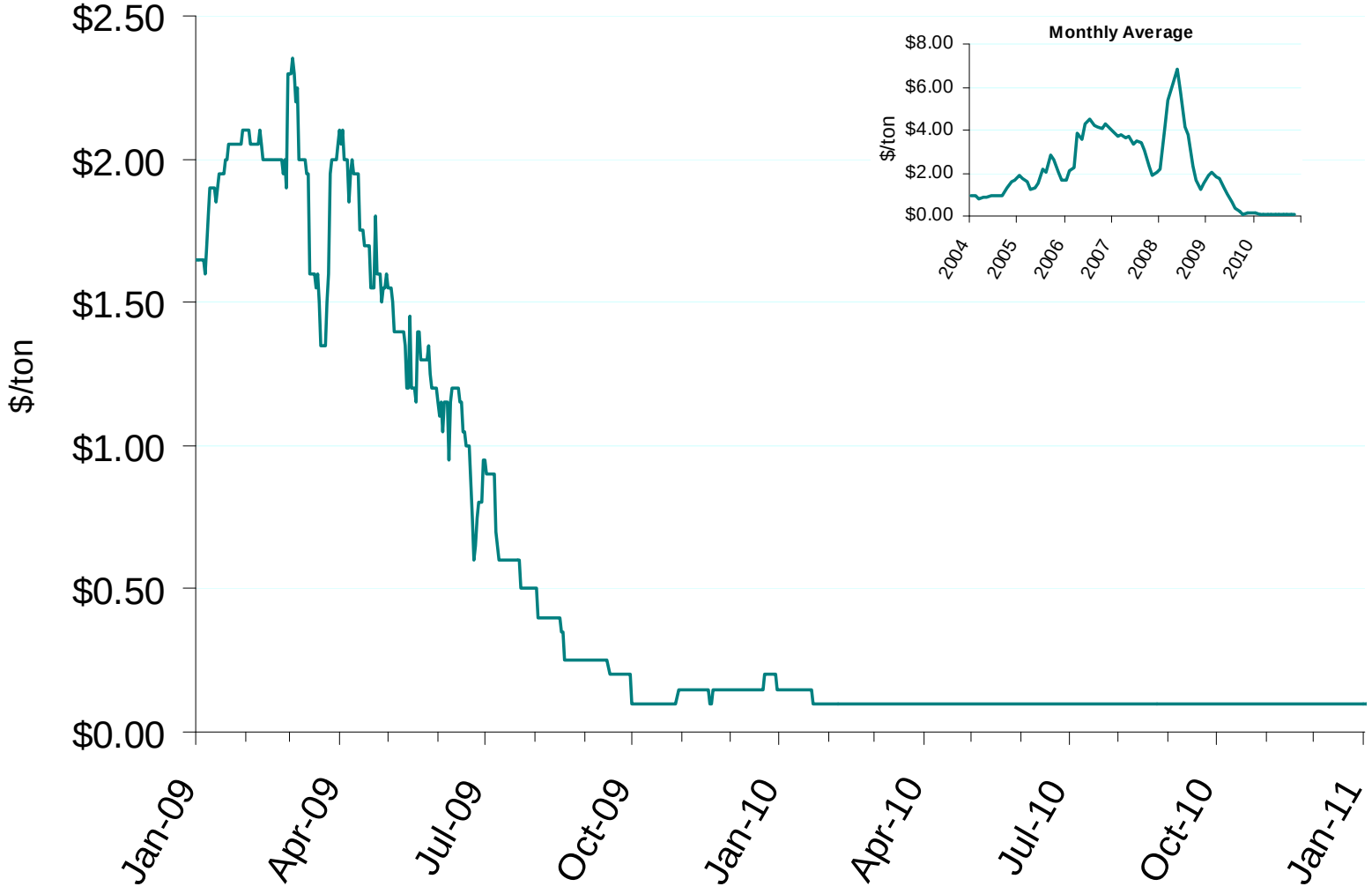
- Energy-related CO_2 emissions fell 7%, or 405 million metric tons.
- EIA attributes the drop to declines in per capita GDP, reduced energy intensity in the economy, and increased use of natural gas and wind generation.
- Energy consumption fell 4.8%, led by a 9.9% fall in industrial use.
- EIA predicts CO2 emissions will rise 1.3% in 2011.

Western Climate Initiative (WCI) Market Design Launch:

- WCI unveiled plans for a market-based, multi-sector, cap-and-trade program (July 27):
  - Phase I to take effect Jan 2012
  - Phase II to begin 2015; will cover 90% of regional emissions
- Participants include:
  - Partners: AZ, British Columbia, CA, Manitoba, MT, NM, Ontario, OR, Quebec, UT, WA
  - Observers: AK, CO, ID, KS, NV, Saskatchewan, WY, Yukon
- Some coal-dependent states, such as AZ and UT, will not participate in phase I.
- WCI will use quarterly auctions in a sealed-bid, single round auction format. Minimum prices for allowance bids will be announced in advance of the first quarterly sale of permits.
- WCI may accept RGGI and MGGRA allowances as offsets.

Abbreviations: CO_2 – Carbon dioxide (emissions); EPA – U.S. Environmental Protection Agency; GHG - Greenhouse Gases; MGGRA – Midwest Greenhouse Gas Reduction Accord; RGGI – Regional Greenhouse Gas Initiative; SF6 – sulfur hexaflouride

Chicago Climate Exchange CO2 Index



Source: Derived from *Bloomberg*.

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