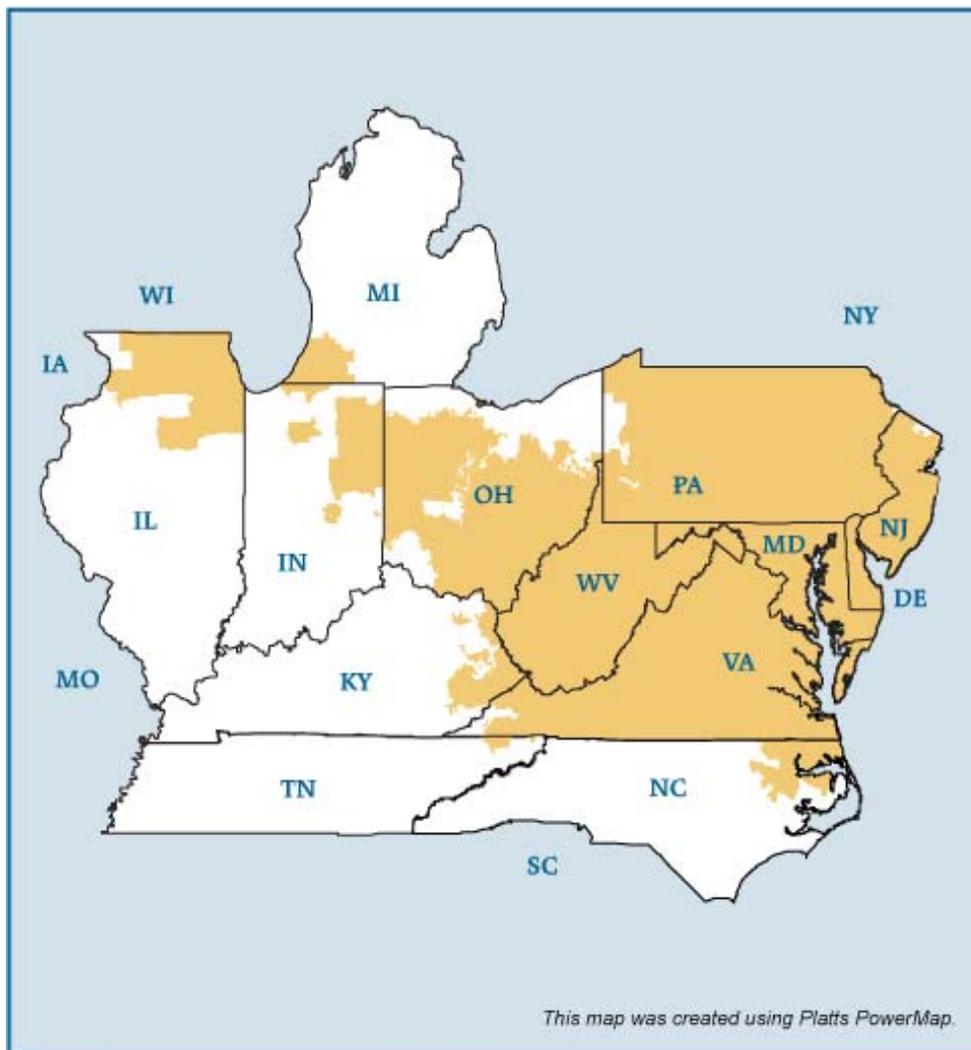


# PJM Electric Market



## Overview

**Market Description:** PJM Interconnection (PJM)

## Geography

States covered: All or most of Pennsylvania, New Jersey, Maryland, Delaware, District of Columbia, Virginia, West Virginia and Ohio. Parts of Illinois, Michigan, Indiana, Kentucky, North Carolina and Tennessee.

Reliability region: Reliability *First* Corporation (RFC) and SERC Reliability Corporation (SERC)

Balancing authority: PJM

Load zones: Allegheny Power Systems (APS), American Electric Power (AEP), Atlantic Electric Power Company, Inc. (AECO), Baltimore Gas and Electric Company (BGE), ComEd, Dayton Power and Light Company (DAY), Delmarva Power and Light Company (DPL), Dominion (DOM), Duquesne Light (DUQ), Jersey Central Power and Light Company (JCPL), Metropolitan Edison Company (METED), PPL Electric Utilities (PPL), PECO Energy (PECO), Pennsylvania Electric Company (PENELEC), Potomac Electric Power Company (PEPCO), Public Service Electric and Gas Company (PSEG), and Rockland Electric Company (RECO).

Hubs: AEP GEN, AEP-Dayton, Chicago GEN, Chicago, Dominion, Eastern, N. Illinois, New Jersey, Ohio, West INT, Western.

## PJM Electric Market: Overview and Focal Points

### Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

#### **RTO/ISO**

PJM Interconnection (PJM) operates the region's power grid and wholesale electric markets:

- Energy market: two-settlement (day ahead and real-time) spot market with locational marginal pricing (prices are calculated at each bus every five minutes),
- Capacity market,
- Ancillary services markets, and
- Financial transmission rights (FTR) market.

Energy and capacity in the region are also traded bilaterally through brokers and the Intercontinental Exchange (ICE).

#### [PJM 2007 State of the Markets Report](#)

Market Monitor: Joseph E. Bowring – Internal Market Monitor

#### **Generation/Supply**

Marginal fuel type: Coal and natural gas

Generating capacity (summer 2006): 164,634 MW

Capacity reserve (summer 2006): 19,990 MW

Reserve margin (summer 2006): 14%

#### **Demand**

All time peak demand: 144,644 MW (set August 2, 2006)

In summer of 2006, demand reached record levels on several occasions due to extremely hot weather.

Peak demand growth: 8.1 % (2005-2006)

Summer Peak Demand (MW) 133,762 (2005) 144,644 (2006) (Source: PJM)

Updated August 3, 2007

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**Prices****Annual Average Day-Ahead Price****PJM Western Hub (a basket of 109 buses stretching from Erie PA to Washington DC)****2004:** \$41.73/MWh**2005:** \$60.89/MWh**2006:** \$50.07/MWh**2007:** \$56.87/MWh

## Supply and Demand Statistics for PJM

<b>Supply Demand Statistics</b>			
	2004	2005	2006
Summer Generating Capacity MW	106,250	166,950	164,634
Summer Peak Demand MW	77,887	133,762	144,644
Summer Reserves MW	28,363	33,188	19,990
Summer Reserve Margin:	36%	25%	14%
Annual Load (GWh):	438,874	684,592	696,165
Annual Net Generation GWh	441,778	701,443	714,091

Source: Derived from PJM data.

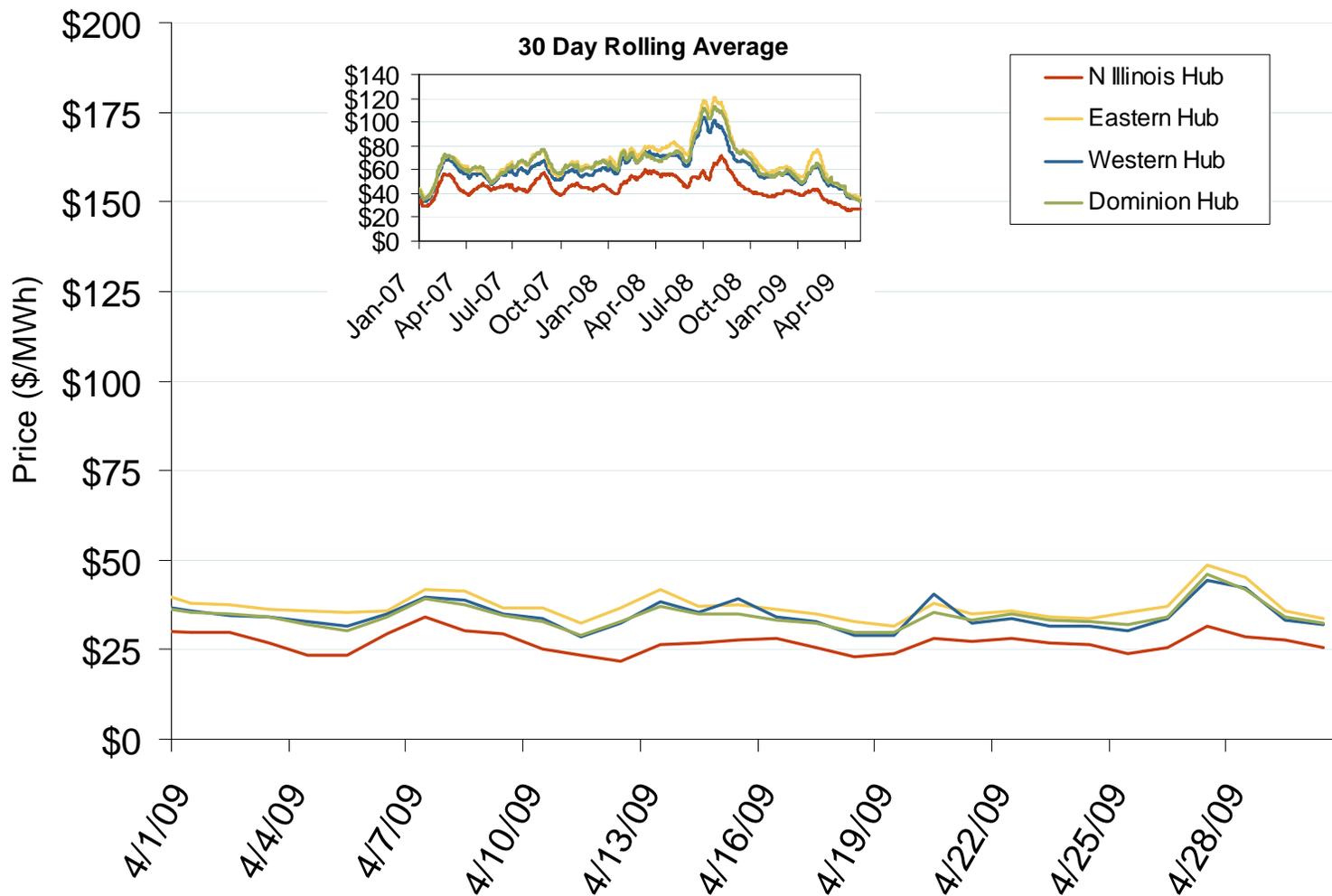
Updated May 16, 2007

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## Annual Average Bilateral Prices

Annual Average Day Ahead On Peak Prices (\$/MWh)						
	2004	2005	2006	2007	2008	5-Year Avg
Mass Hub	\$61.47	\$89.87	\$69.85	\$77.39	\$91.55	\$78.01
Ny Zone G	\$61.74	\$92.46	\$75.95	\$83.51	\$100.99	\$82.91
NY Zone J	\$76.67	\$110.03	\$85.96	\$94.15	\$112.63	\$95.87
NY Zone A	\$52.49	\$76.04	\$58.70	\$64.02	\$68.34	\$63.91
PJM West	\$51.10	\$76.64	\$61.90	\$71.15	\$83.70	\$68.88

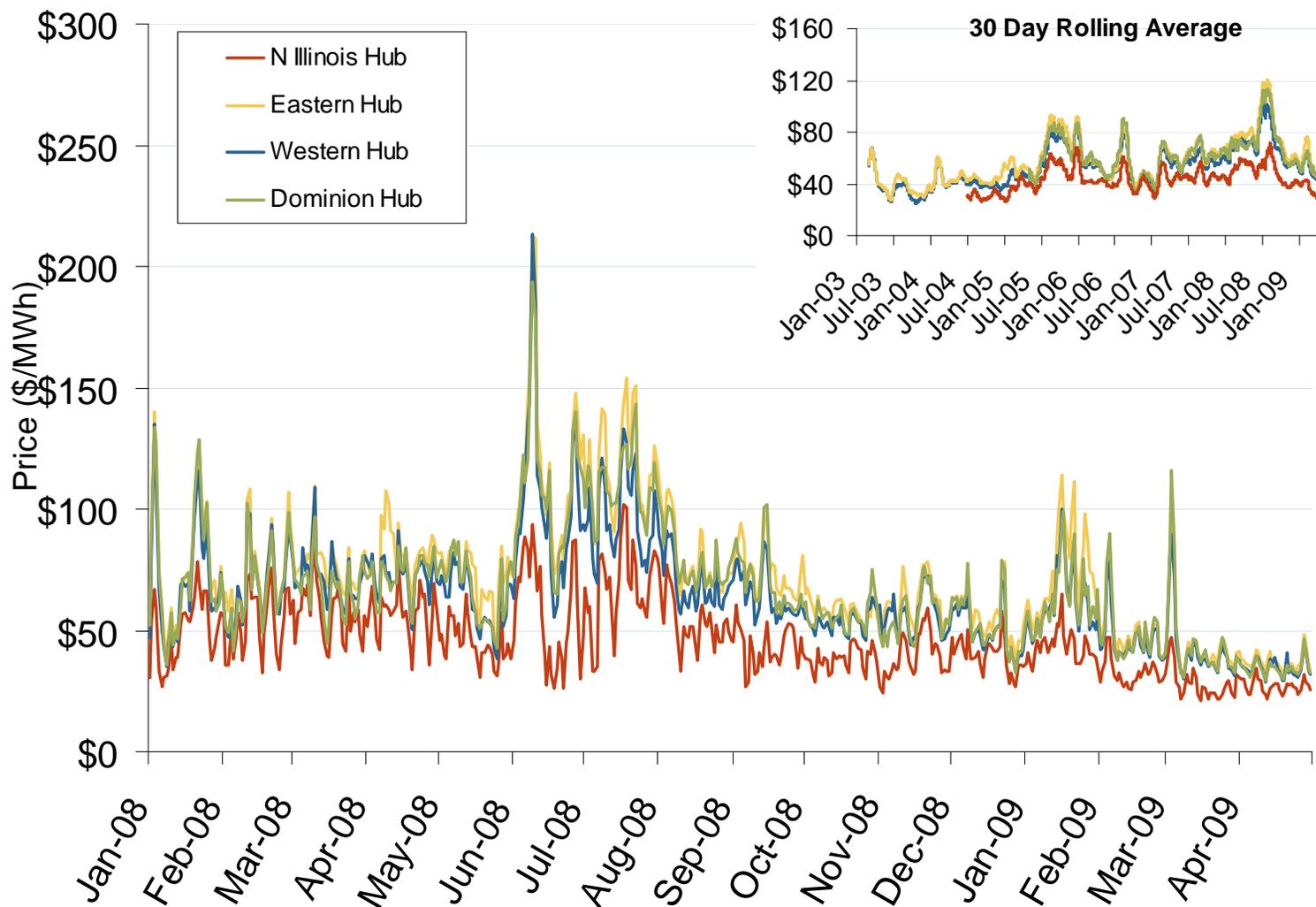
## Daily Average of PJM Day-Ahead Prices - All Hours



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

Updated May 7, 2009

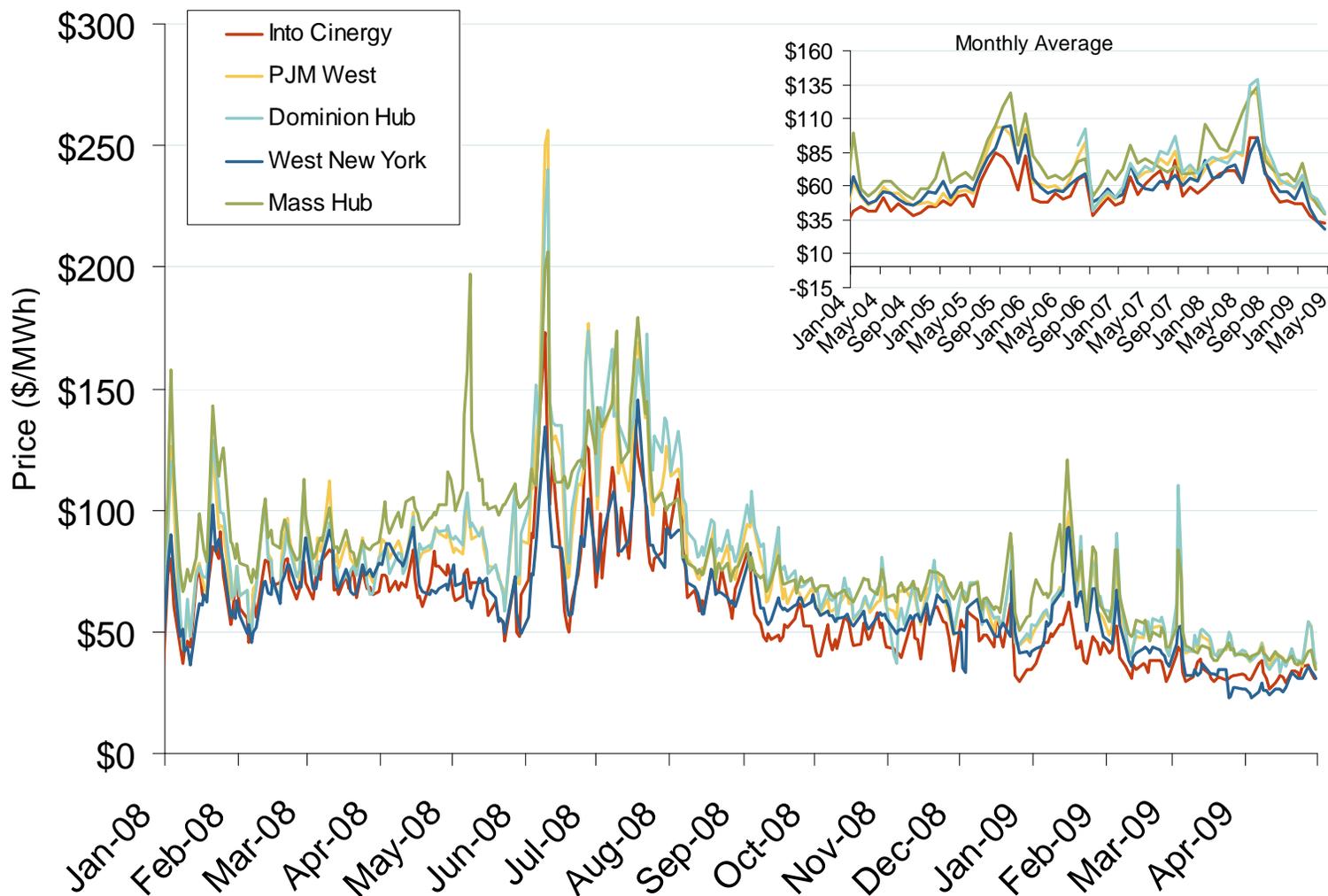
# Daily Average of PJM Day-Ahead Prices - All Hours



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

Updated May 7, 2009

# Eastern Daily Bilateral Day-Ahead On-Peak Prices



Source: Derived from *Platts* data.

Updated May 7, 2009

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# Eastern Daily Bilateral Day-Ahead On-Peak Prices

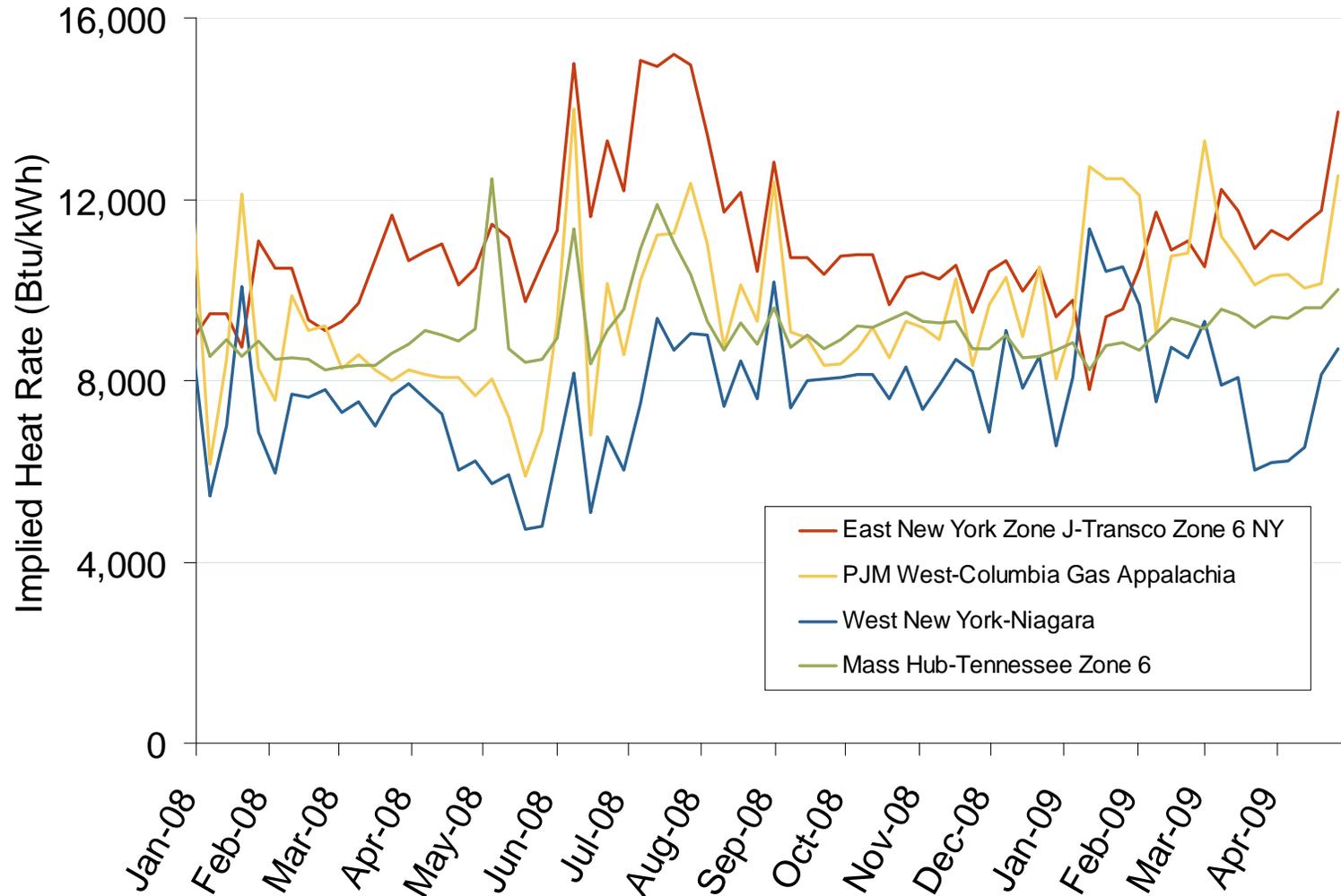


Source: Derived from *Platts* data.

Updated May 7, 2009

13562

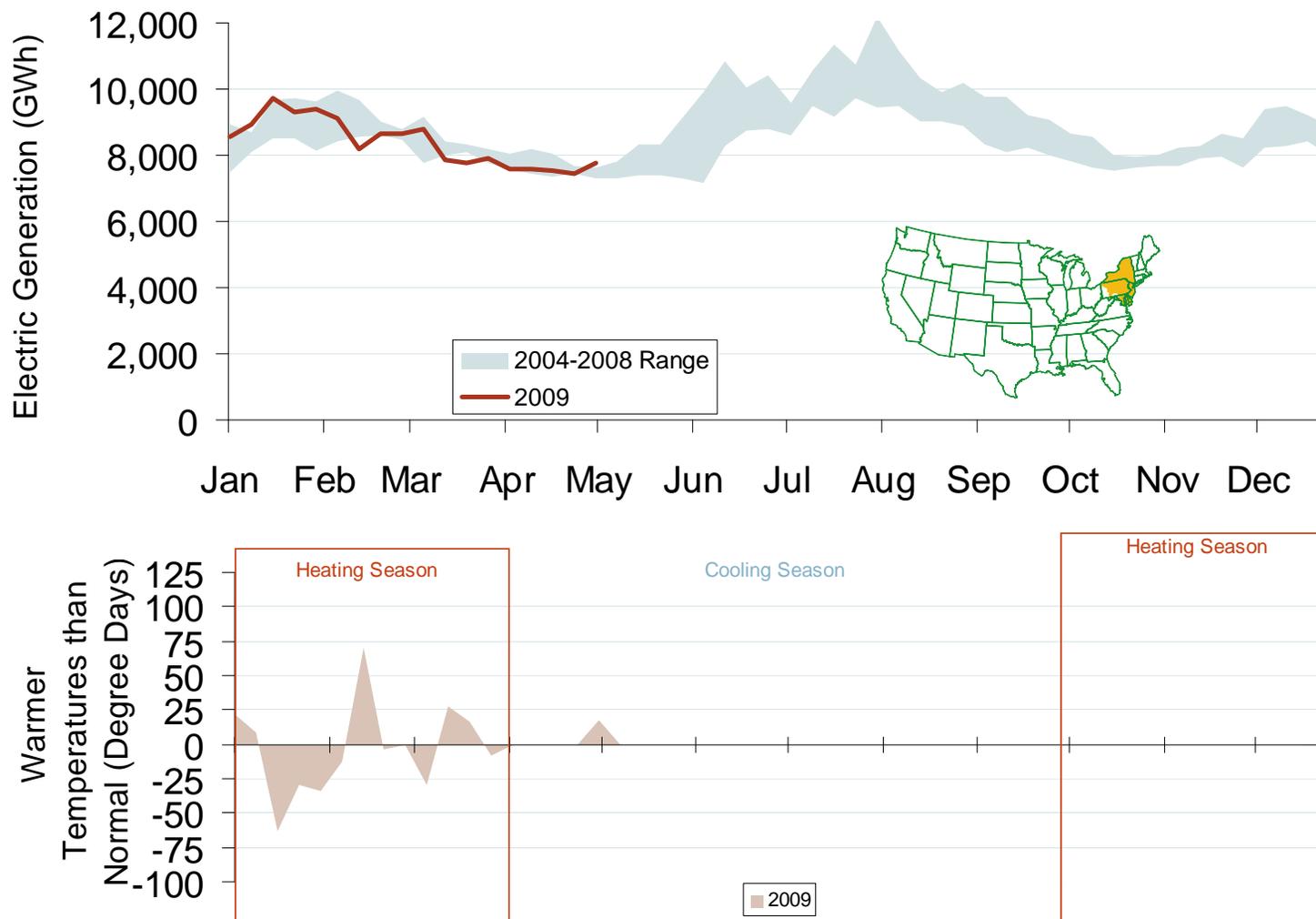
## Implied Heat Rates at Eastern Trading Points Weekly Averages

Source: Derived from *Platts* data

Updated May 7, 2009

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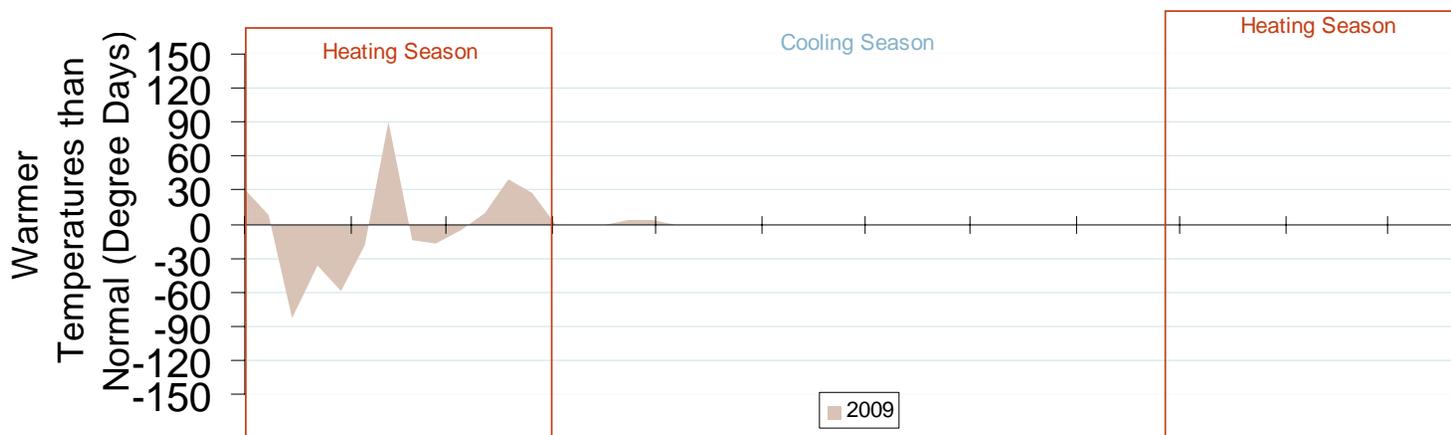
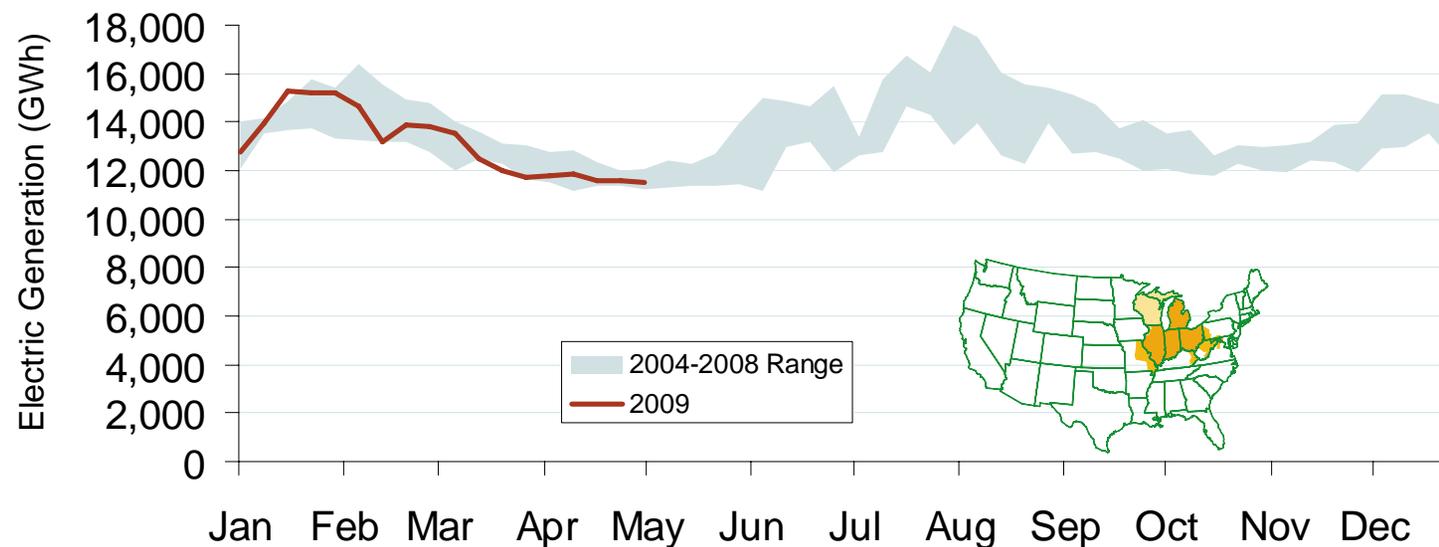
# Weekly Electric Generation Output and Temperatures Mid Atlantic Region



Source: Derived from *EEl* and NOAA data.

Updated May 7, 2009

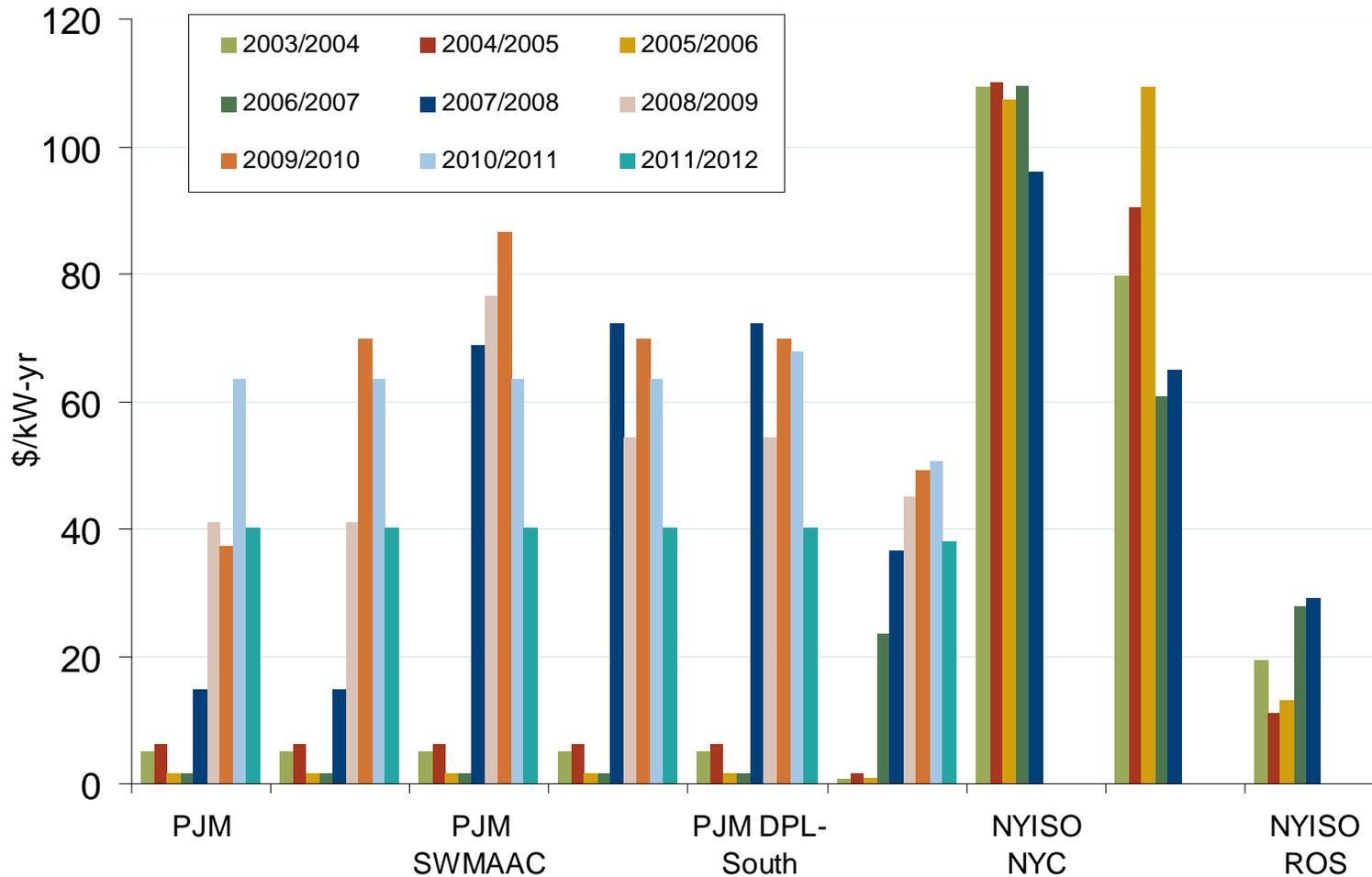
# Weekly Electric Generation Output and Temperatures Central Industrial Region



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

Updated May 7, 2009

## PJM, NYISO and ISO-NE Capacity Prices



Note: PJM values are for Base Residual Auctions only.

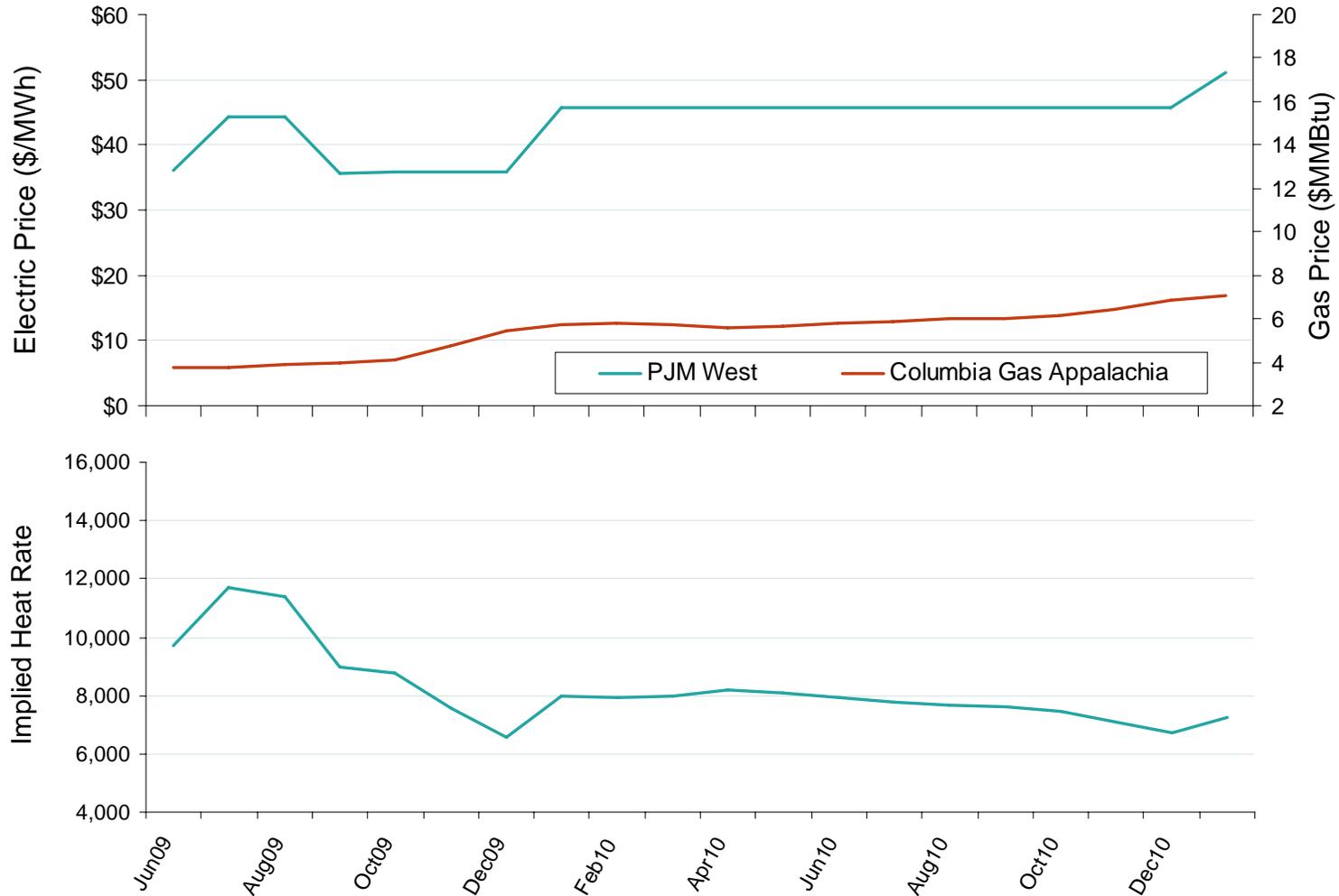
ISO-NE results for 2010/2011 and 2011/2012 are based on preliminary FCM auction before pro-rationing and EAS adjustment.

Source: Derived from PJM, NYISO and ISO-NE data

Updated February 6, 2009

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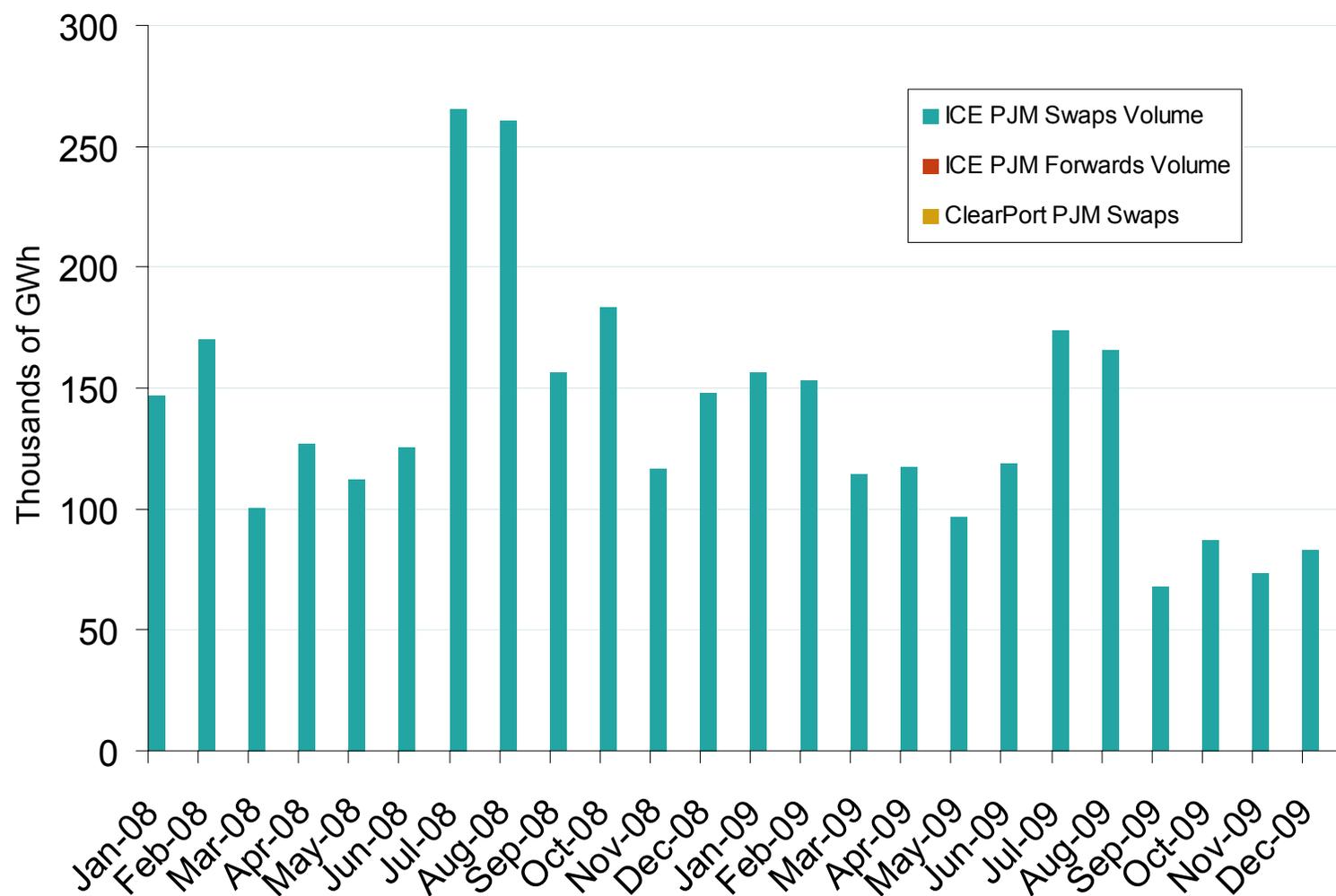
## PJM West Electric Forward Price Curves and Implied Heat Rates



Source: Derived from Nymex data.

Updated May 7, 2009

## PJM Western Hub Forward and Swap Volumes

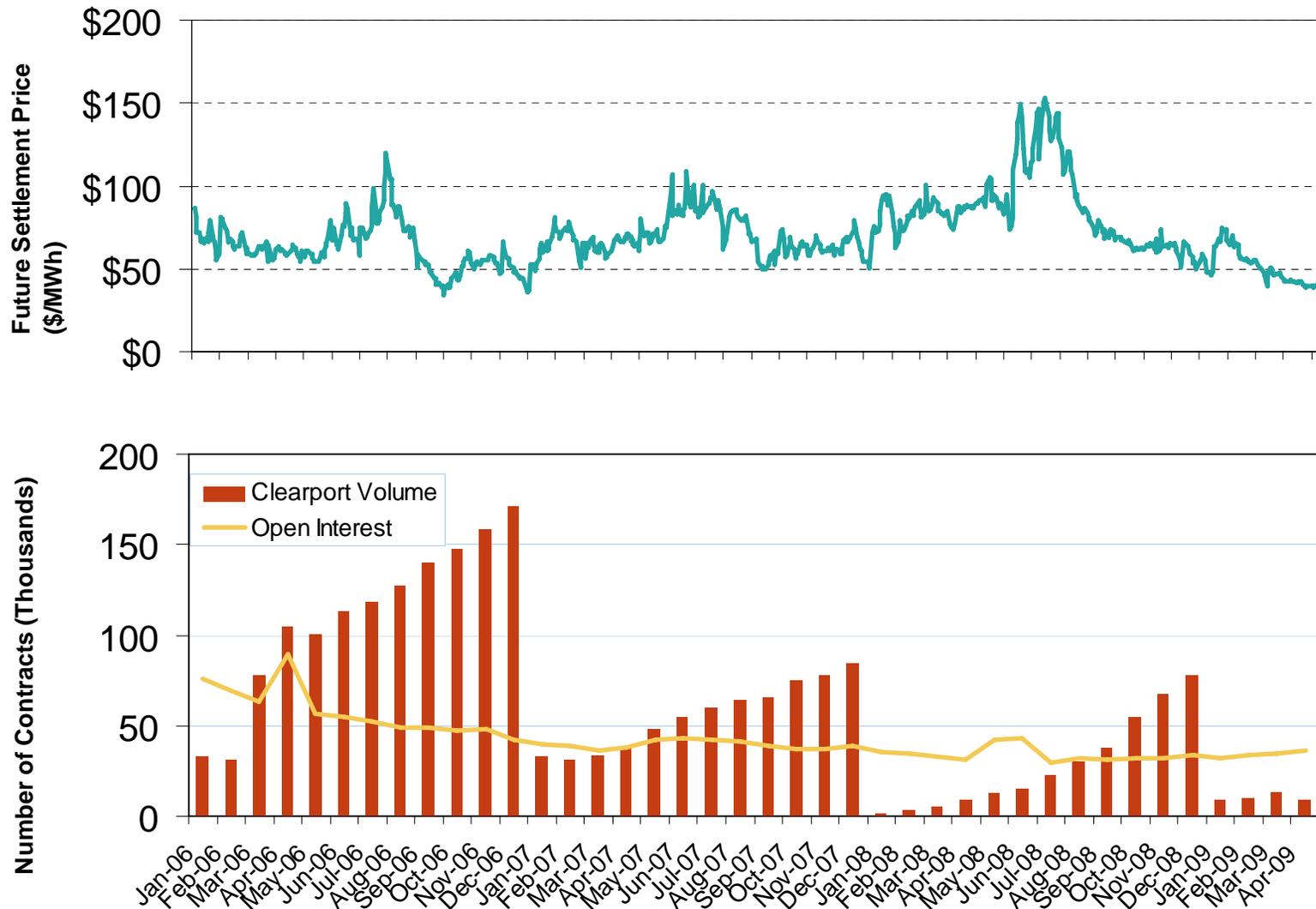


Source: Derived from ICE and Nymex ClearPort data. ICE on-peak forward (physical) and swap (financial) volumes are for PJM's Western Hub and include monthly, dual monthly, quarterly, and calendar year contracts traded for each month. Nymex ClearPort on-peak swap (financial) volumes are for PJM's Western Hub traded by month.

Updated May 7, 2009

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# Daily Settlement Price, Monthly Volume and Open Interest



Source: Derived from Nymex data.

Updated May 7, 2009