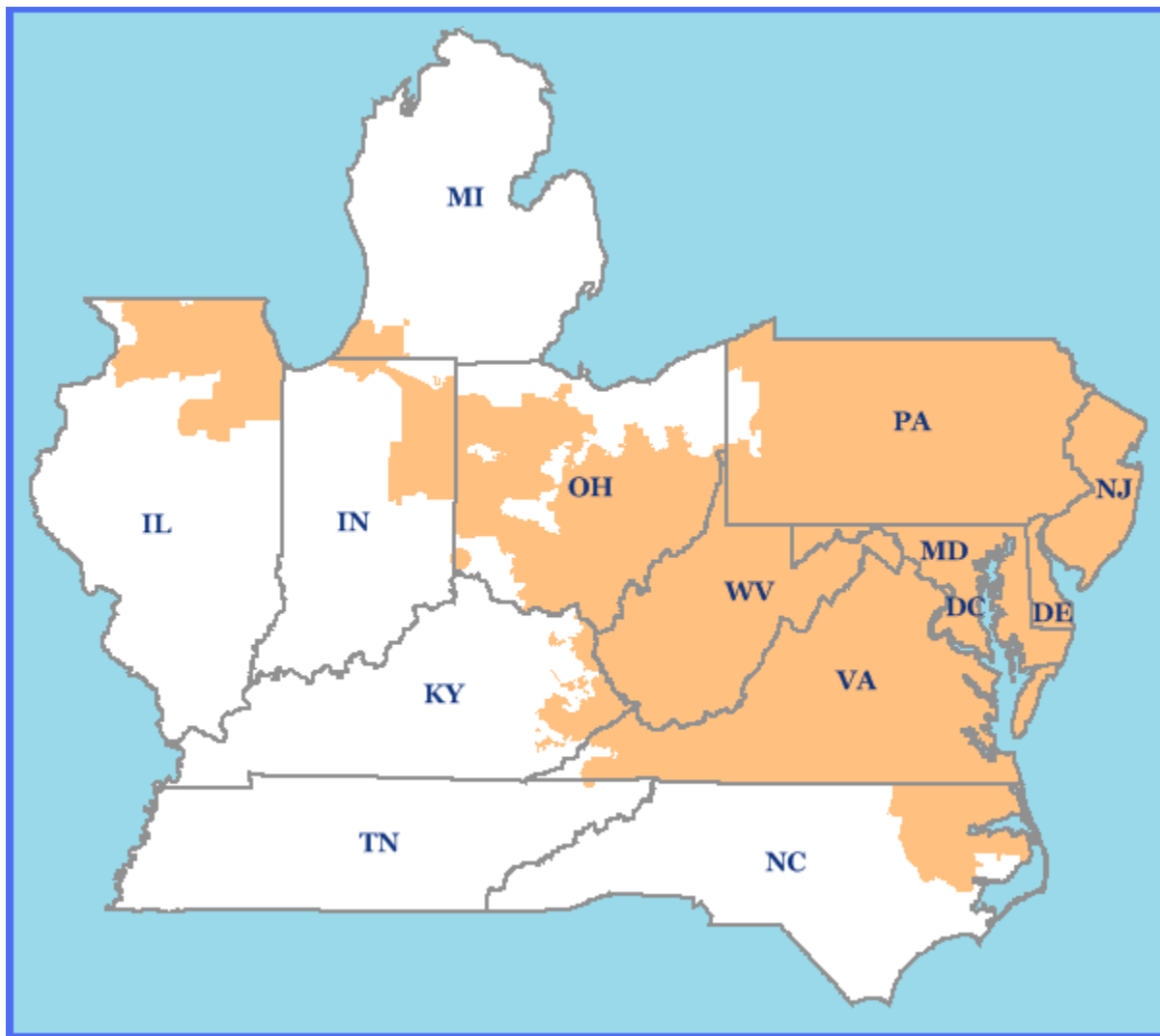


# PJM Electric Market



## PJM Electric Market: Overview and Focal Points

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

#### Overview

##### Market Description:

PJM Interconnection is a regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia, an area that includes more than 51 million people. As of December 31, 2009, it had installed generating capacity of 167,326 megawatts (MW) and over 500 market buyers, sellers and traders of electricity. In 2009 demand peaked at 126.8 MW on August 10, the lowest annual peak since the last transmission integration.

##### Geography

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

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

**Balancing authority:** PJM. The balancing authority is responsible for managing the minute-to-minute supply/demand balance for electricity within its borders to assure reliability.

##### 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)
Rockland Electric Company (RECO)	

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#### **Hubs:**

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

#### **RTO/ISO:**

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

- 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 Markets
- Ancillary services markets
- Financial transmission rights (FTR) market
- Energy and capacity are also traded bilaterally through brokers and the Intercontinental Exchange (ICE).

[PJM 2009 State of the Markets Report \(and links to prior annual reports\)](#)

**Market Monitoring Unit:** Monitoring Analytics, LLC – External Market Monitor

#### **Generation/Supply**

**Marginal fuel type (2009):** Coal (50.5%) and natural gas (36.0%)

**Generating capacity (summer 2009):** 157,318 MW

**Capacity reserve (summer 2009):** 30,513 MW

**Reserve margin (summer 2009):** 24.1%

## Demand

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

**Summer Peak Demand (MW):**

**2005:** 133,763

**2006:** 144,644

**2007:** 139,428

**2008:** 130,100

**2009:** 126,805

**Peak demand change (2008-2009):** 2.5% Decline

## Prices

### Annual Average Day-Ahead Price All Hours (MWh)

**PJM Western Hub - A basket of 109 buses from Erie PA to Washington DC (Derived from Bloomberg data)**

**2005:** \$60.61/MWh

**2006:** \$50.07/MWh

**2007:** \$57.00/MWh

**2008:** \$69.88/MWh

**2009:** \$38.71/MWh

## Supply and Demand Statistics for PJM

Supply Demand Statistics	2004	2005	2006	2007	2008
Summer Generating Capacity MW	105,600	164,024	162,458	163,659	164,179
Summer Peak Demand MW	77,887	133,763	144,644	139,428	130,100
Summer Reserves MW	27,713	30,261	17,814	24,231	34,079
Summer Reserve Margin:	36%	23%	12%	17%	26%
Annual Load (GWh):	438,874	684,592	696,165	715,524	698,458
Annual Net Generation GWh	447,957	710,435	724,925	752,097	735,244

Source: Derived from *PJM* data.

Updated May 13, 2009

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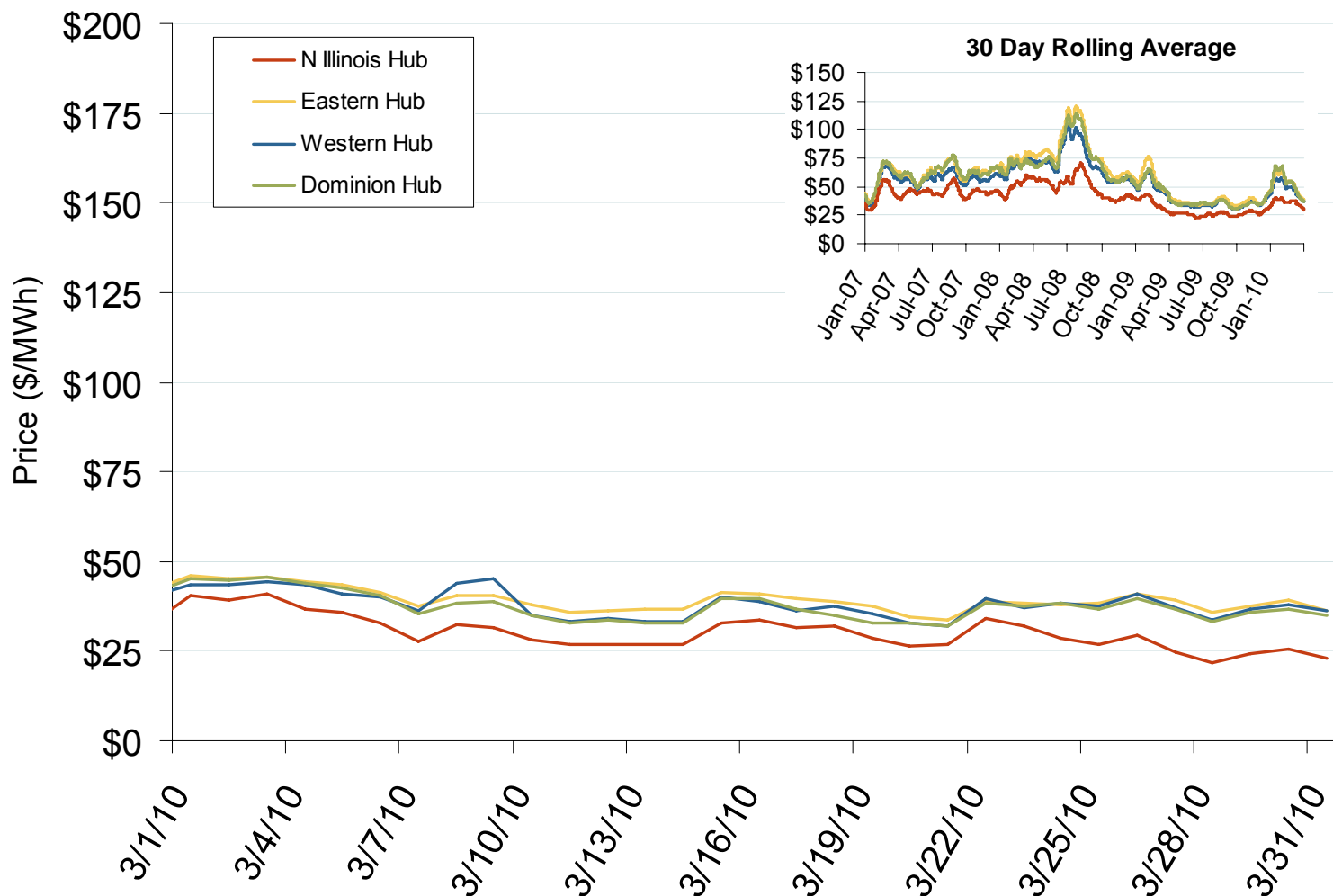
## Annual Average Bilateral Prices

Annual Average Day Ahead On Peak Prices (\$/MWh)						
	2005	2006	2007	2008	2009	5-Year Avg
Mass Hub	\$89.87	\$69.85	\$77.39	\$91.55	\$46.24	\$74.97
Ny Zone G	\$92.46	\$75.95	\$83.51	\$100.99	\$49.80	\$80.53
NY Zone J	\$110.03	\$85.96	\$94.15	\$112.63	\$55.77	\$91.69
NY Zone A	\$76.04	\$58.70	\$64.02	\$68.34	\$35.54	\$60.51
PJM West	\$76.64	\$61.90	\$71.15	\$83.70	\$44.60	\$67.59

## PJM Electric Market: Last Month's RTO Prices

Federal Energy Regulatory Commission • Market Oversight @ FERC.gov

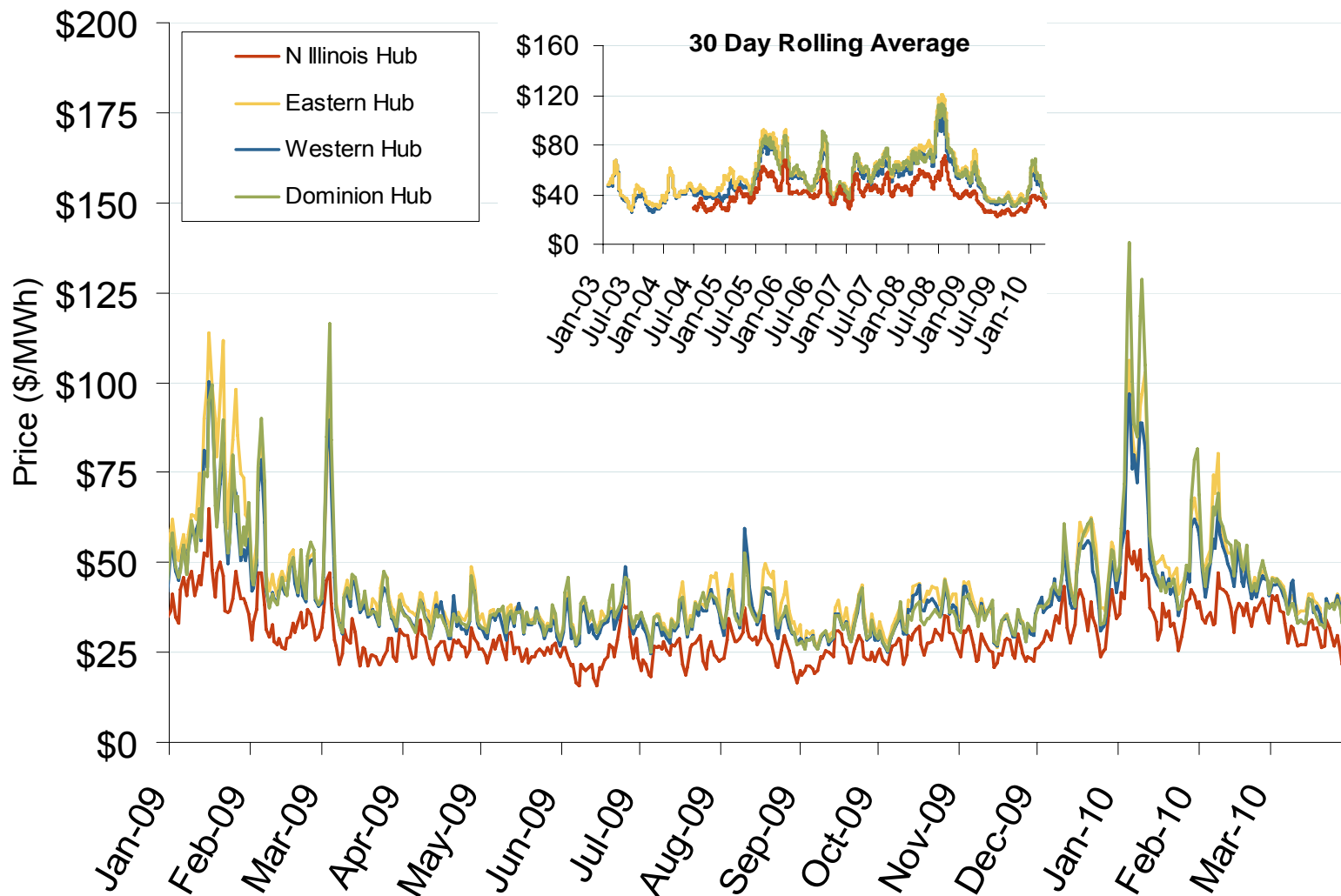
## Daily Average of PJM Day-Ahead Prices - All Hours

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

Updated April 9, 2010

1131

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

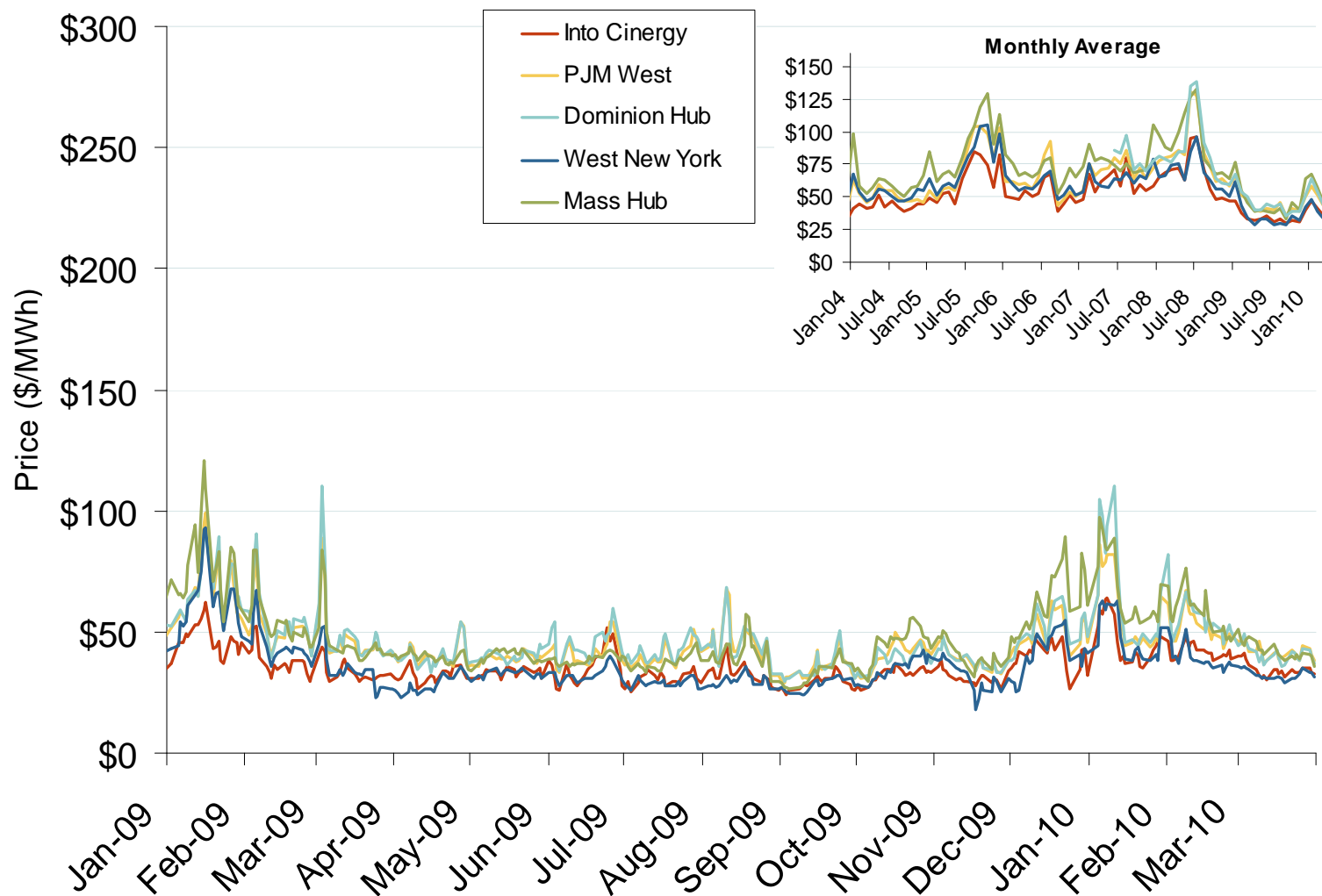


Source: Derived by Bloomberg from PJM data as reported by Bloomberg.

Updated April 9, 2010



## Eastern Daily Bilateral Day-Ahead On-Peak Prices

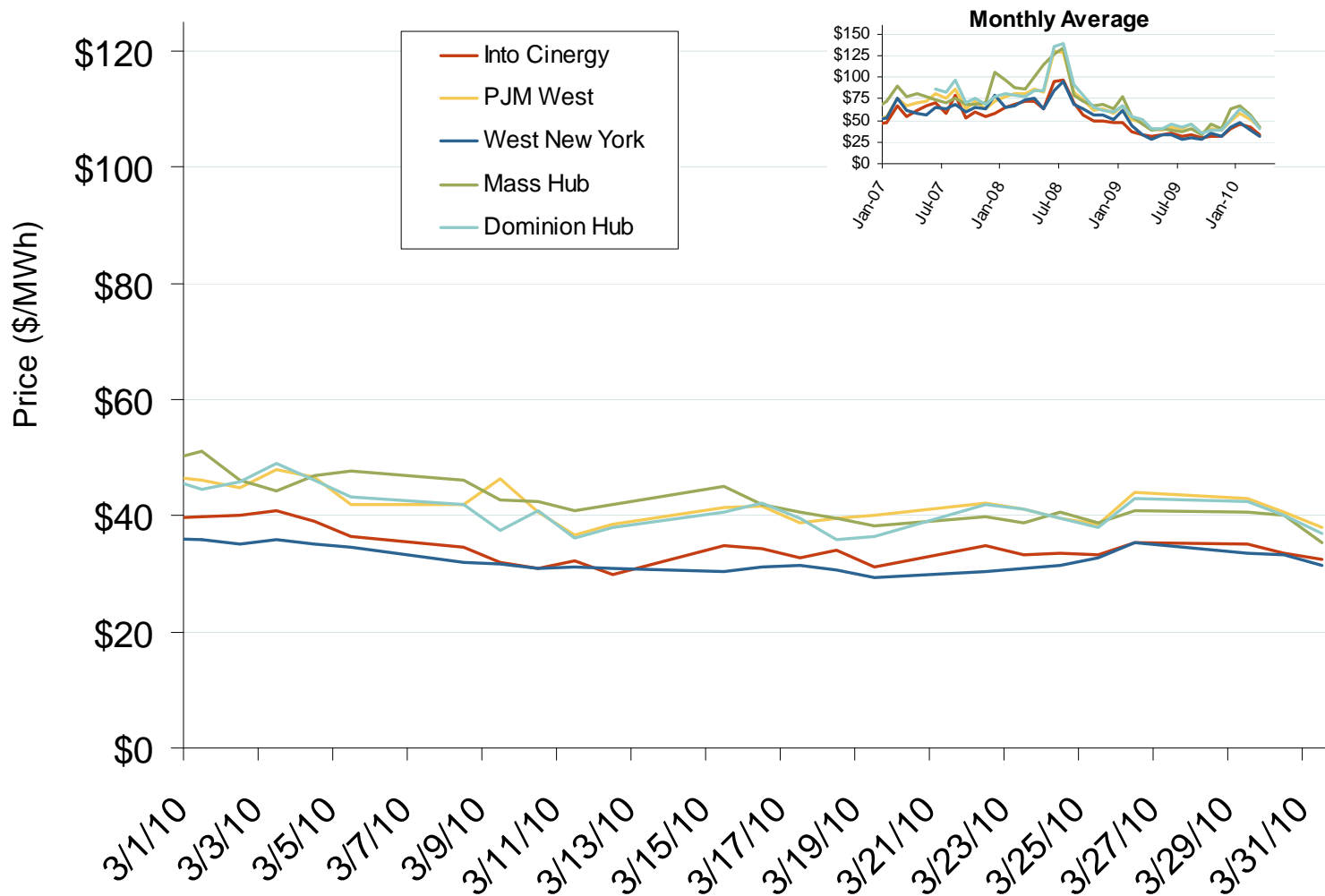


Source: Derived from *Platts* data.

Updated April 9, 2010

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## Eastern Daily Bilateral Day-Ahead On-Peak Prices

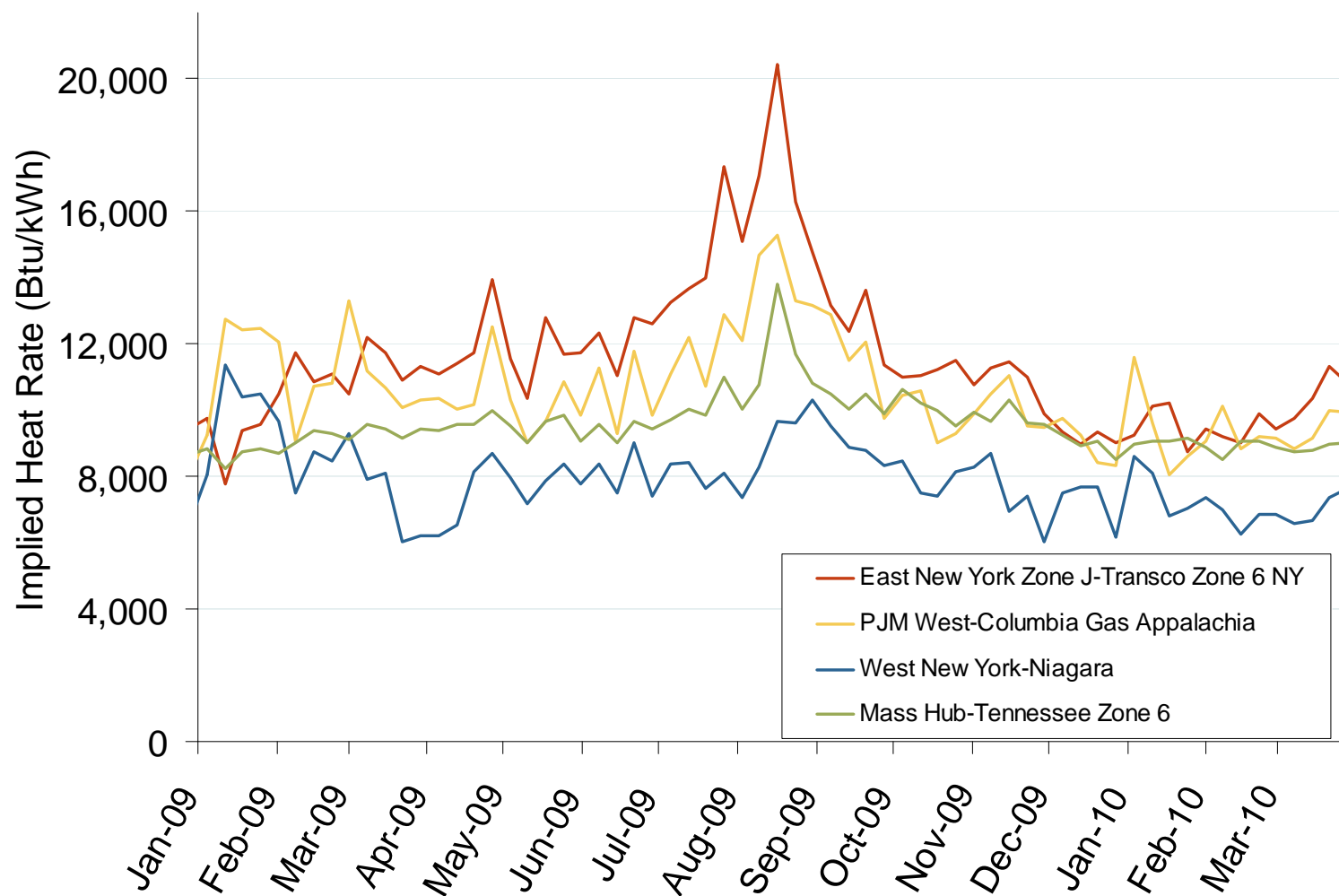


Source: Derived from *Platts* data.

Updated April 9, 2010

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## Implied Heat Rates at Eastern Trading Points Weekly Averages

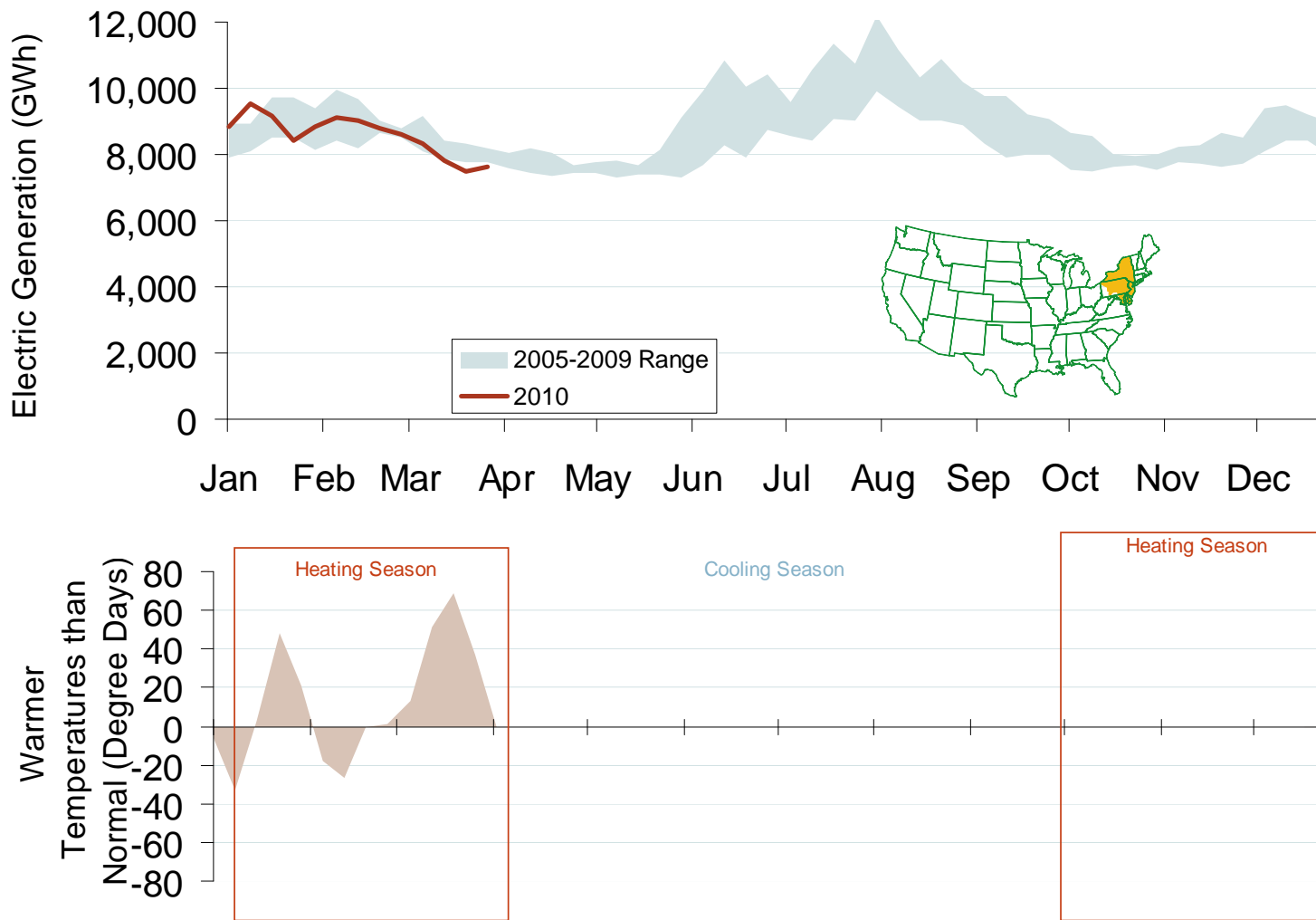


Source: Derived from *Platts* on-peak electric and natural gas price data.

Updated April 9, 2010

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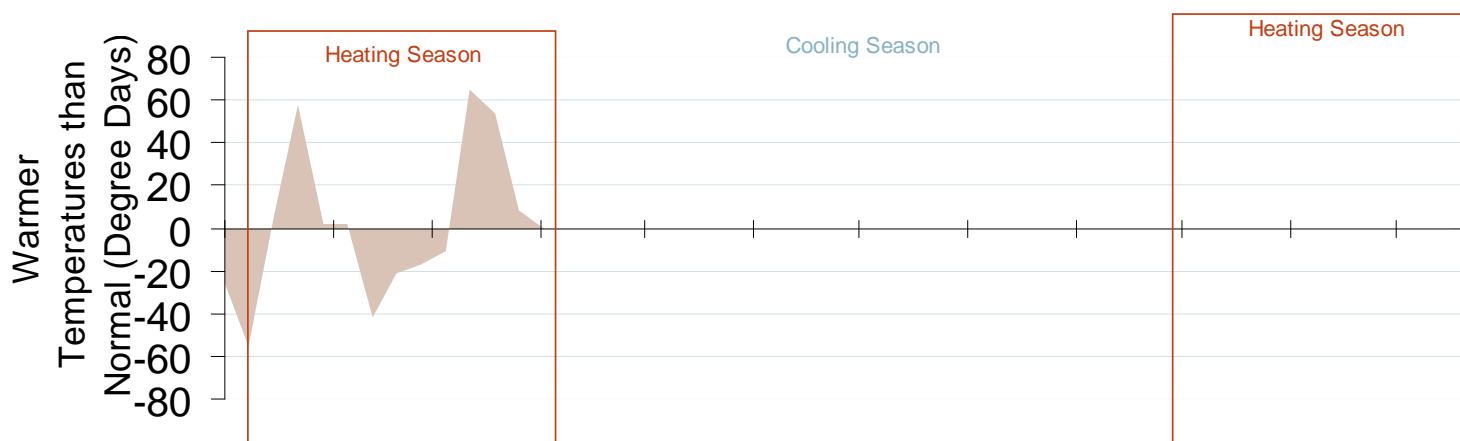
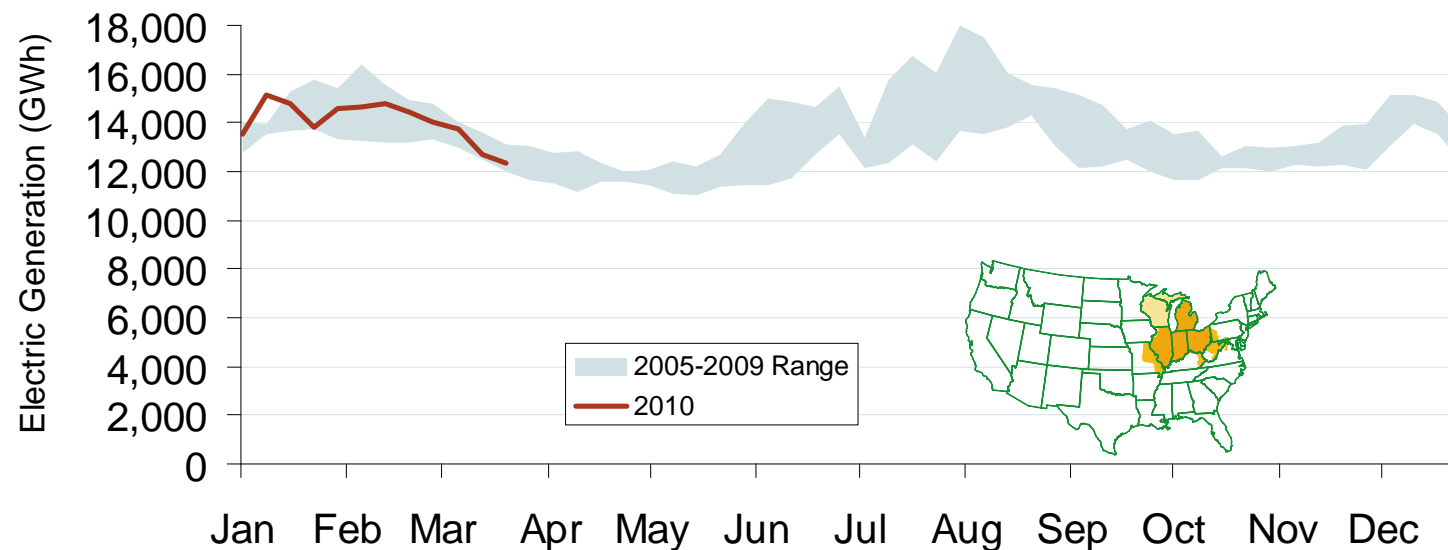
# Weekly Electric Generation Output and Temperatures Mid Atlantic Region



Source: Derived from *EEl* and NOAA data.

Updated April 9, 2010

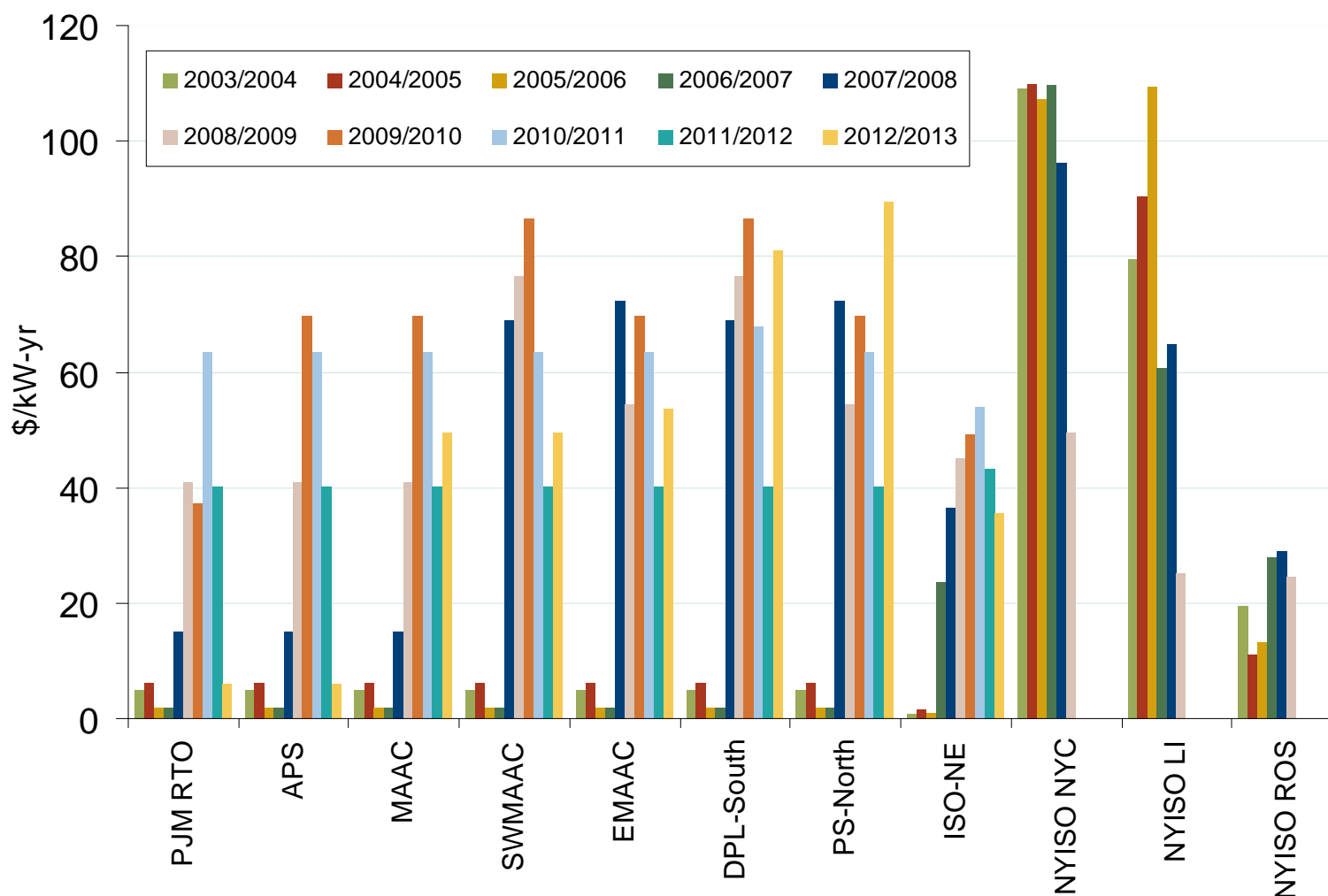
# Weekly Electric Generation Output and Temperatures Central Industrial Region



Source: Derived from EEI and NOAA data.

Updated April 9, 2010

## PJM, NYISO and ISO-NE Capacity Prices



Note: PJM RPM values are for Base Residual Auctions only.

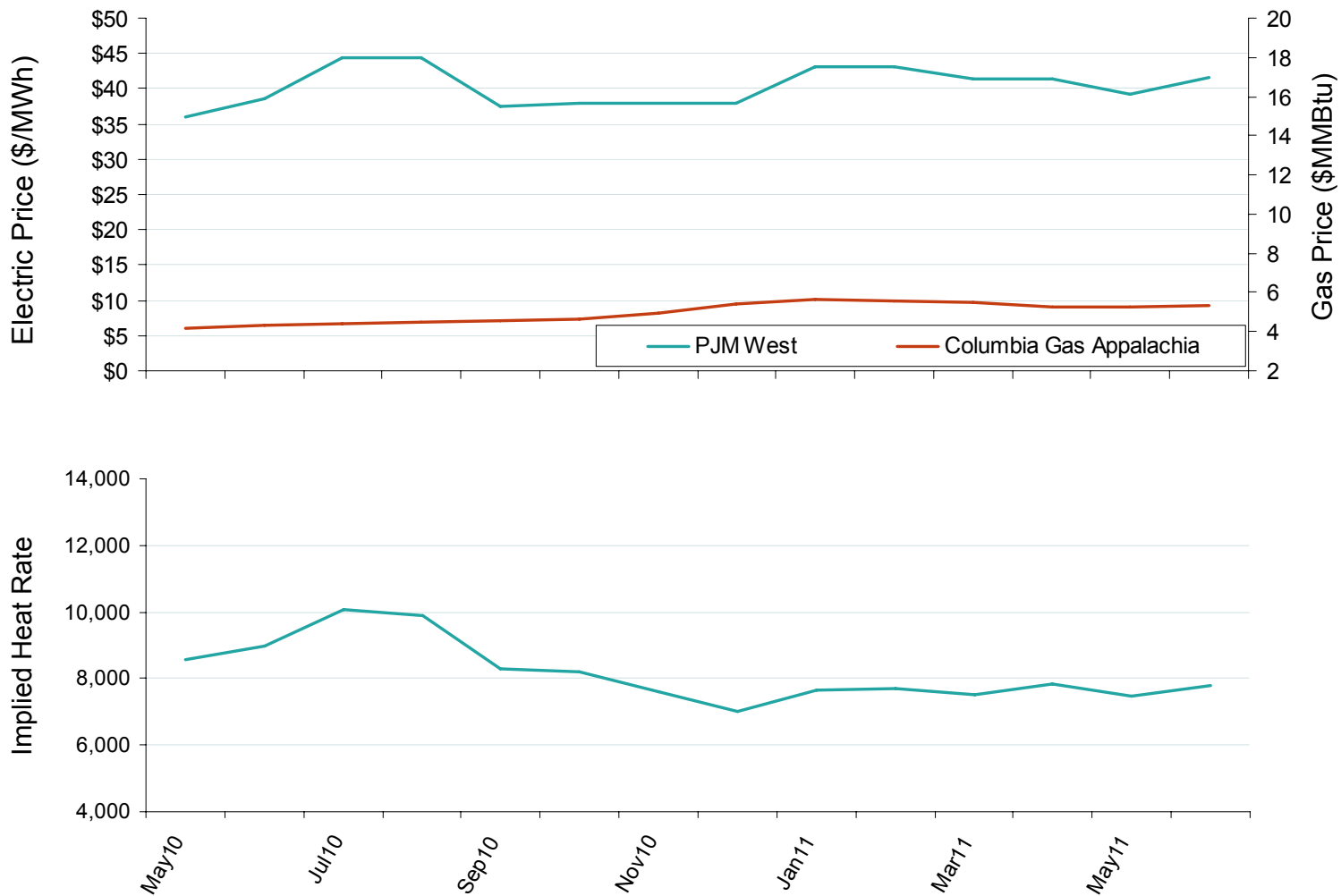
ISO-NE FCM results are based on preliminary FCM auction before pro-rationing and EAS adjustment.

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

Updated October 7, 2009

1146

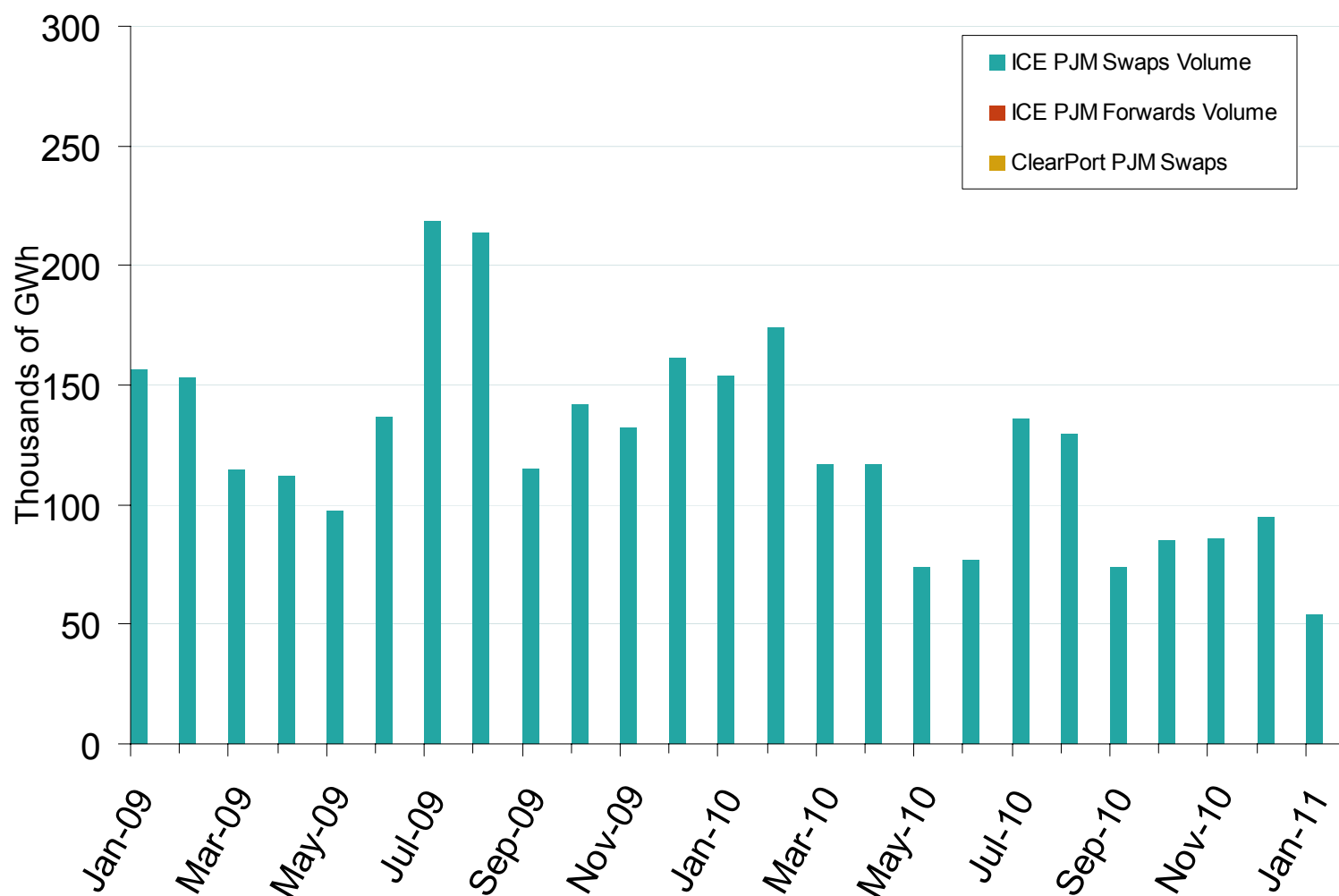
## PJM West Electric Forward Price Curves and Implied Heat Rates



Source: Derived from Nymex data.

Updated April 9, 2010

## 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 April 9, 2010

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