

11th Annual Ohio Energy Management & Restructuring Conference

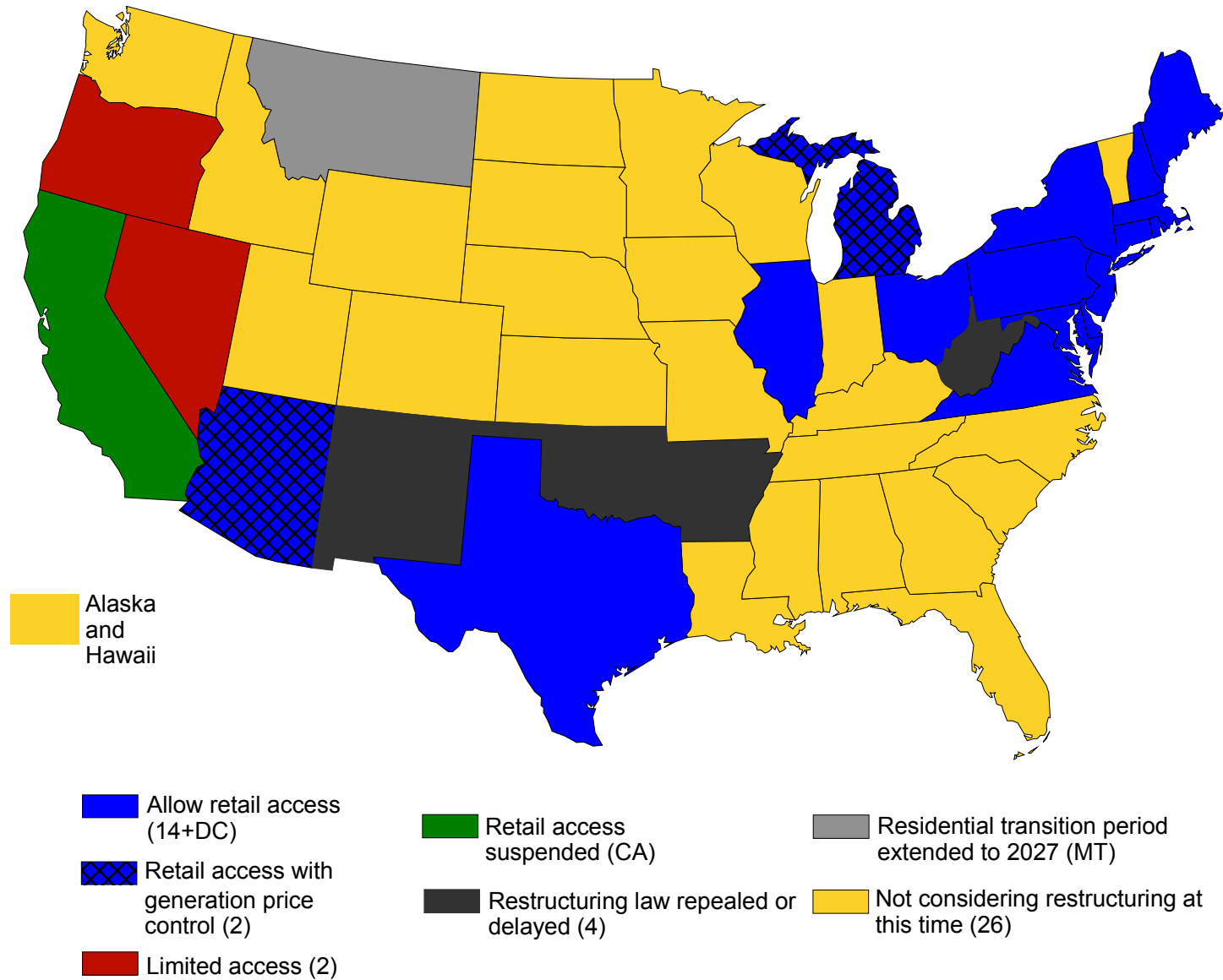
Columbus, Ohio
February 28, 2007

Perspective on the National
Electricity Marketplace

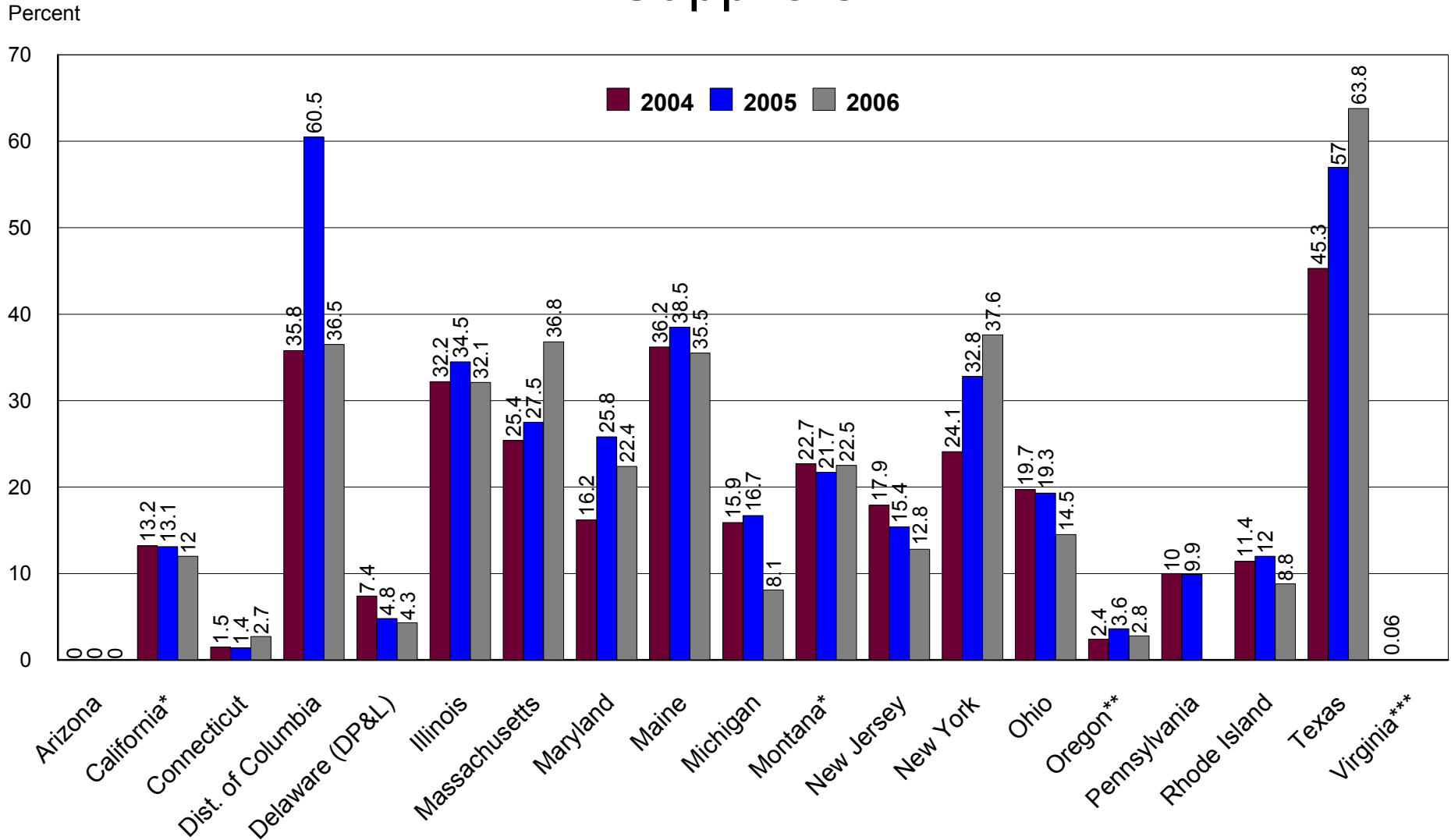
by

Kenneth Rose, Ph.D.

Status of State Restructuring



Percent of Total State Load Served by Competitive Suppliers



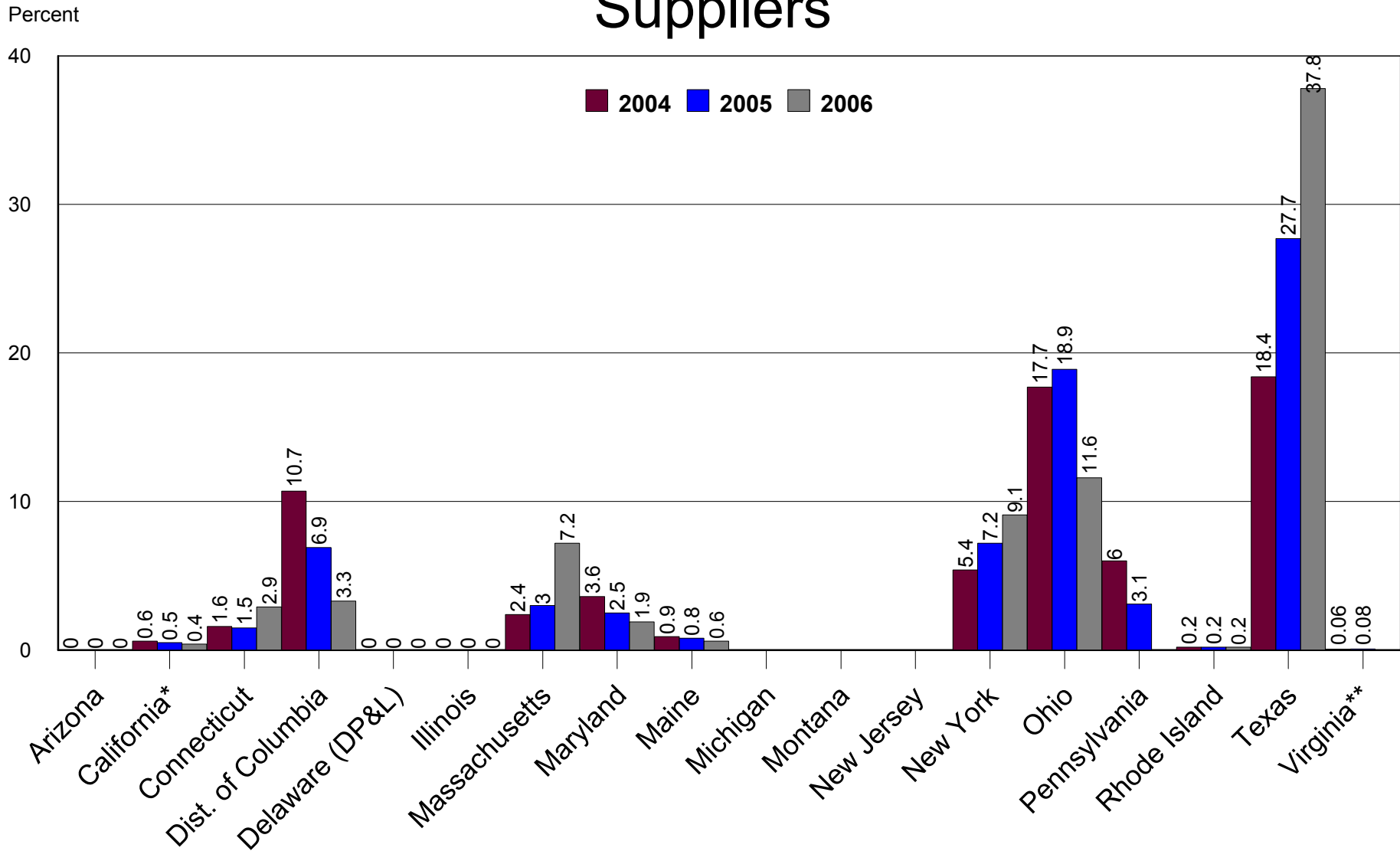
*California retail access was suspended, Montana delayed residential retail access.

**Oregon has retail access for large customers only.

***Virginia percentages are percent of customers, all others are percent of load.

Data Sources: KEMA, Inc., "Retail Energy Foresight," June/July 2004, May/June 2005, March/April 2006 and the Virginia State Corporation Commission.

Percent of Residential Load Served by Competitive Suppliers

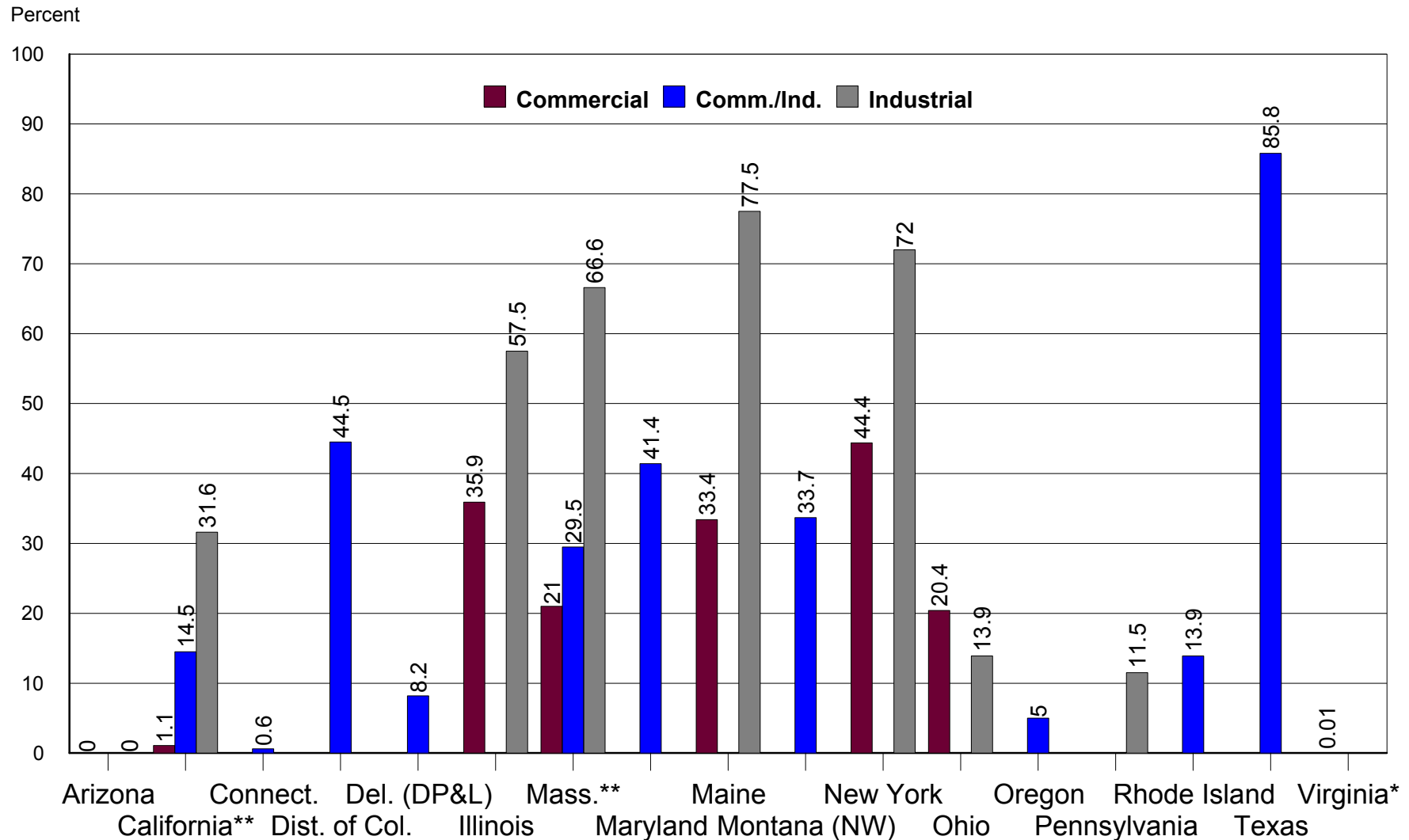


*California retail access was suspended, Montana delayed residential retail access.

**Virginia percentages are percent of customers, all others are percent of load.

Data Sources: KEMA, Inc., "Retail Energy Foresight," June/July 2004, May/June 2005, March/April 2006 and the Virginia State Corporation Commission.

Percent of Commercial and Industrial Load Served by Competitive Suppliers, 2006



*Virginia percentages are percent of customers, all others are percent of load.

**For California and Massachusetts, the category shown as "Comm./Industrial" is large commercial.

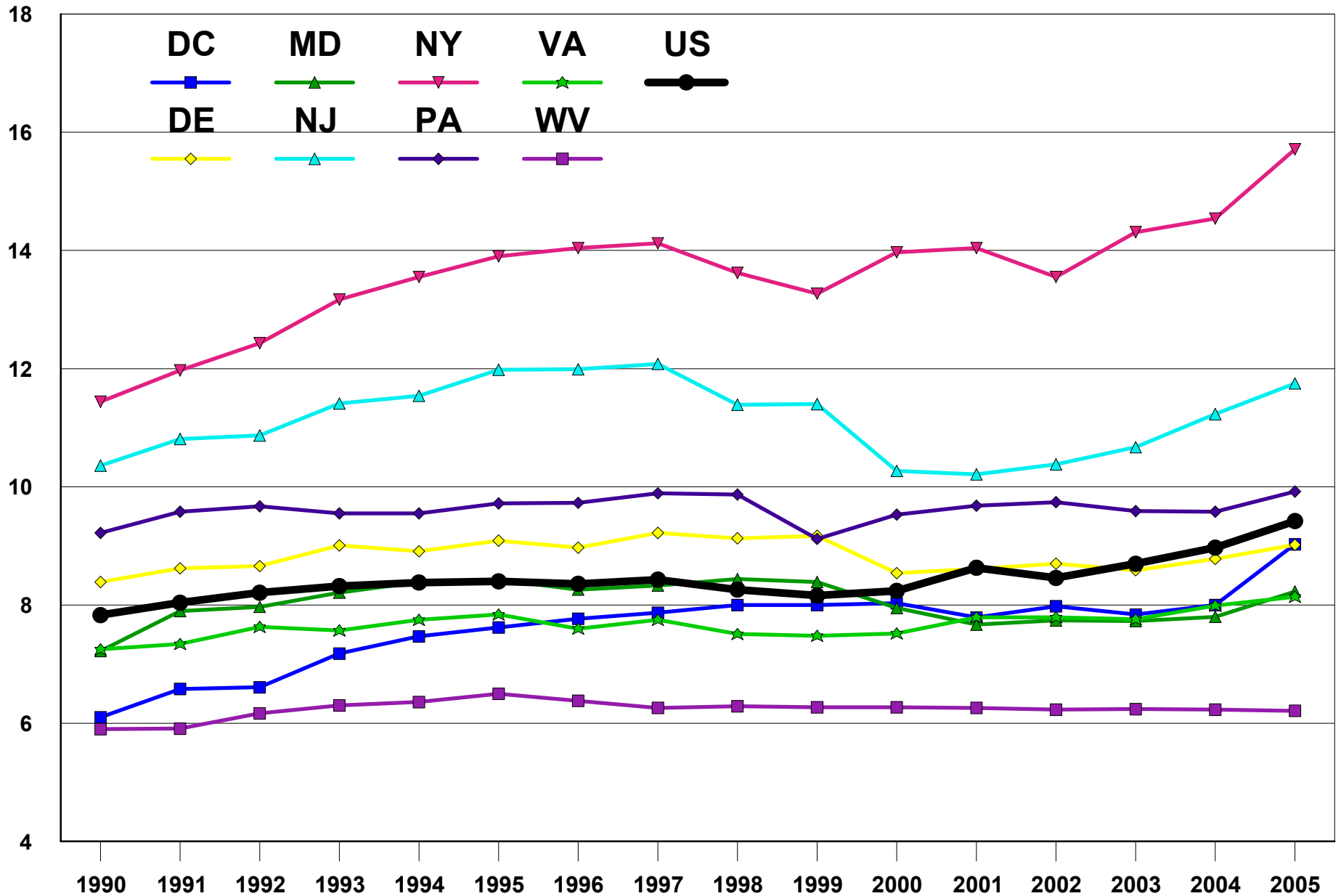
Data Sources: KEMA, Inc., "Retail Energy Foresight," March/April 2006 and the Virginia State Corporation Commission, 2005.

Last Year's Headlines

- Maryland (BGE): 72% increase for residential customers beginning July 1, 2006 -- phased-in
- Pennsylvania (Pike County Light & Power): 70% increase
- Delaware (Delmarva): 59% increase for residential customers, 47% to 118% increase for business class customers beginning in May of 2006 -- to be phased-in
- D.C.: 12 percent increase for residential customers effective June 1, 2006
- New Jersey: 12% to 14% in June 2006
- Illinois: 22% for ComEd, 40% to 55% for the three Ameren companies

Mid-Atlantic Residential Average Retail Price

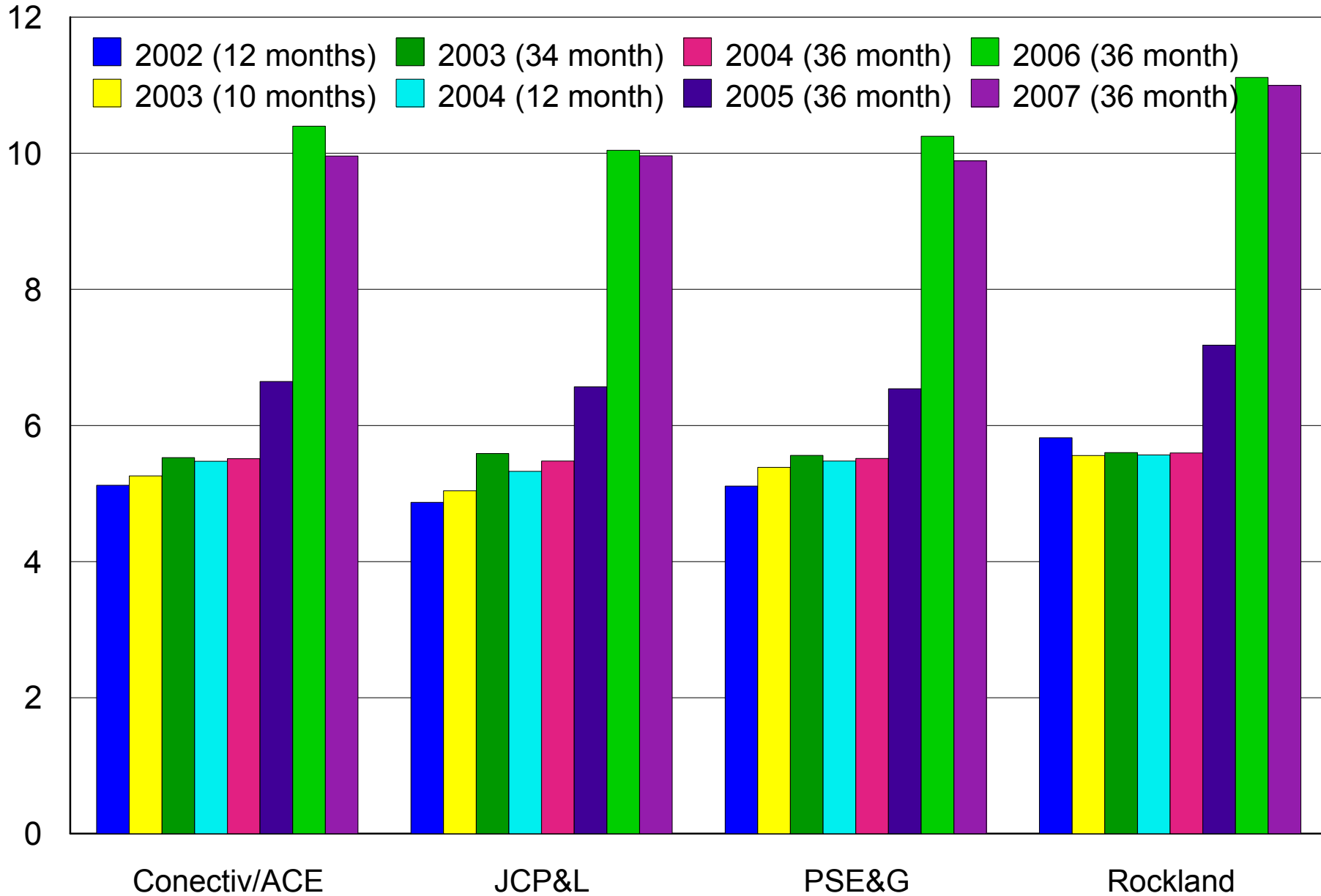
¢/kWh



Data Source: DOE/EIA

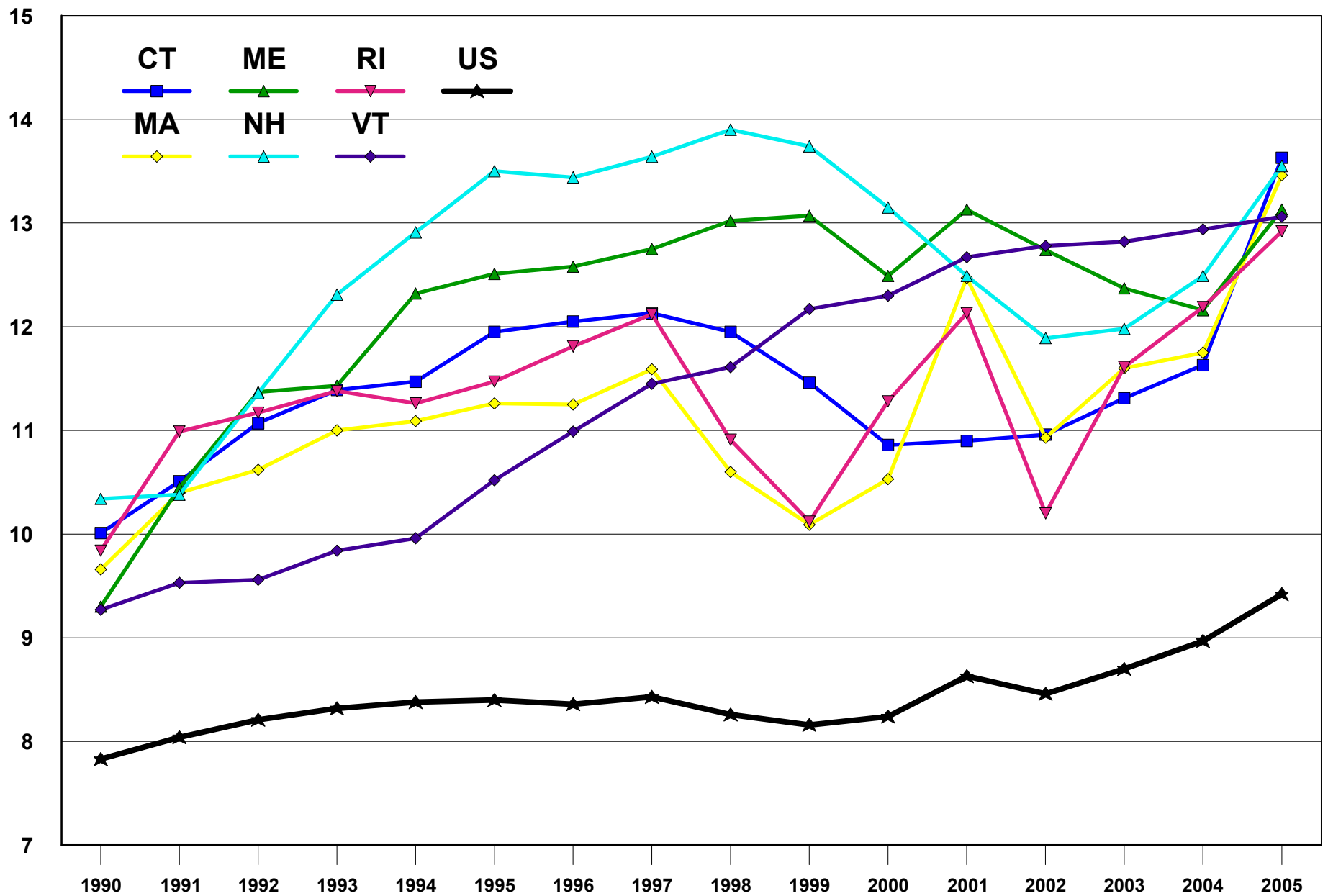
Results of the "Fixed Price" New Jersey Auctions (cents/kWh)

cents/kWh



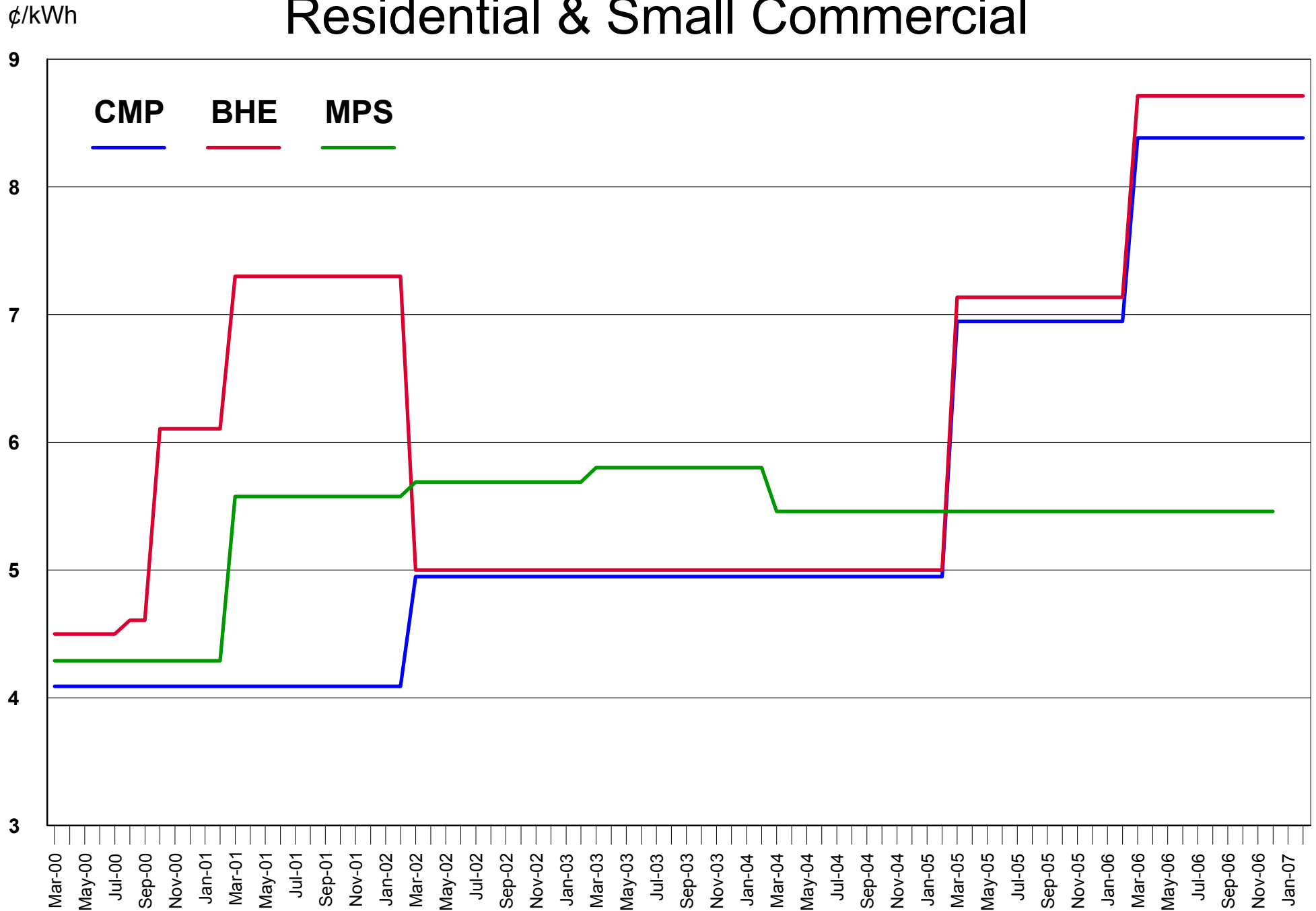
New England Residential Average Retail Price

¢/kWh



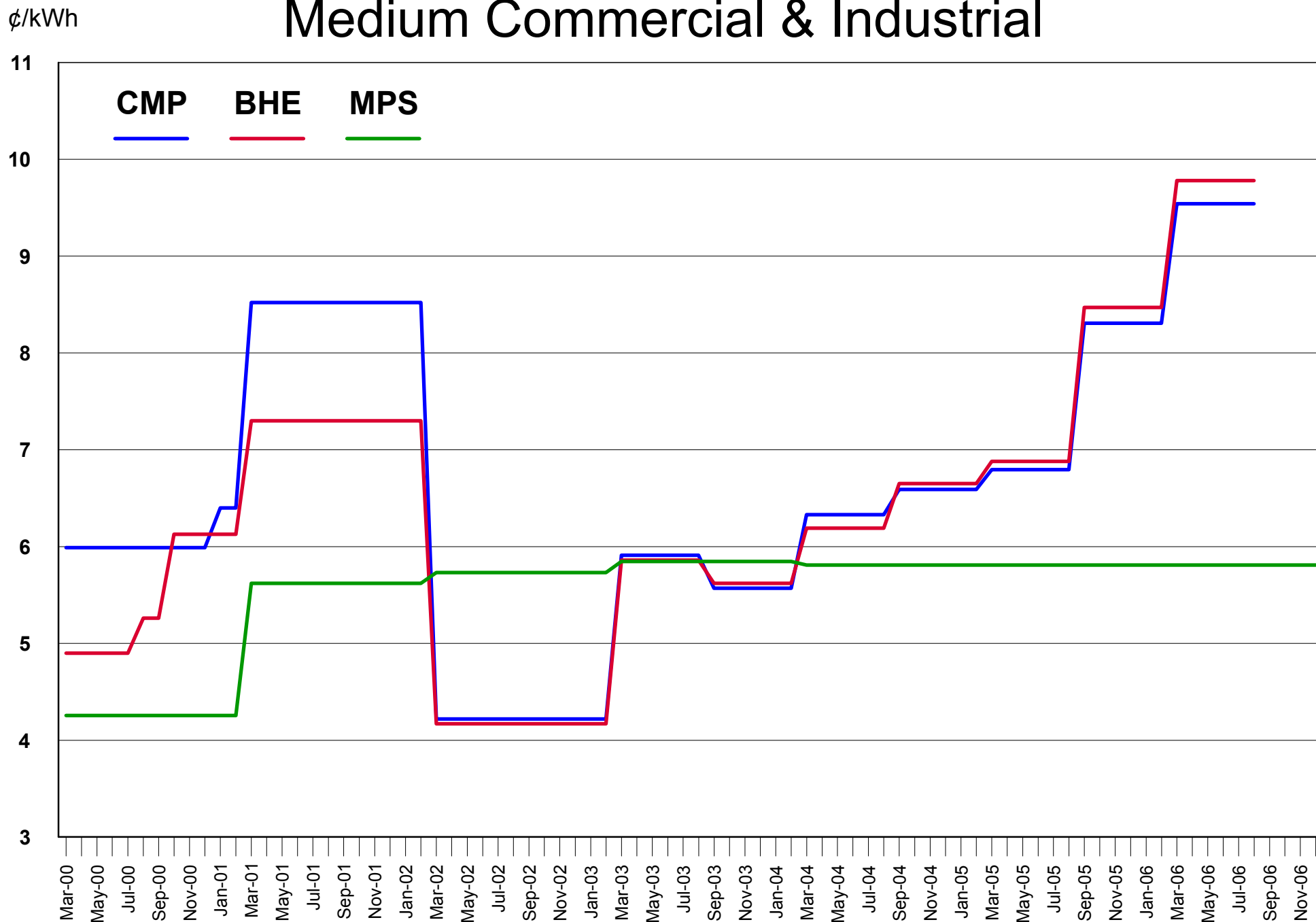
Data Source: DOE/EIA

Maine Standard Offer Service Prices Residential & Small Commercial



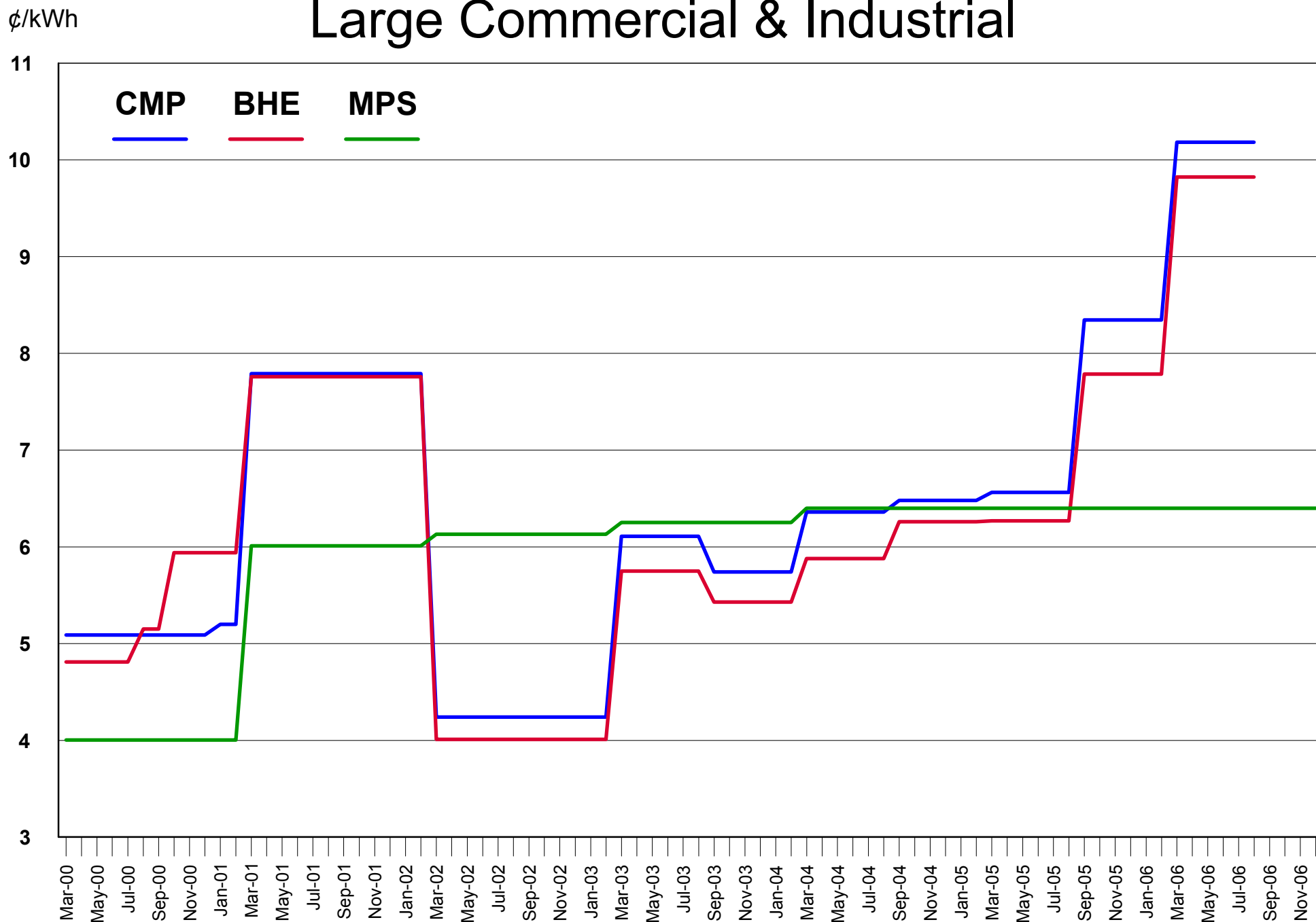
Data Source: Maine Public Utilities Commission.

Maine Standard Offer Service Prices Medium Commercial & Industrial



Data Source: Maine Public Utilities Commission.

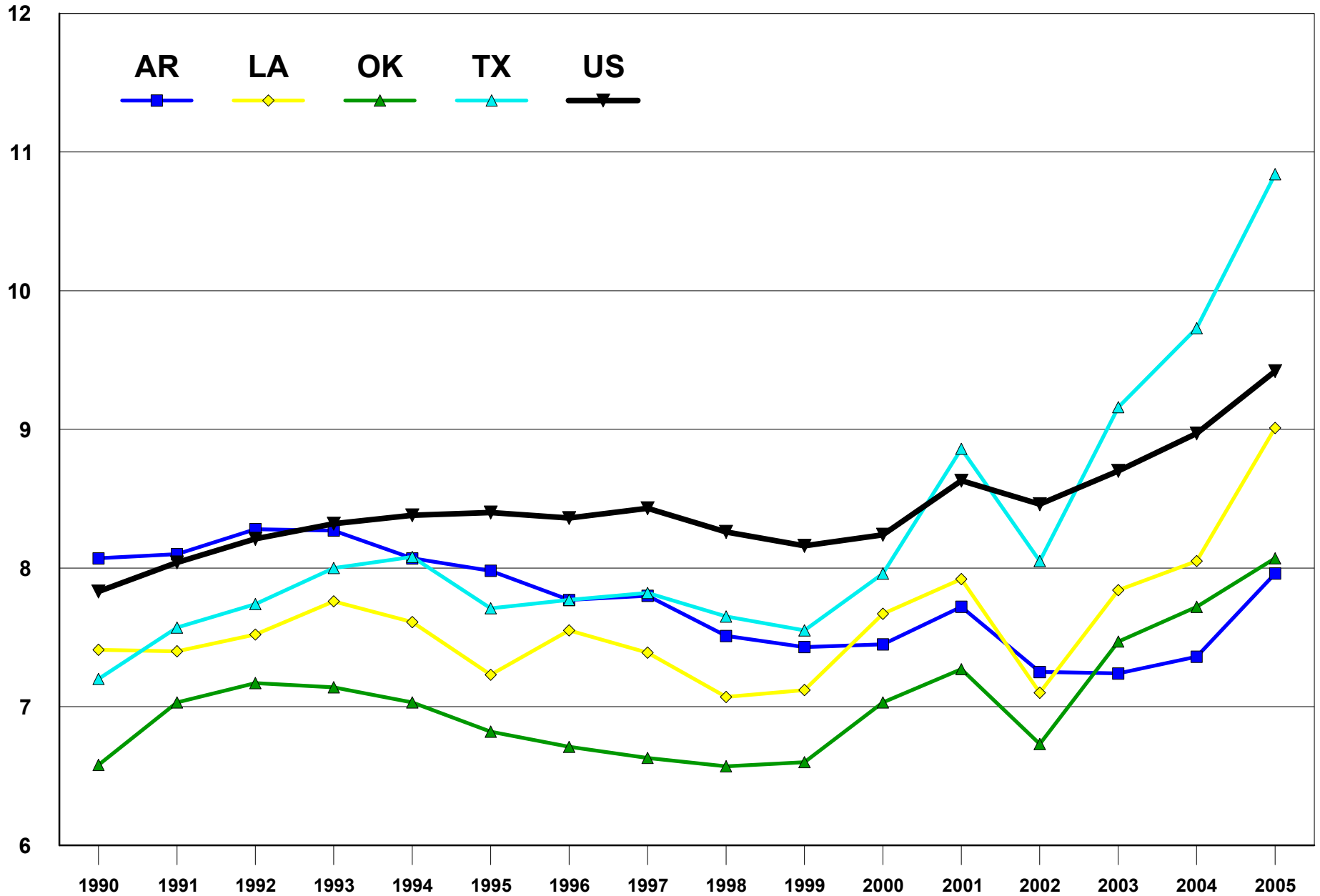
Maine Standard Offer Service Prices Large Commercial & Industrial



Data Source: Maine Public Utilities Commission.

Mid-South Residential Average Retail Price

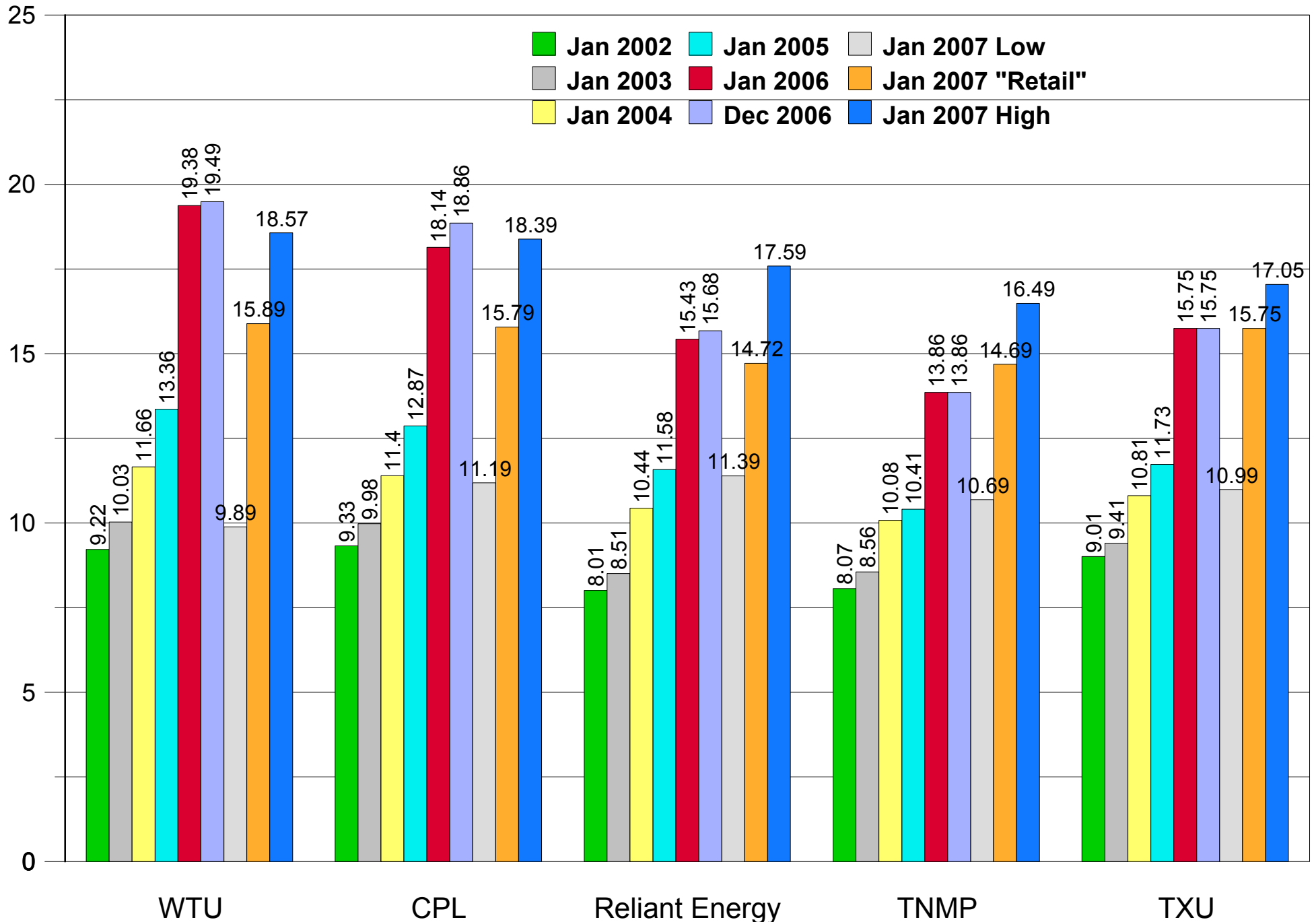
¢/kWh



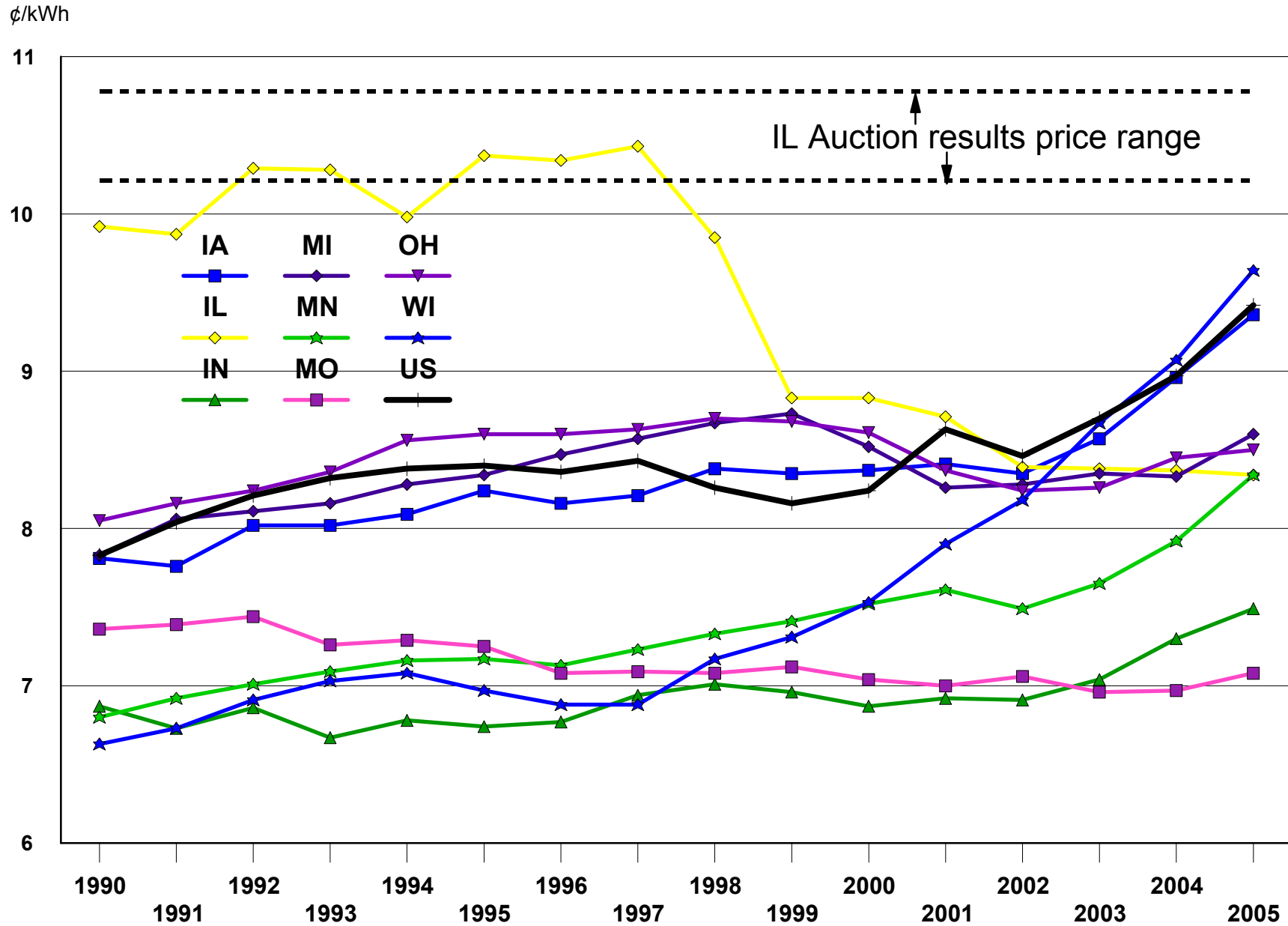
Data Source: DOE/EIA

Texas Residential "Price-to-Beat"

cents/kWh



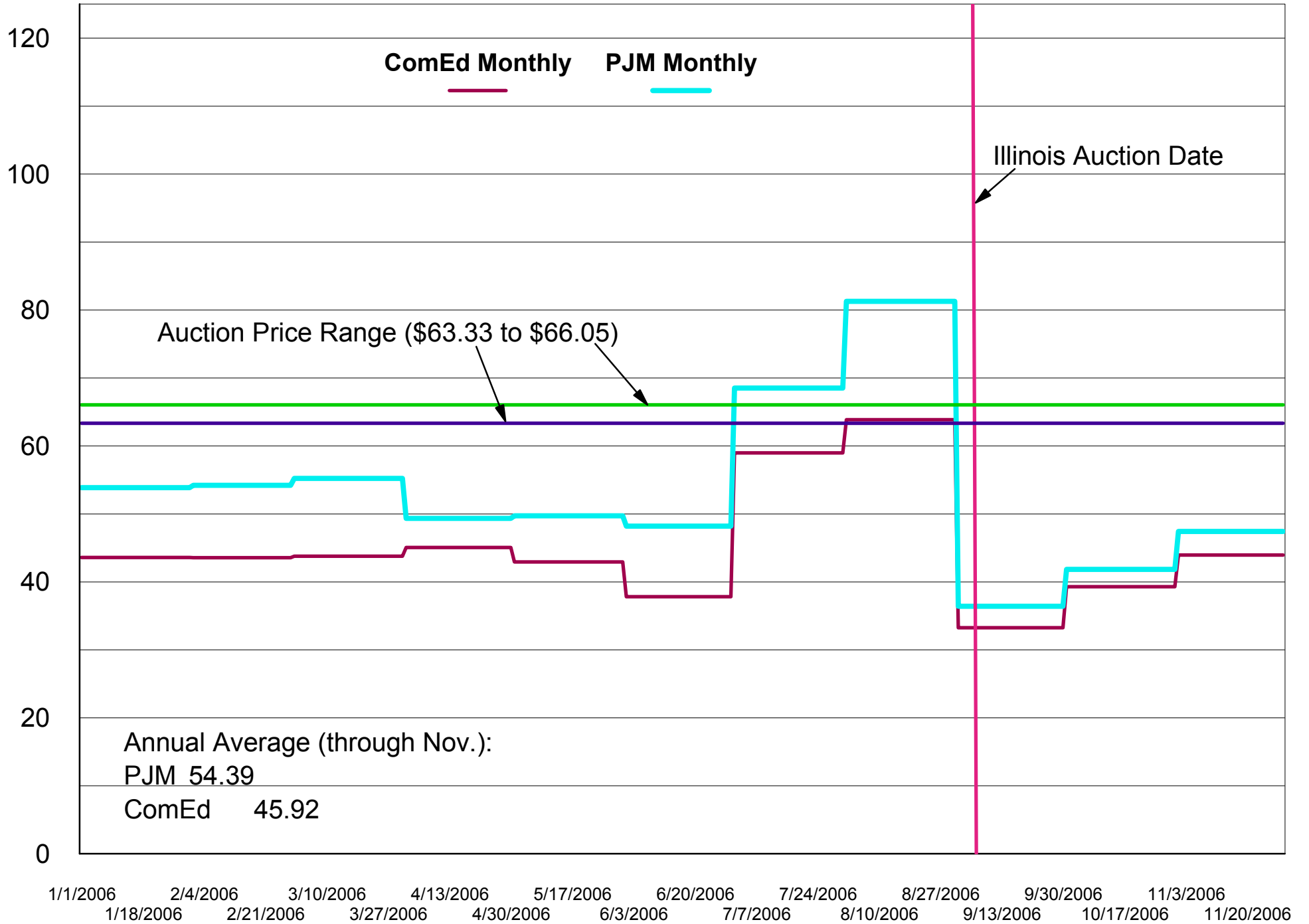
Midwest Residential Average Retail Price



Data Sources: DOE/EIA and Illinois auction results.

Monthly PJM prices and Illinois auction price range

\$/MWh



States Where the Residential Price is (Mostly) Determined in the Market

- 2006 or before:
 - ▶ Delaware
 - ▶ District of Columbia
 - ▶ Maine
 - ▶ Maryland
 - ▶ Massachusetts
 - ▶ New Jersey
 - ▶ New York
- Begin 2007
 - ▶ Connecticut
 - ▶ Illinois
 - ▶ Texas

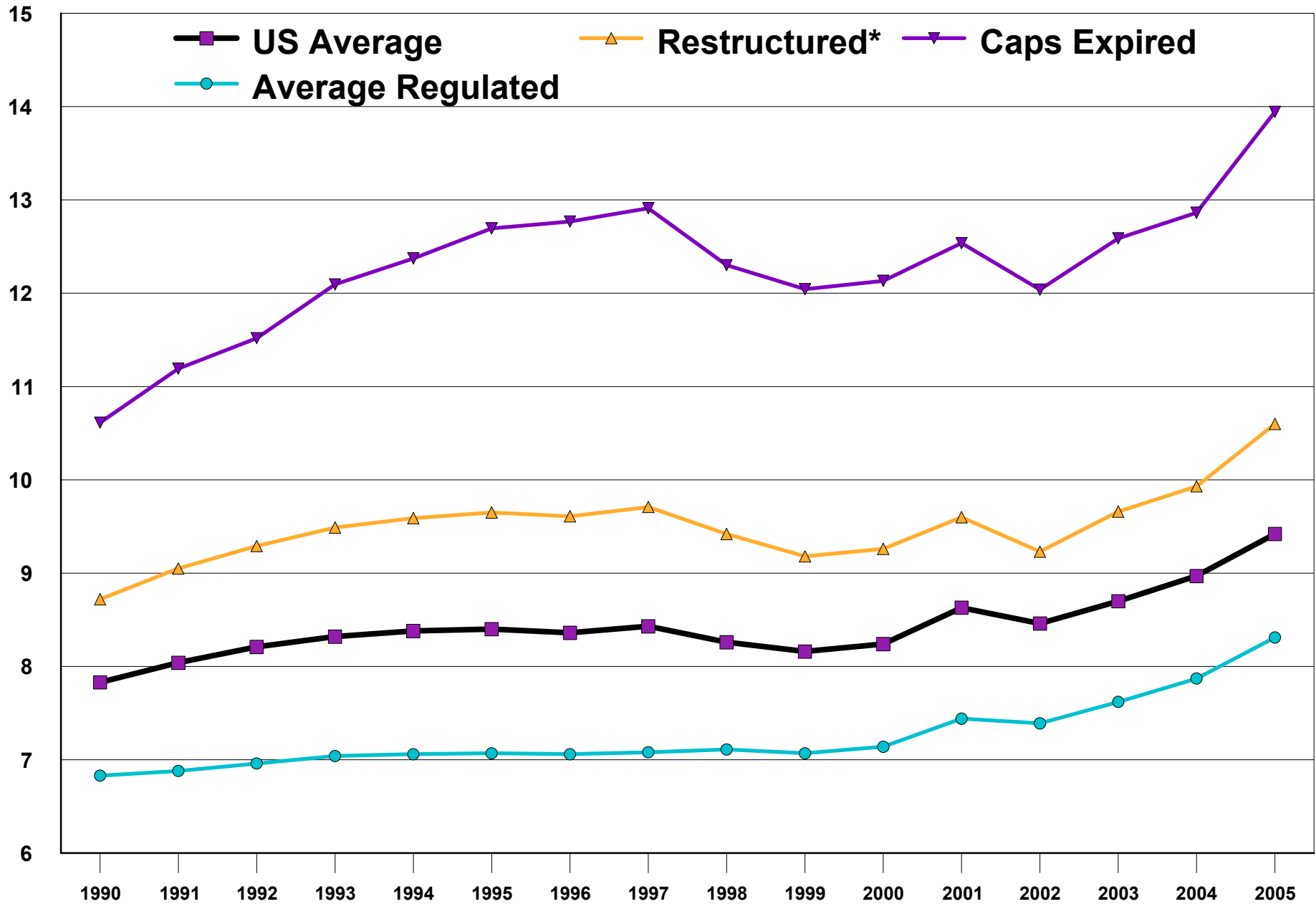
Utility Share of Generation in States Where the Residential Price is Determined in the Market

	Utility Share of Generation - 1993*	Utility Share of Generation - 2002*
Delaware	92.1	2.8
District of Columbia	100.0	0.0
Maine	51.7	0.0
Maryland	96.7	0.1
Massachusetts	76.0	2.8
New Jersey	70.9	2.5
New York	85.6	31.1

*Electric utility share of total electricity generation in the state (MWh). Source: DOE/EIA.

Caps expired, regulated, US average and restructured states

¢/kWh

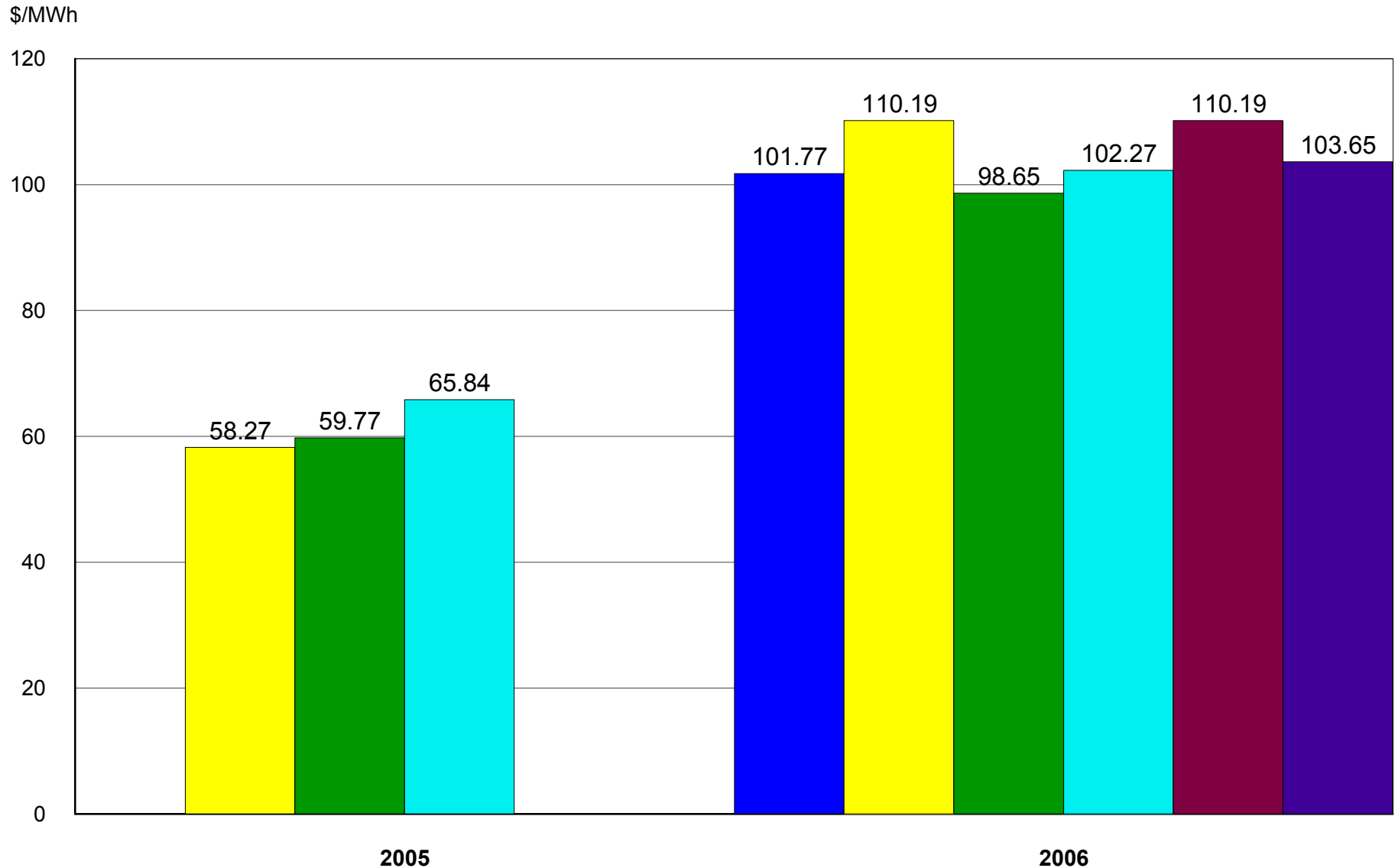


*Does not include Arizona, California, and Michigan. Averages are weighted by state residential sales. Data source: DOE/EIA.

Auction/Bidding Price Results for Generation in Mid-Atlantic States*

■ Delaware (Delmarva)
 ■ Maryland
 ■ Pennsylvania (Pike County Light & Power)
 ■ Virginia (Delmarva Power & Light)

■ Dist. of Columbia
 ■ New Jersey

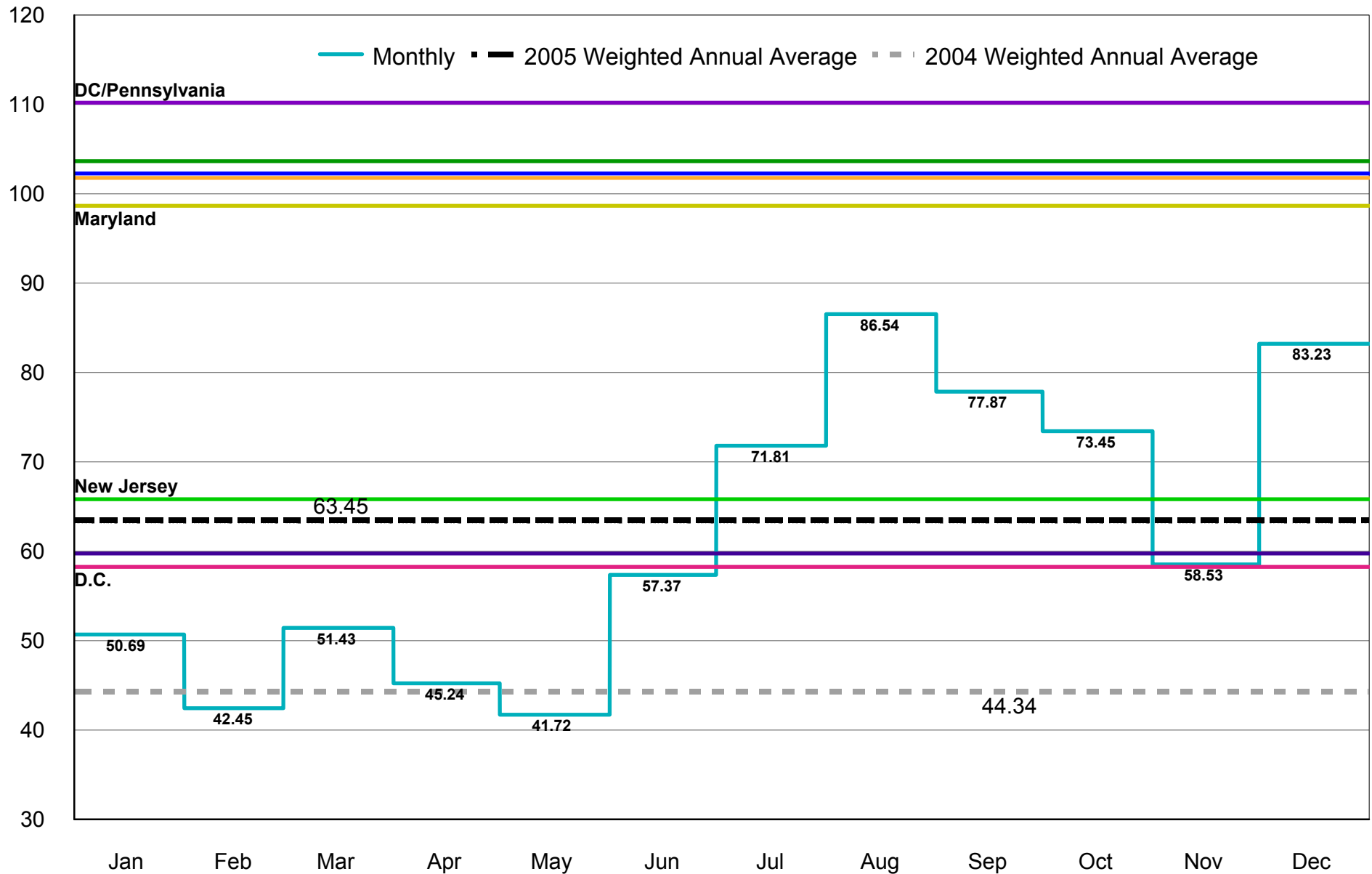


*Weighted-average price for state (Maryland and New Jersey) or for utility.

Data Sources: various state sources.

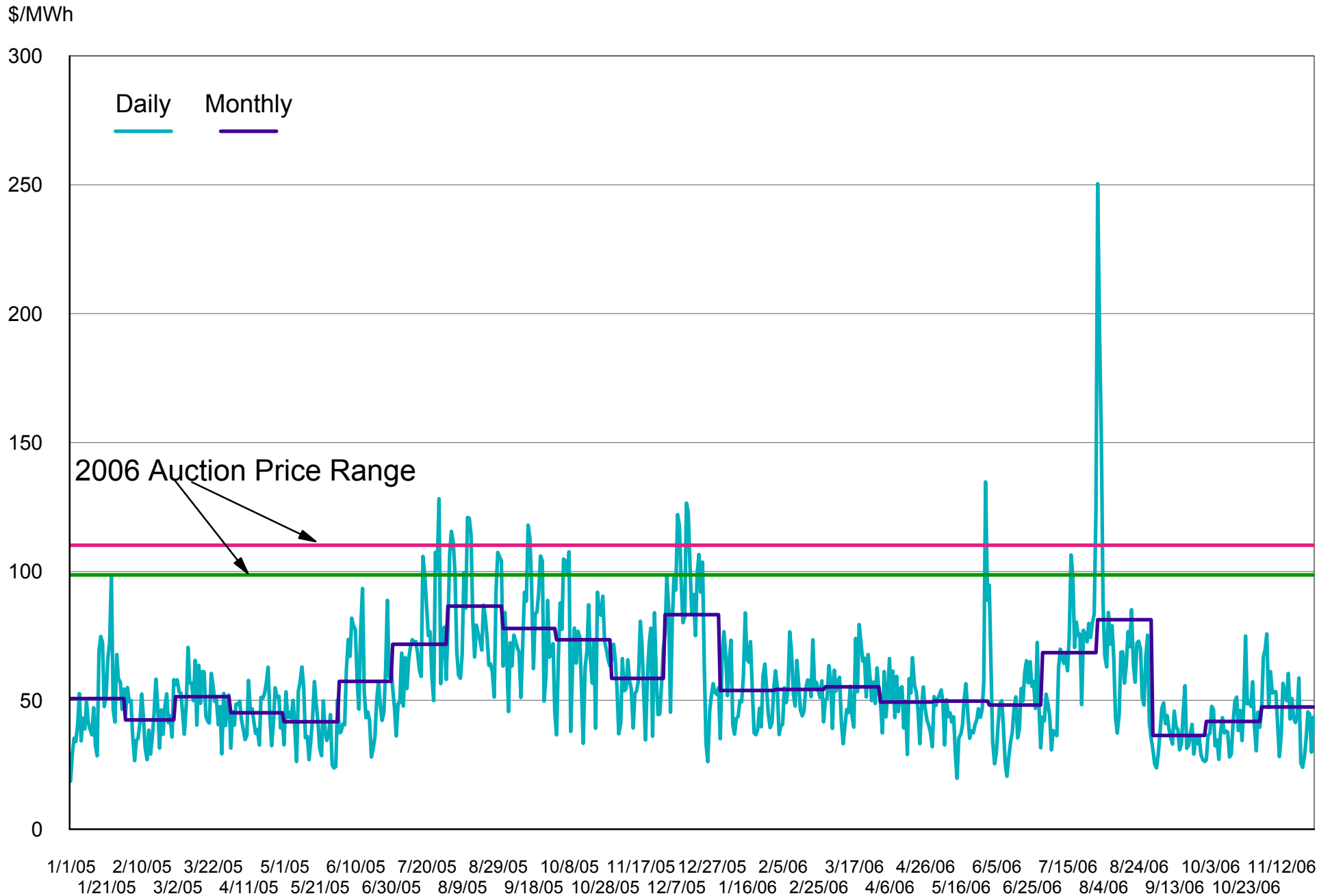
Auction/Bidding Results and PJM Market Prices

\$/MWh



2005

Monthly and Daily PJM Prices and 2006 Auction Prices



Data Source: PJM and state auction results

Minding the Gap

- What accounts for the difference between wholesale spot market prices and the auction prices?
 - ▶ risk that natural gas prices will spike again
 - ▶ capacity costs and other costs not accounted for in the energy price
 - ▶ strategic and manipulative behavior (i.e., market power)

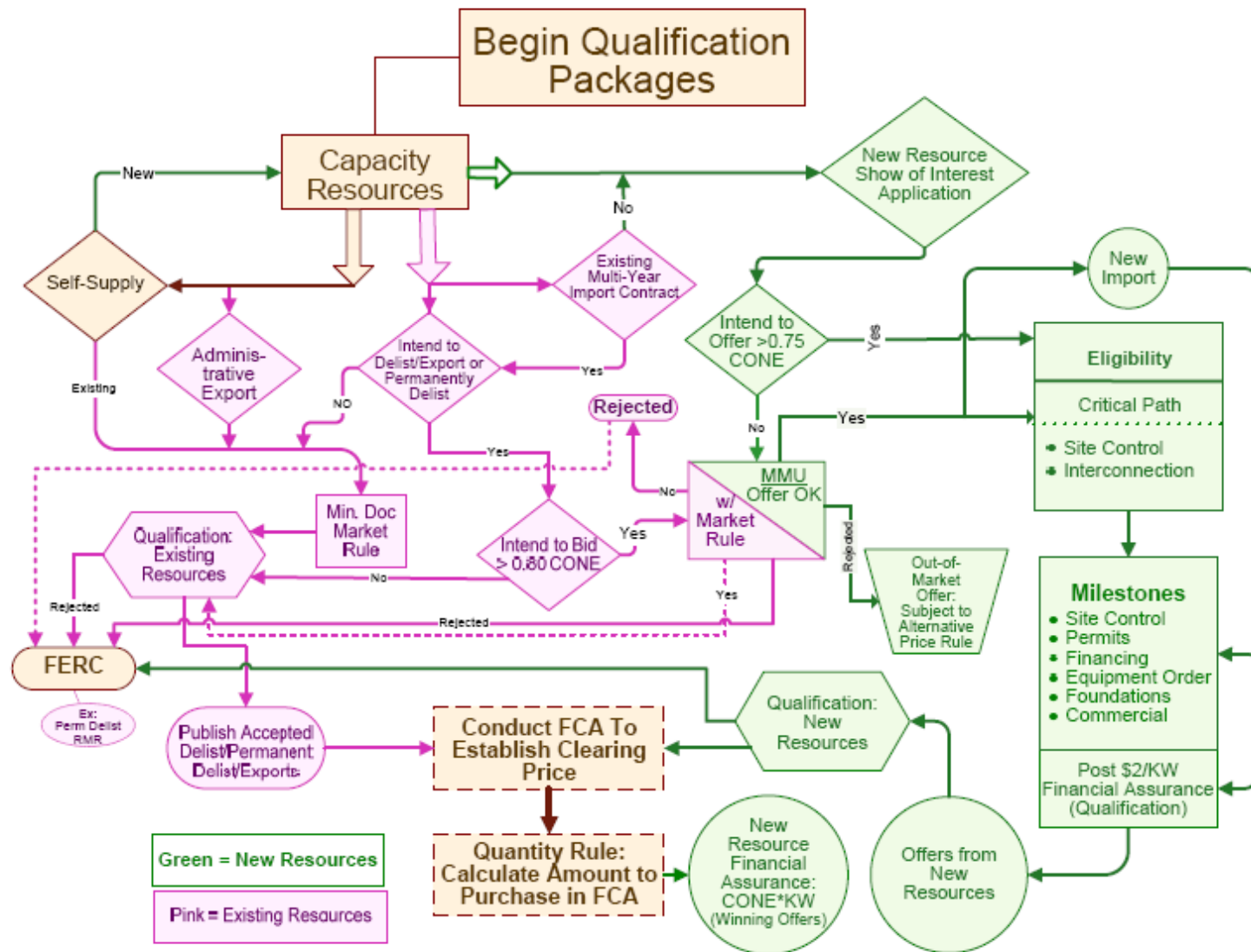
New Capacity Market in New England

- In June 2006, FERC approved a Settlement Agreement to create a Forward Capacity Market (FCM) that will replace the current Installed Capacity Market (ICAP)
- 2010-2011 will be the first year capacity will be auctioned
- There is a transition period between December 1, 2006 and 2010
- During the transition period, all listed ICAP resources receive a monthly capacity payment based on a fixed payment rate that is adjusted for each year

New Capacity Market in New England (*continued*)

- Qualified ICAP Resources receive an ICAP payment for each month that it is listed, calculated as the product of the resource's UCAP rating and the following fixed payment rate (ICAP Transition Rate):
 - ▶ Dec. 1, 2006 to May 31, 2007 \$3.05/kW-Month
 - ▶ June 1, 2007 to May 31 2008 \$3.05/kW-Month
 - ▶ June 1, 2008 to May 31, 2009 \$3.75/kW-Month
 - ▶ June 1, 2009 to May 31, 2010 \$4.10/kW-Month
- The Maine PUC estimates that it will cost their customers \$300 million over the next four years
- *Is this money for nothing or checks for free?*

Qualification Process . . . is quite simple



PJM's "Reliability Pricing Model"

- Auction for the 2007/2008 planning year is set for April 2007
- PJM simulation for 2007/2008:

Input Data

Region	Import Limit	Existing UCAP	Future UCAP	Retirements (UCAP)	Available UCAP
Eastern MAAC	8000	32854	109	1245	31718
Southwest MAAC	4700	10858	0	2	10856
Market	N/A	114553	2144	2250	114447
RTO		158265	2253	3496	157021

Results

Region	Awarded UCAP	Import MWs	Clearing Price (\$/MW-Day)	Import Shadow Price (\$/MW-Day)
Eastern MAAC	31718	8000	\$106.06	\$89.92
Southwest MAAC	10856	4700	\$35.94	\$19.80
Market	108747	-12700	\$16.14	\$0.00
RTO	151321	0		

More information can be found at:

<http://www.pjm.com/markets/rpm/rpm.html>

Three Big Challenges Facing the Electric Supply Industry

- Higher fuel prices -- especially natural gas
 - Need for additional generation and transmission capacity
 - Additional environmental constraints? -- possible limits on carbon dioxide emissions
- This adds up to the electricity supply business facing perhaps its biggest challenges in its 125 year history

WHERE DO WE GO FROM HERE?

- Perhaps the industry's biggest challenge yet -- even considering the last 30 years haven't been exactly "calm"
- How should we meet these challenges?
 - ▶ with the current structure, more or less market mechanisms, old or new style regulation?
- Need more pragmatism, less dogma