



State of the Market Report 2007 Overview

MRC
March 19, 2008

Joseph Bowring
Market Monitor

- Independent Market Monitoring
 - Independent from Market Participants
 - Independent from RTO management
 - Independent from RTO board of directors
- MMU Accountability
 - To FERC (per FERC MMU Orders and MM Plan).
 - To PJM markets.

- Market monitoring is required by FPA/FERC Orders
- Role of competition under the FPA
 - Mechanism to regulate prices
 - Competitive outcome = just and reasonable
- Relevant model of competition is not laissez faire
- Competitive outcomes are not automatic
- Detailed rules required – like other markets/exchanges
- Detailed monitoring required to ensure competitive outcomes:
 - Of participants
 - Of RTO
 - Of rules

- Energy Market results were competitive
- Capacity Market results were competitive
- Regulation Market results cannot be determined to have been competitive or to have been noncompetitive
- Spinning Market results were competitive
- FTR Market results were competitive



- Retention and application of the improved local market power mitigation rules
- Retention of the \$1,000 per MWh offer cap in the PJM Energy Market and other rules that limit incentives to exercise market power
- Retention of the rules included in PJM's Reliability Pricing Model (RPM) Tariff
- Implementation of enhancements to PJM's rules governing operating reserve credits

- Continued enhancements to the cost-benefit analysis of congestion and transmission investments.
- Modification of rules governing demand-side programs to ensure accurate measurement, verification and payment.
- Provision of data for external control areas to PJM to enable improved analysis of loop flows in order to enhance the efficiency of PJM markets.
- Continued enhancement of mechanisms used to manage flows at interfaces with external areas.

- Enhancements to PJM's scarcity pricing rules
- Implementation of targeted, flexible real-time market power mitigation in the Regulation Market.
- Consistent application of local market power rules to all constraints.
- Consistent application of local market power rules to all units, including those currently exempt from offer capping.



*Table 3-30 PJM installed capacity (By fuel source):
January 1, May 31, June 1, and December 31, 2007*

	1-Jan-07		31-May-07		1-Jun-07		31-Dec-07	
	MW	Percent	MW	Percent	MW	Percent	MW	Percent
Coal	66,613.5	40.9%	66,418.9	41.0%	66,546.0	40.7%	66,286.0	40.5%
Oil	10,771.1	6.6%	10,657.5	6.6%	10,645.0	6.5%	10,640.0	6.5%
Gas	47,528.0	29.2%	46,955.9	29.0%	47,557.0	29.1%	47,599.4	29.1%
Nuclear	30,056.8	18.5%	30,056.8	18.5%	30,880.8	18.9%	30,883.8	18.9%
Solid waste	719.6	0.4%	719.6	0.4%	714.6	0.4%	712.6	0.4%
Hydroelectric	7,122.9	4.4%	7,193.9	4.4%	7,287.2	4.5%	7,311.2	4.5%
Wind	28.8	0.0%	34.0	0.0%	28.8	0.0%	65.4	0.0%
Total	162,840.7	100.0%	162,036.6	100.0%	163,659.4	100.0%	163,498.4	100.0%



*Table 3-31 PJM generation (By fuel source (GWh)):
Calendar year 2007*

	GWh	Percent
Coal	416,180.7	55.3%
Oil	3,728.1	0.5%
Gas	57,825.8	7.7%
Nuclear	255,040.1	33.9%
Solid waste	4,896.0	0.7%
Hydroelectric	13,080.6	1.7%
Wind	1,345.8	0.2%
Total	752,097.2	100.0%

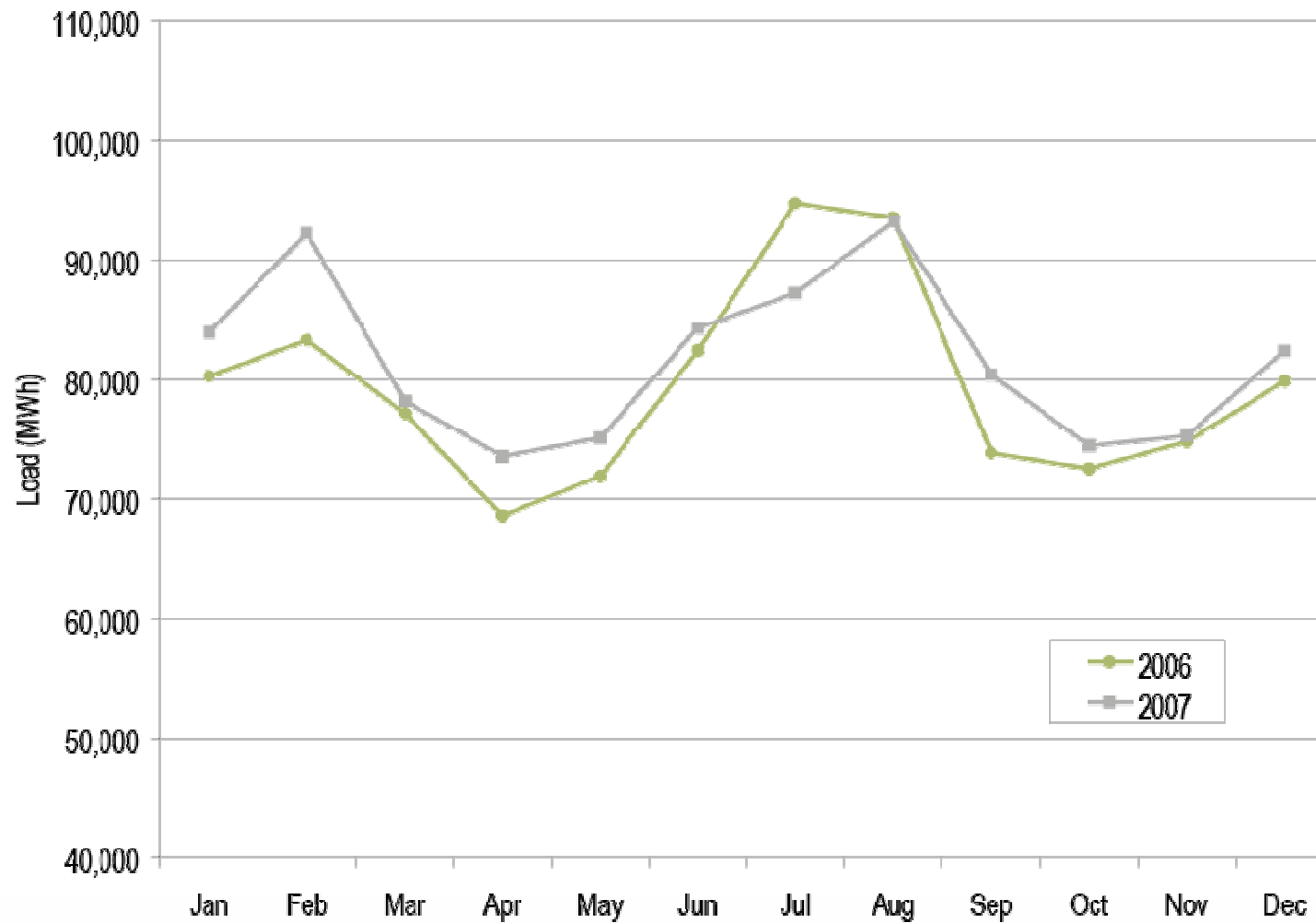


*Table 2-2 Actual PJM footprint summer peak loads:
1999 to 2007*

Year	Date	Hour Ending (EPT)	PJM Load (MW)	Difference (MW)
1999	06-Jul-99	1400	59,365	NA
2000	26-Jun-00	1600	56,727	(2,638)
2001	09-Aug-01	1500	54,015	(2,712)
2002	14-Aug-02	1600	63,762	9,747
2003	22-Aug-03	1600	61,500	(2,262)
2004	03-Aug-04	1700	77,887	16,387
2005	26-Jul-05	1600	133,763	55,876
2006	02-Aug-06	1700	144,644	10,881
2007	08-Aug-07	1600	139,428	(5,216)



*Figure 2-7 PJM real-time average load:
Calendar years 2006 to 2007*





*Table 2-48 PJM real-time, simple average LMP
(Dollars per MWh): Calendar years 1998 to 2007*

	Real-Time LMP			Year-to-Year Change		
	Average	Median	Standard Deviation	Average	Median	Standard Deviation
1998	\$21.72	\$16.60	\$31.45	NA	NA	NA
1999	\$28.32	\$17.88	\$72.42	30.4%	7.7%	130.3%
2000	\$28.14	\$19.11	\$25.69	(0.6%)	6.9%	(64.5%)
2001	\$32.38	\$22.98	\$45.03	15.1%	20.3%	75.3%
2002	\$28.30	\$21.08	\$22.40	(12.6%)	(8.3%)	(50.3%)
2003	\$38.27	\$30.79	\$24.71	35.2%	46.1%	10.3%
2004	\$42.40	\$38.30	\$21.12	10.8%	24.4%	(14.5%)
2005	\$58.08	\$47.18	\$35.91	37.0%	23.2%	70.0%
2006	\$49.27	\$41.45	\$32.71	(15.2%)	(12.1%)	(8.9%)
2007	\$57.58	\$49.92	\$34.60	16.9%	20.4%	5.8%



*Table 2-52 PJM real-time, annual, load-weighted, average LMP (Dollars per MWh):
Calendar years 1998 to 2007*

	Real-Time, Load-Weighted, Average LMP			Year-to-Year Change		
	Average	Median	Standard Deviation	Average	Median	Standard Deviation
1998	\$24.16	\$17.60	\$39.29	NA	NA	NA
1999	\$34.07	\$19.02	\$91.49	41.0%	8.1%	132.9%
2000	\$30.72	\$20.51	\$28.38	(9.8%)	7.8%	(69.0%)
2001	\$36.65	\$25.08	\$57.26	19.3%	22.3%	101.8%
2002	\$31.58	\$23.40	\$26.73	(13.8%)	(6.7%)	(53.3%)
2003	\$41.23	\$34.95	\$25.40	30.6%	49.4%	(5.0%)
2004	\$44.34	\$40.16	\$21.25	7.5%	14.9%	(16.3%)
2005	\$63.46	\$52.93	\$38.10	43.1%	31.8%	79.3%
2006	\$53.35	\$44.40	\$37.81	(15.9%)	(16.1%)	(0.8%)
2007	\$61.66	\$54.66	\$36.94	15.6%	23.1%	(2.3%)



Table 2-67 Zonal real-time, simple average LMP components (Dollars per MWh): Calendar years 2006 and 2007.

	2006				2007			
	Real-Time LMP	Energy Component	Congestion Component	Loss Component	Real-Time LMP	Energy Component	Congestion Component	Loss Component
AECO	\$55.53	\$47.19	\$8.34	\$0.0	\$65.02	\$56.56	\$6.42	\$2.04
AEP	\$42.24	\$47.19	(\$4.95)	\$0.0	\$46.55	\$56.56	(\$8.80)	(\$1.21)
AP	\$48.71	\$47.19	\$1.52	\$0.0	\$57.45	\$56.56	\$1.33	(\$0.44)
BGE	\$57.40	\$47.19	\$10.21	\$0.0	\$69.79	\$56.56	\$12.08	\$1.15
ComEd	\$41.52	\$47.19	(\$5.67)	\$0.0	\$45.71	\$56.56	(\$9.42)	(\$1.43)
DAY	\$41.21	\$47.19	(\$5.98)	\$0.0	\$46.47	\$56.56	(\$9.54)	(\$0.55)
Dominion	\$56.44	\$47.19	\$9.25	\$0.0	\$66.75	\$56.56	\$9.89	\$0.30
DPL	\$53.09	\$47.19	\$5.90	\$0.0	\$64.15	\$56.56	\$6.09	\$1.50
DLCO	\$39.34	\$47.19	(\$7.85)	\$0.0	\$43.93	\$56.56	(\$11.13)	(\$1.50)
JCPL	\$51.80	\$47.19	\$4.61	\$0.0	\$65.74	\$56.56	\$7.36	\$1.82
Met-Ed	\$52.66	\$47.19	\$5.47	\$0.0	\$64.57	\$56.56	\$7.32	\$0.69
PECO	\$52.40	\$47.19	\$5.21	\$0.0	\$62.60	\$56.56	\$4.82	\$1.22
PENELEC	\$46.64	\$47.19	(\$0.55)	\$0.0	\$54.80	\$56.56	(\$1.46)	(\$0.30)
Pepco	\$58.85	\$47.19	\$11.66	\$0.0	\$70.33	\$56.56	\$13.00	\$0.77
PPL	\$51.52	\$47.19	\$4.33	\$0.0	\$62.02	\$56.56	\$4.89	\$0.57
PSEG	\$54.57	\$47.19	\$7.38	\$0.0	\$65.92	\$56.56	\$7.43	\$1.93
RECO	\$53.88	\$47.19	\$6.69	\$0.0	\$64.85	\$56.56	\$6.50	\$1.79



*Table 7-1 Total annual PJM congestion [Dollars (Millions)]:
Calendar years 2003 to 2007*

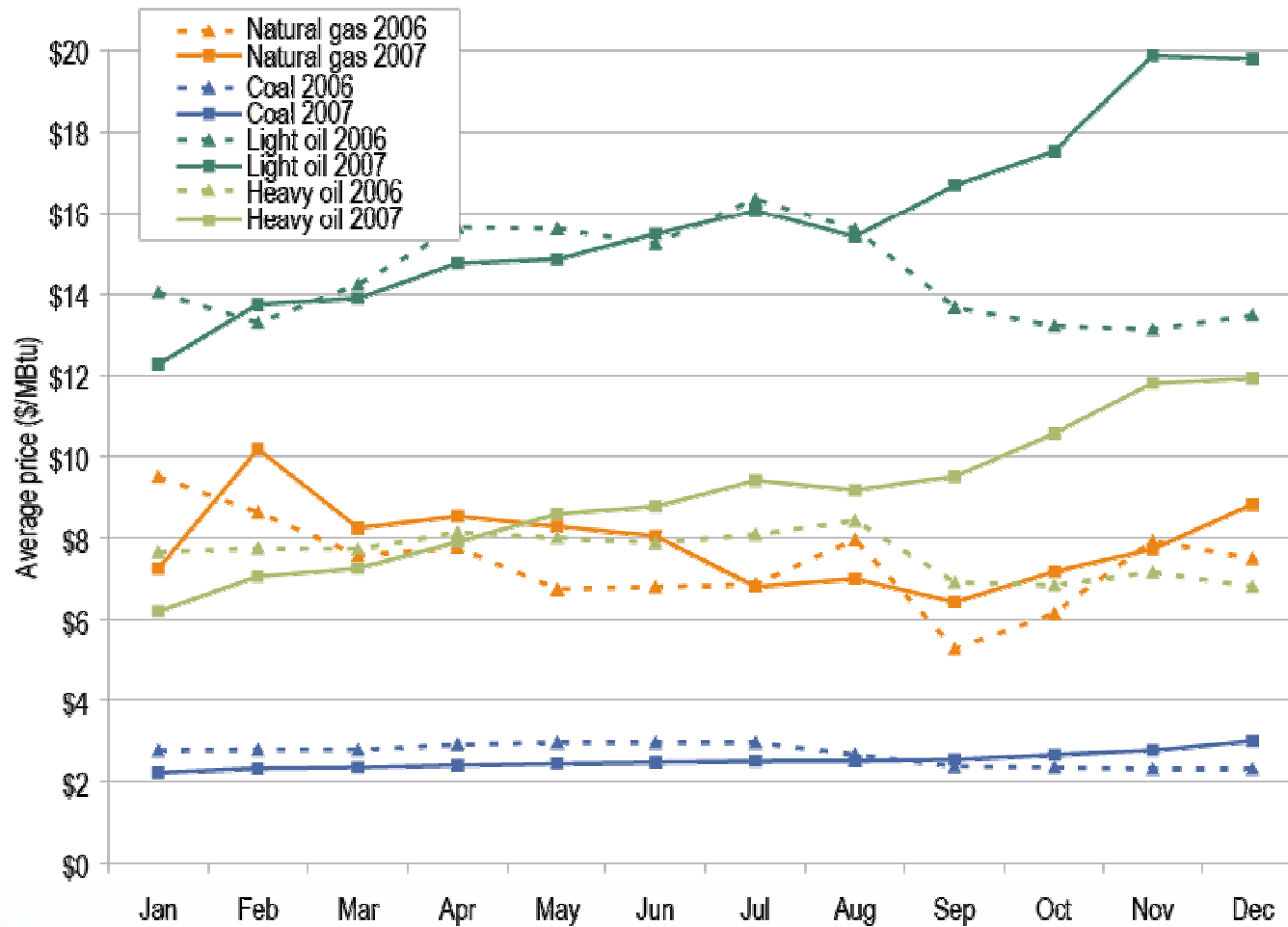
	Congestion Charges	Percent Change	Total PJM Billing	Percent of PJM Billing
2003	\$464	NA	\$6,900	7%
2004	\$750	62%	\$8,700	9%
2005	\$2,092	179%	\$22,630	9%
2006	\$1,603	(23%)	\$20,945	8%
2007	\$1,845	15%	\$30,556	6%
Total	\$6,754		\$89,731	8%



*Table 7-13 Regional constraints summary (By facility):
Calendar year 2007*

Congestion Costs (Millions)														
Day Ahead							Balancing				Event Hours			
Constraint	Type	Location	Load Payments	Generation Credits	Explicit	Total	Load Payments	Generation Credits	Explicit	Total	Grand Total	Day Ahead	Real Time	
Bedington - Black Oak	Interface	500	\$466.3	(\$227.9)	\$43.4	\$737.6	\$523.6	\$531.0	(\$16.2)	(\$23.5)	\$714.0	5,493	1,836	
5004/5005 Interface	Interface	500	\$3.4	(\$111.9)	\$5.7	\$121.0	(\$33.9)	(\$29.6)	(\$0.3)	(\$4.6)	\$116.5	1,512	386	
AP South	Interface	500	\$36.9	(\$57.1)	\$4.3	\$98.4	\$12.5	\$10.4	\$1.0	\$3.1	\$101.5	706	133	
Kammer	Transformer	500	\$31.3	(\$16.3)	\$11.6	\$59.2	(\$39.8)	(\$48.6)	(\$3.7)	\$5.1	\$64.3	2,005	947	
Central	Interface	500	(\$43.7)	(\$73.5)	\$2.5	\$32.4	(\$2.0)	(\$2.1)	\$0.0	\$0.0	\$32.4	1,334	25	
East	Interface	500	(\$25.2)	(\$41.9)	\$0.8	\$17.5	(\$0.4)	(\$0.4)	(\$0.0)	(\$0.0)	\$17.4	304	5	
West	Interface	500	\$4.1	(\$13.3)	\$2.0	\$19.4	(\$27.0)	(\$22.3)	(\$3.6)	(\$8.4)	\$11.0	359	338	
Conemaugh - Hunterstown	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$1.5)	(\$0.9)	(\$0.0)	(\$0.7)	(\$0.7)	0	9	
MAAC - Scarcity	Interface	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$5.5)	(\$4.3)	\$1.0	(\$0.1)	(\$0.1)	0	3	
Alburtis - Branchburg	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	(\$0.1)	\$0.0	\$0.1	\$0.1	0	4	
Doubs - Mount Storm	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	(\$0.1)	(\$0.0)	(\$0.1)	(\$0.1)	0	4	
Harrison - Pruntytown	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.1)	(\$0.1)	(\$0.0)	\$0.0	\$0.0	0	3	
Harrison Tap - Kammer	Line	500	\$0.0	\$0.0	\$0.0	\$0.0	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.0)	0	2	

*Figure 2-14 Spot average fuel price comparison:
Calendar years 2006 to 2007*



*Figure 2-15 Spot average emission price comparison:
Calendar years 2006 to 2007*

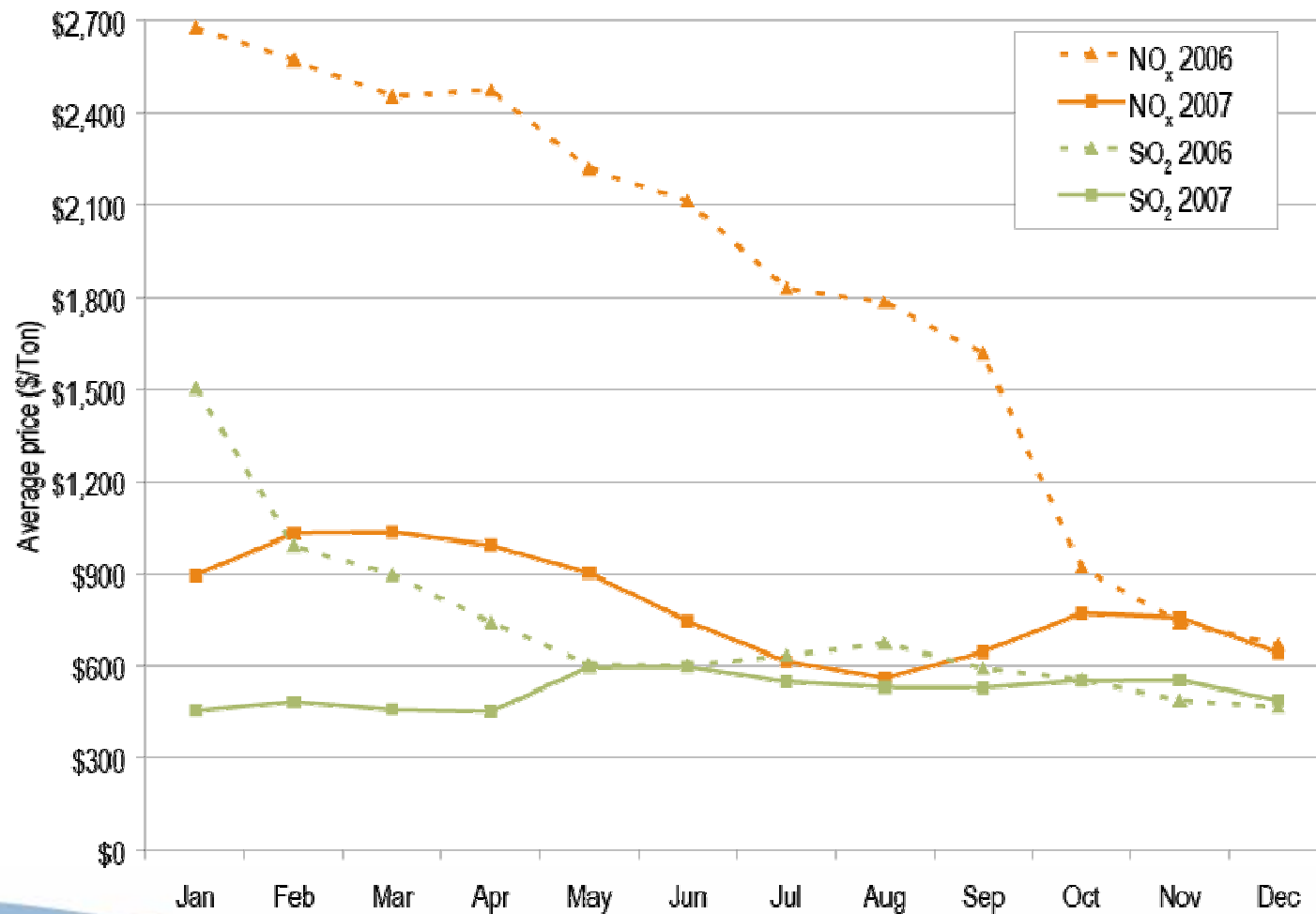




Table 2-55 PJM annual, fuel-cost-adjusted, load-weighted LMP (Dollars per MWh): Year-over-year method

	2006 Load-Weighted LMP	2007 Fuel-Cost-Adjusted, Load-Weighted LMP	Change
Average	\$53.35	\$63.00	18.1%
Median	\$44.40	\$54.55	22.9%
Standard deviation	\$37.81	\$35.36	(6.5%)

*Table 2-32 Type of fuel used (By marginal units):
Calendar years 2005 to 2007*

Fuel Type	2005	2006	2007
Coal	69%	70%	70%
Misc	1%	1%	2%
Natural gas	23%	25%	24%
Nuclear	0%	0%	0%
Petroleum	8%	5%	5%



Table 2-59 Components of PJM annual, load-weighted, average LMP: Calendar year 2007

Element	Contribution to LMP	Percent
Coal	\$21.57	35.0%
Gas	\$17.50	28.4%
Oil	\$3.97	6.4%
Wind	\$0.01	0.0%
SO ₂	\$4.33	7.0%
VOM	\$4.16	6.7%
Markup	\$5.86	9.5%
Constrained off	\$3.13	5.1%
NO _x	\$0.74	1.2%
NA	\$0.39	0.6%



Table 2-42 Markup contribution of exempt and non-exempt units: Calendar year 2007

	Exempt Markup Component	Non-Exempt Markup Component	Total
High-load days	\$0.25	\$0.32	\$0.57
Balance of year	\$1.09	\$4.20	\$5.29
Total	\$1.34	\$4.52	\$5.86



Table 2-82 Monthly average percentage of real-time self-supply load, bilateral-supply load and spot-supply load based on billing organizations: Calendar years 2006 to 2007

	2006			2007			Difference in Percentage Points		
	Bilateral Contract	Spot	Self-Supply	Bilateral Contract	Spot	Self-Supply	Bilateral Contract	Spot	Self-Supply
Jan	92.4%	6.5%	1.0%	94.9%	4.5%	0.6%	2.5%	(2.0%)	(0.4%)
Feb	92.5%	6.5%	1.0%	95.3%	4.5%	0.1%	2.8%	(2.0%)	(0.9%)
Mar	92.6%	6.4%	1.0%	95.3%	4.5%	0.2%	2.7%	(1.9%)	(0.8%)
Apr	92.7%	6.2%	1.0%	95.3%	4.5%	0.2%	2.6%	(1.7%)	(0.8%)
May	92.7%	6.2%	1.1%	95.6%	4.2%	0.2%	2.9%	(2.0%)	(0.9%)
Jun	93.2%	5.8%	1.0%	96.1%	3.7%	0.2%	2.9%	(2.1%)	(0.8%)
Jul	93.3%	5.8%	0.9%	96.7%	3.1%	0.2%	3.4%	(2.7%)	(0.7%)
Aug	93.2%	6.0%	0.8%	96.6%	3.3%	0.2%	3.4%	(2.7%)	(0.6%)
Sep	92.8%	6.1%	1.0%	96.5%	3.4%	0.1%	3.7%	(2.7%)	(0.9%)
Oct	92.2%	6.7%	1.1%	96.2%	3.6%	0.2%	4.0%	(3.1%)	(0.9%)
Nov	92.6%	6.3%	1.1%	96.0%	3.8%	0.2%	3.4%	(2.5%)	(0.9%)
Dec	92.6%	6.4%	1.0%	95.9%	3.9%	0.2%	3.3%	(2.5%)	(0.8%)
Annual	92.8%	6.2%	1.0%	95.9%	3.9%	0.2%	3.1%	(2.3%)	(0.8%)



Table 2-83 Monthly average percentage of real-time self-supply load, bilateral supply load and spot supply load based on parent companies: Calendar years 2006 to 2007

	2006			2007			Difference in Percentage Points		
	Bilateral Contract	Spot	Self-Supply	Bilateral Contract	Spot	Self-Supply	Bilateral Contract	Spot	Self-Supply
Jan	19.4%	5.4%	75.2%	22.0%	3.7%	74.4%	2.6%	(1.7%)	(0.8%)
Feb	19.4%	5.1%	75.5%	22.3%	3.8%	73.9%	2.9%	(1.3%)	(1.6%)
Mar	19.9%	5.0%	75.2%	21.6%	4.0%	74.4%	1.7%	(1.0%)	(0.8%)
Apr	20.1%	4.4%	75.5%	22.4%	4.7%	72.9%	2.3%	0.3%	(2.6%)
May	19.9%	4.6%	75.5%	22.4%	3.9%	73.7%	2.5%	(0.7%)	(1.8%)
Jun	20.6%	4.7%	74.8%	22.8%	3.1%	74.0%	2.2%	(1.6%)	(0.8%)
Jul	20.5%	6.3%	73.2%	23.9%	4.3%	71.8%	3.4%	(2.0%)	(1.4%)
Aug	20.6%	5.5%	73.9%	23.8%	3.6%	72.6%	3.2%	(1.9%)	(1.3%)
Sep	20.5%	5.1%	74.4%	23.1%	3.8%	73.2%	2.6%	(1.3%)	(1.2%)
Oct	20.9%	5.5%	73.6%	23.7%	5.5%	70.8%	2.8%	0.0%	(2.8%)
Nov	20.2%	5.4%	74.4%	22.8%	4.3%	73.0%	2.6%	(1.1%)	(1.4%)
Dec	19.6%	5.2%	75.2%	22.3%	2.8%	74.9%	2.7%	(2.4%)	(0.3%)
Annual	20.1%	5.2%	74.6%	22.8%	3.9%	73.3%	2.7%	(1.3%)	(1.3%)



Table 3-24 CT 20-year levelized fixed cost vs. real-time economic dispatch, zonal net revenue (Dollars per installed MW-year): Calendar years 1999 to 2007

	2007			9-Year Average (1999-2007)		
	Net Revenue	20-Year Levelized Cost	Percent Recovered	Net Revenue	20-Year Levelized Cost	Percent Recovered
AECO	\$81,801	\$90,656	90%	\$41,774	\$75,158	56%
AEP	\$16,230	\$90,656	18%	\$9,919	\$75,158	13%
AP	\$27,996	\$90,656	31%	\$14,283	\$75,158	19%
BGE	\$94,710	\$90,656	104%	\$41,434	\$75,158	55%
ComEd	\$19,542	\$90,656	22%	\$12,742	\$75,158	17%
DAY	\$16,047	\$90,656	18%	\$9,810	\$75,158	13%
Dominion	\$53,923	\$90,656	59%	\$42,353	\$75,158	56%
DPL	\$73,967	\$90,656	82%	\$40,953	\$75,158	54%
DLCO	\$20,076	\$90,656	22%	\$11,465	\$75,158	15%
JCPL	\$77,652	\$90,656	86%	\$39,683	\$75,158	53%
Met-Ed	\$46,663	\$90,656	51%	\$34,263	\$75,158	46%
PECO	\$68,376	\$90,656	75%	\$37,729	\$75,158	50%
PENELEC	\$21,228	\$90,656	23%	\$26,506	\$75,158	35%
Pepco	\$96,913	\$90,656	107%	\$42,534	\$75,158	57%
PPL	\$35,743	\$90,656	39%	\$31,062	\$75,158	41%
PSEG	\$72,221	\$90,656	80%	\$39,064	\$75,158	52%
RECO	\$72,112	\$90,656	80%	\$26,065	\$75,158	35%
PJM	\$48,530	\$90,656	54%	\$32,248	\$75,158	43%