



The Competitiveness of PJM Markets

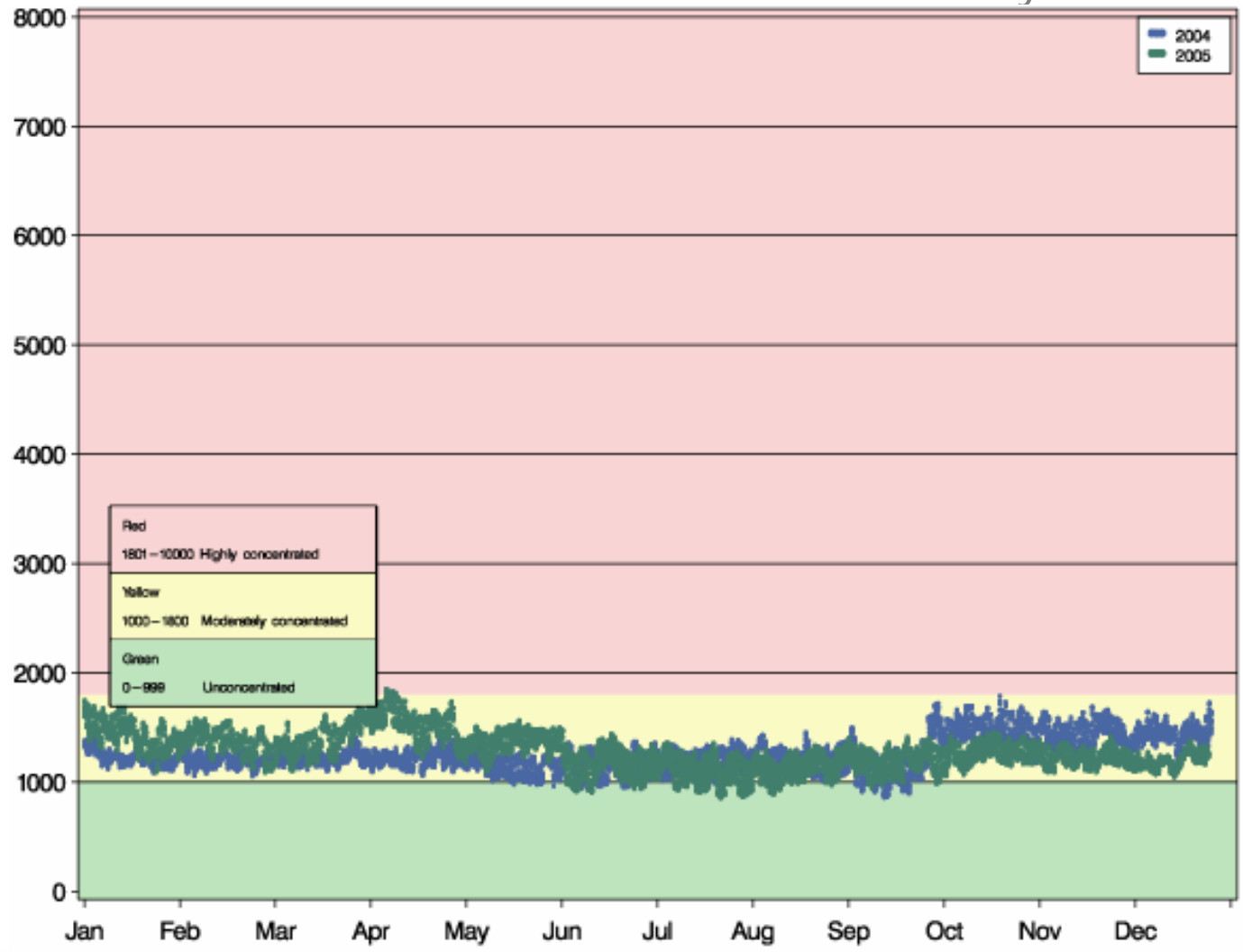
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- Ability to increase market price above competitive level
 - Competitive offer price equals short run marginal cost
 - Short run marginal cost may include risk
 - Short run marginal cost may include opportunity cost

- Structure
 - Market
- Behavior/Conduct
 - Participant
- Performance
 - Market

- **Structure – Aggregate Market**
 - Market shares
 - Concentration
 - Pivotal suppliers
- **Structure – Local Markets**
 - Local market power mitigation

Figure 2-3 - PJM hourly Energy Market HHI:
Calendar years 2004 and 2005



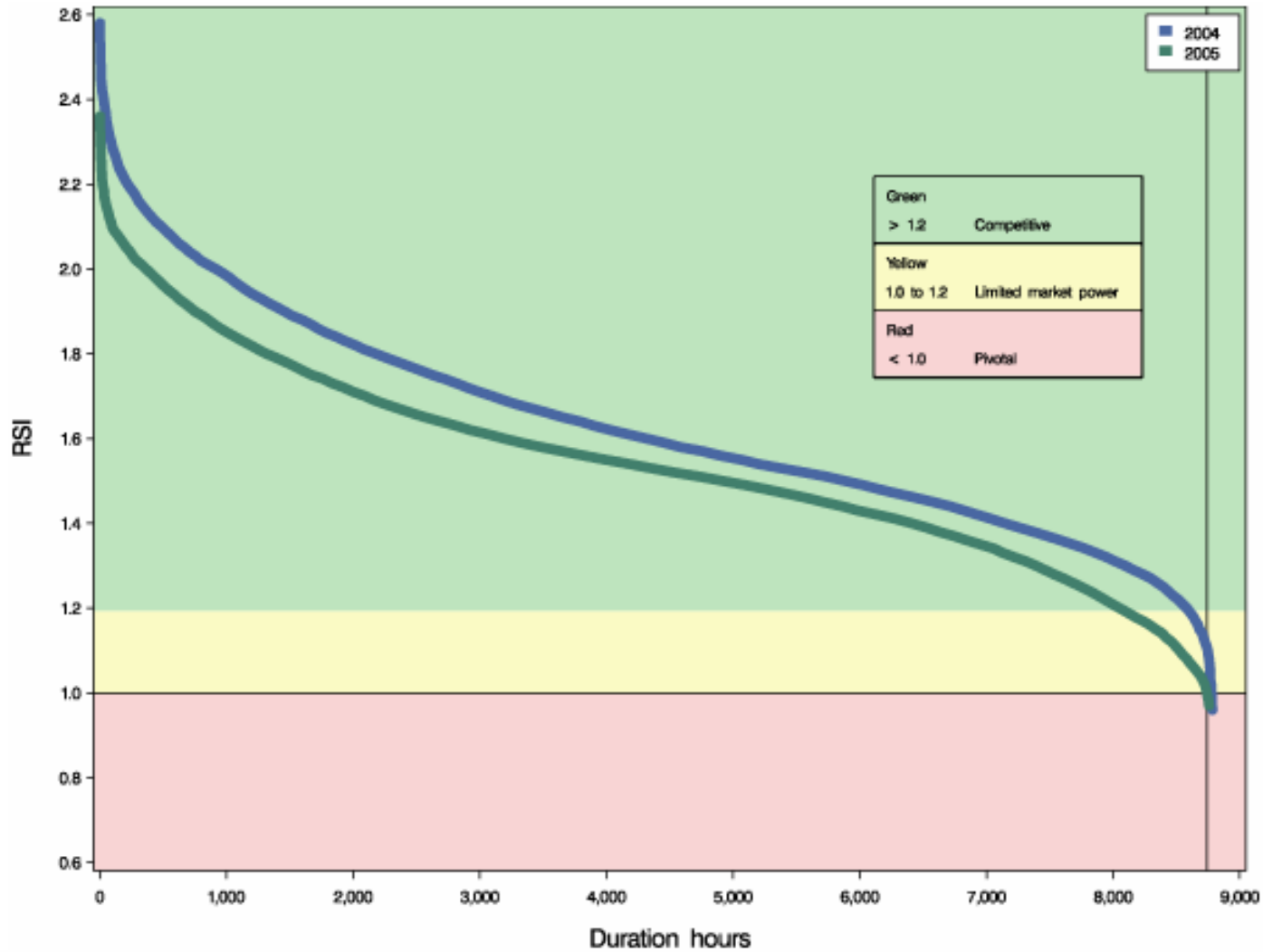


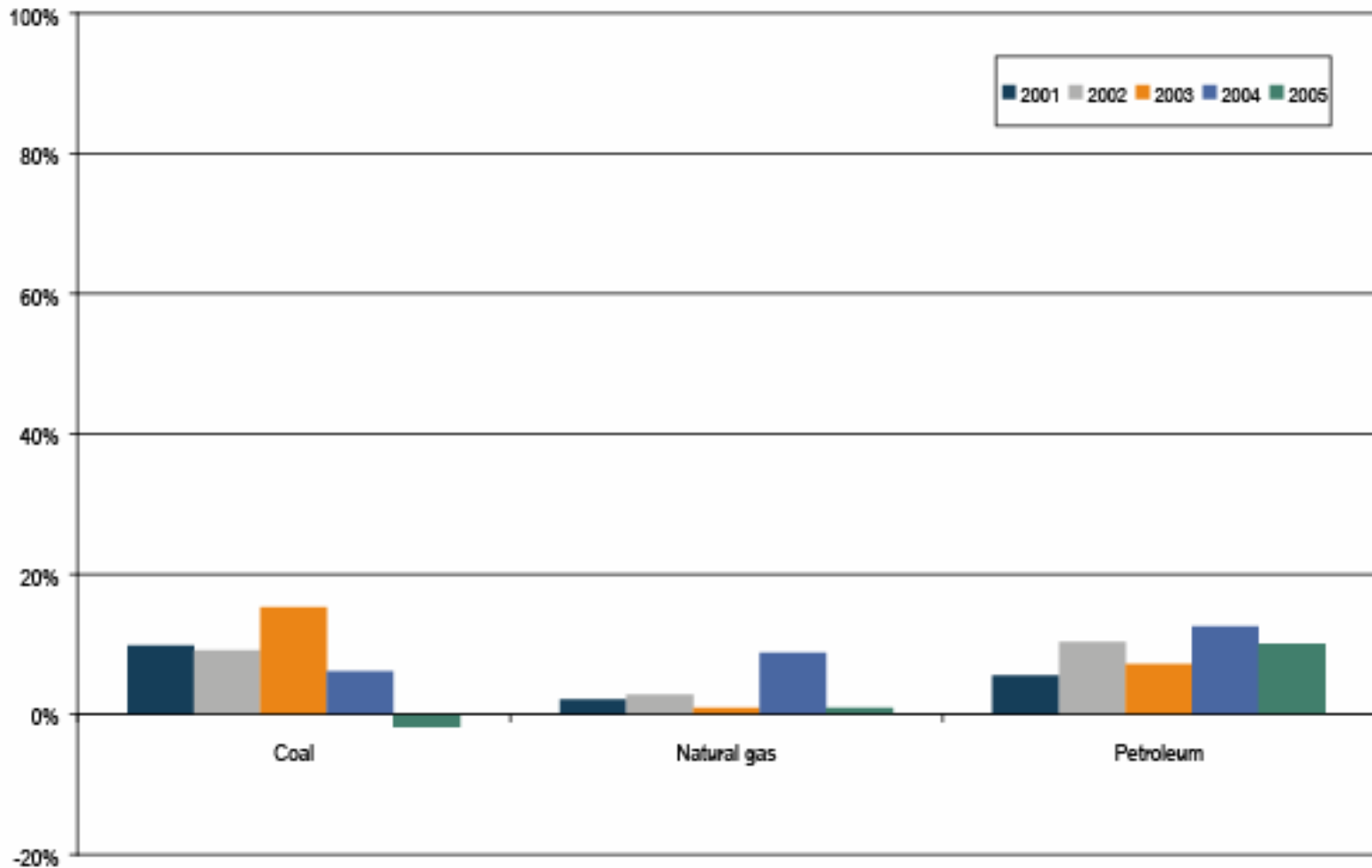


Table 2-20 - Annual offer-capping statistics:
Calendar years 2001 to 2005

	Real Time		Day Ahead	
	Unit Hours Capped	MW Capped	Unit Hours Capped	MW Capped
2001	2.8%	1.0%	2.8%	0.7%
2002	1.6%	0.3%	0.7%	0.1%
2003	1.1%	0.3%	0.4%	0.2%
2004	1.3%	0.4%	0.6%	0.2%
2005	1.8%	0.4%	0.2%	0.1%

- Behavior/Conduct
 - Offer behavior
 - Mark up

Figure 2-10 - Average markup index of marginal units (By type of fuel):
Calendar years 2001 to 2005



- Performance
 - Market mark up
 - Net revenue
 - Prices

Figure 2-8 - Load-weighted, average monthly markup indices:
Calendar year 2005

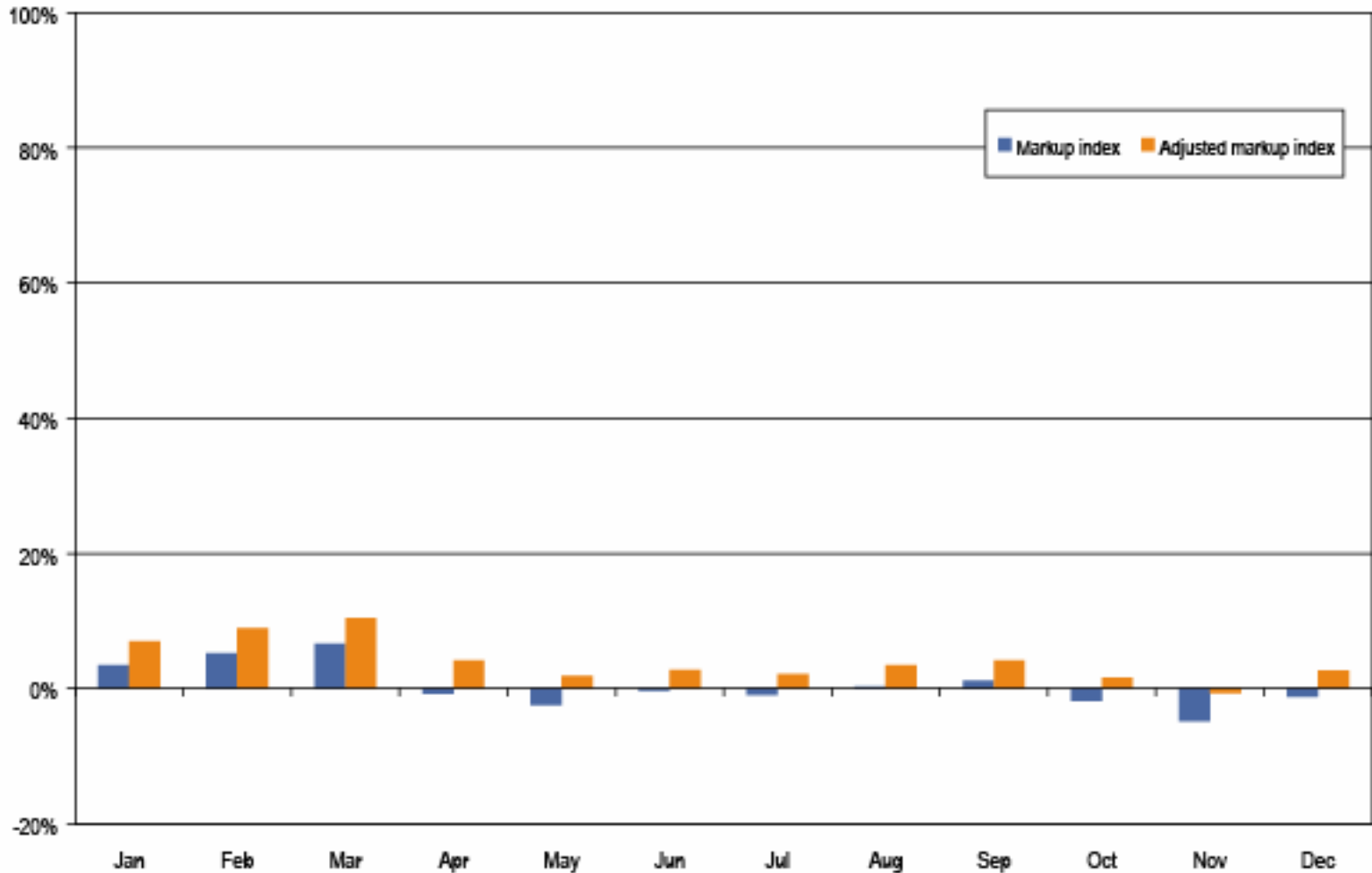




Table 3-12 - CT 20-year levelized fixed cost vs. perfect dispatch net revenue (Dollars per installed MW-year):
Calendar years 1999 to 2005

	20-Year Levelized Fixed Cost	Perfect Dispatch Net Revenue	Perfect Dispatch Percent	Economic Dispatch Net Revenue	Economic Dispatch Percent
1999	\$72,207	\$80,990	112%	\$74,537	103%
2000	\$72,207	\$38,924	54%	\$30,946	43%
2001	\$72,207	\$72,477	100%	\$63,462	88%
2002	\$72,207	\$36,996	51%	\$28,260	39%
2003	\$72,207	\$19,956	28%	\$10,565	15%
2004	\$72,207	\$15,687	22%	\$8,543	12%
2005	\$72,207	\$20,037	28%	\$10,437	14%
Average	\$72,207	\$40,724	56%	\$32,393	45%



Table 3-13 - CC 20-year levelized fixed cost vs. perfect dispatch net revenue (Dollars per installed MW-year):
Calendar years 1999 to 2005

Calendar years 1999 to 2005

	20-Year Levelized Fixed Cost	Perfect Dispatch Net Revenue	Perfect Dispatch Percent	Economic Dispatch Net Revenue	Economic Dispatch Percent
1999	\$93,549	\$109,754	117%	\$100,700	108%
2000	\$93,549	\$65,445	70%	\$47,592	51%
2001	\$93,549	\$101,413	108%	\$86,670	93%
2002	\$93,549	\$65,286	70%	\$52,272	56%
2003	\$93,549	\$58,782	63%	\$35,591	38%
2004	\$93,549	\$57,996	62%	\$35,785	38%
2005	\$93,549	\$73,517	79%	\$40,817	44%
Average	\$93,549	\$76,028	81%	\$57,061	61%



Table 3-14 - CP 20-year levelized fixed cost vs. perfect dispatch net revenue (Dollars per installed MW-year):
Calendar years 1999 to 2005

	20-Year Levelized Fixed Cost	Perfect Dispatch Net Revenue	Perfect Dispatch Percent	Economic Dispatch Net Revenue	Economic Dispatch Percent
1999	\$208,247	\$126,097	61%	\$118,021	57%
2000	\$208,247	\$138,141	66%	\$134,563	65%
2001	\$208,247	\$140,776	68%	\$129,271	62%
2002	\$208,247	\$116,648	56%	\$112,131	54%
2003	\$208,247	\$176,138	85%	\$169,510	81%
2004	\$208,247	\$144,908	70%	\$133,125	64%
2005	\$208,247	\$237,870	114%	\$228,430	110%
Average	\$208,247	\$154,368	74%	\$146,436	70%



Table 2-32 - PJM average hourly LMP (Dollars per MWh):
Calendar years 1998 through 2005

	Locational Marginal Prices (LMPs)			Year-to-Year Changes		
	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%



Table 2-34 - PJM load-weighted, average LMP (Dollars per MWh): Calendar years 1998 through 2005

	Load-Weighted, Average LMP			Year-to-Year Changes		
	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%

Figure 2-13 - Monthly load-weighted, average LMP:
Calendar years 1999 through 2005

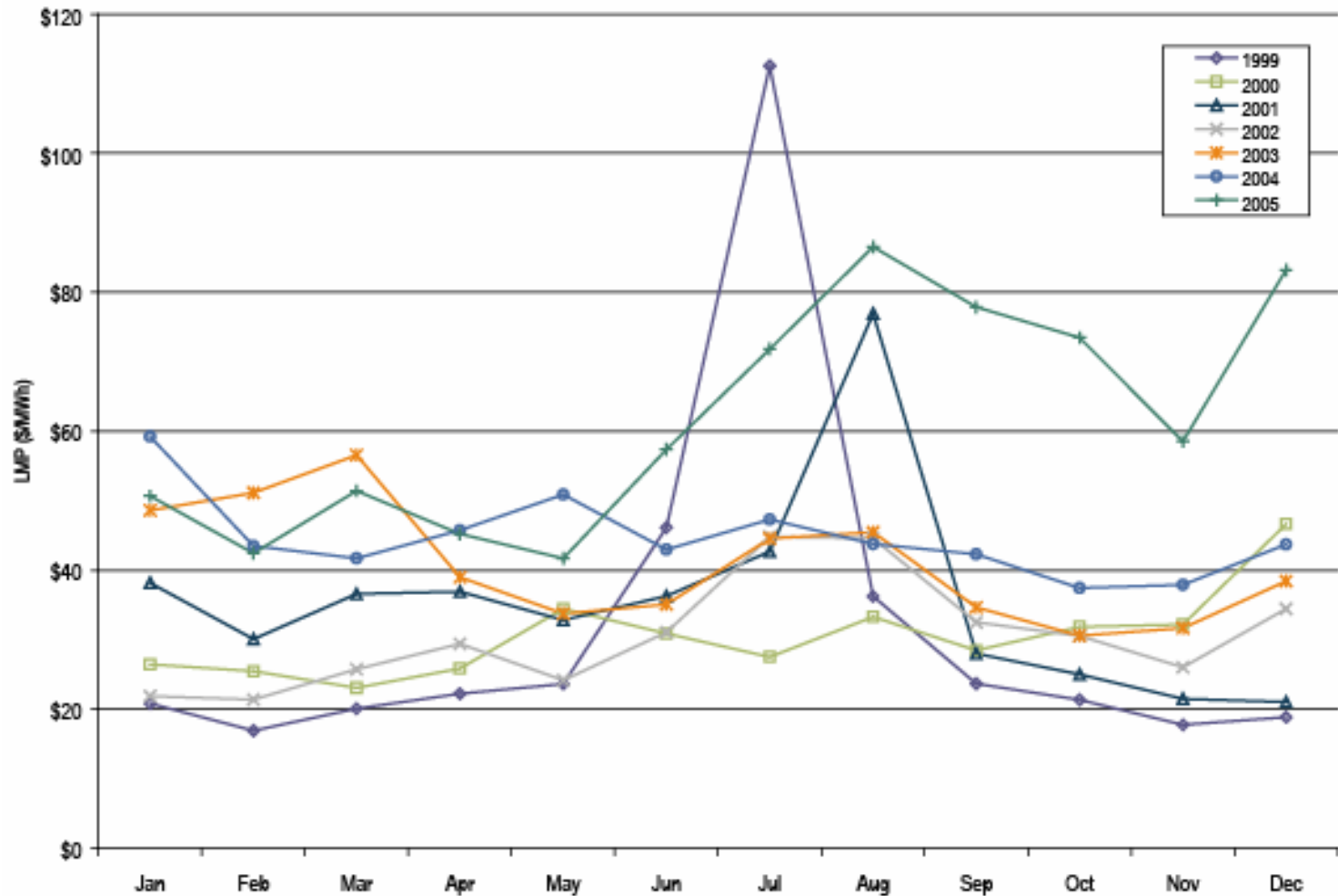




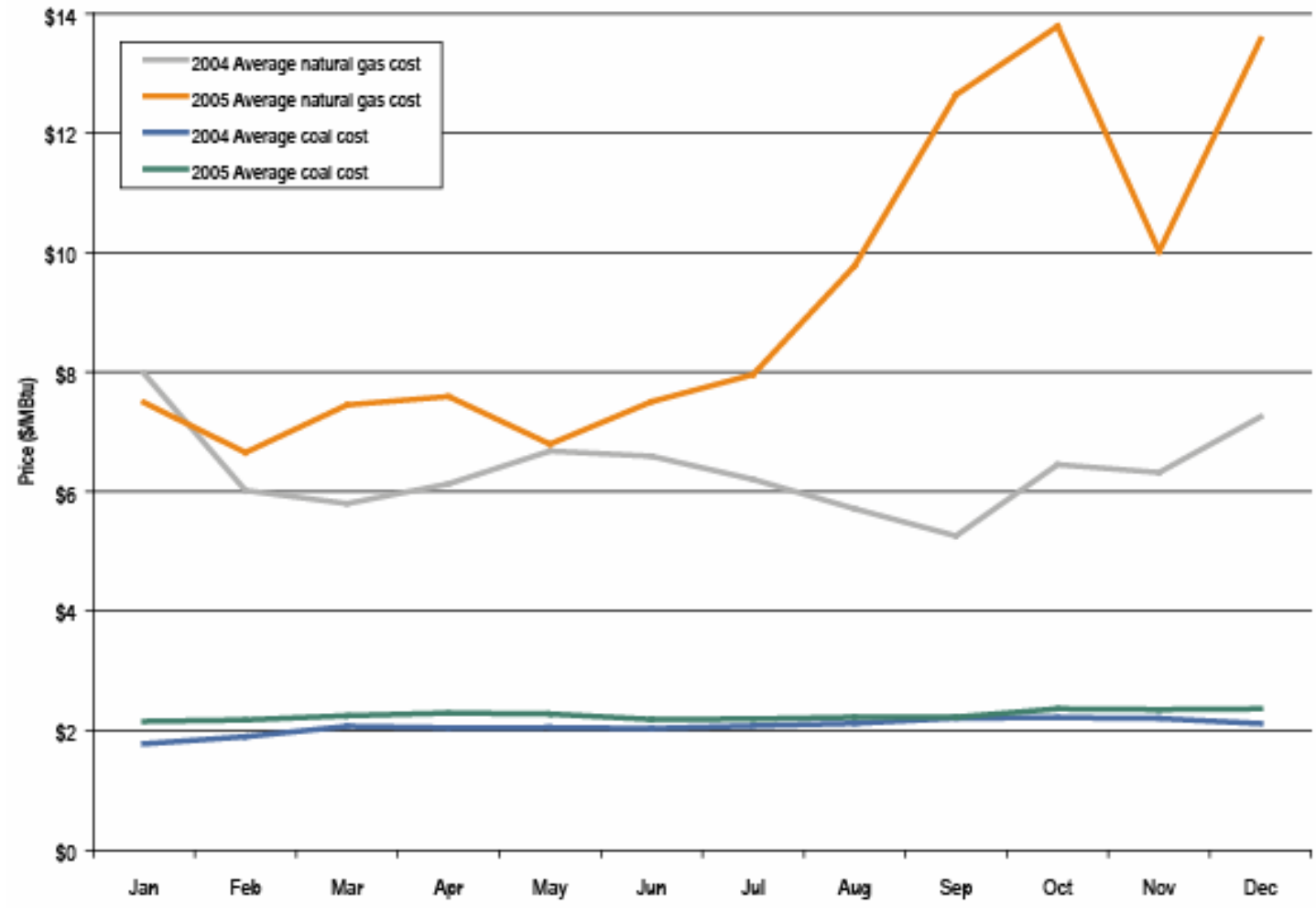
Table 2-35 - PJM fuel-cost-adjusted, load-weighted LMP
(Dollars per MWh): Year-over-year method

	2004	2005	Change
Average	\$44.34	\$45.02	1.5%
Median	\$40.16	\$38.75	(3.5%)
Standard Deviation	\$21.25	\$25.68	20.8%

Table 2-18 - Type of fuel used by marginal units:
Calendar years 2001 to 2005

Fuel Type	2001	2002	2003	2004	2005
Coal	49%	55%	52%	56%	62%
Misc	0%	0%	0%	0%	0%
Natural gas	18%	23%	29%	31%	26%
Nuclear	1%	0%	1%	0%	0%
Petroleum	32%	21%	18%	12%	11%

Figure 2-14 - Spot coal and natural gas price comparison:
Calendar years 2004 through 2005



Difference in cost: Gas-fired CT and gas-fired CT: Calendar years 2004 through 2005

