

# State of the PJM Market: January through November 2009

Members Committee  
January 28, 2010

Joseph Bowring

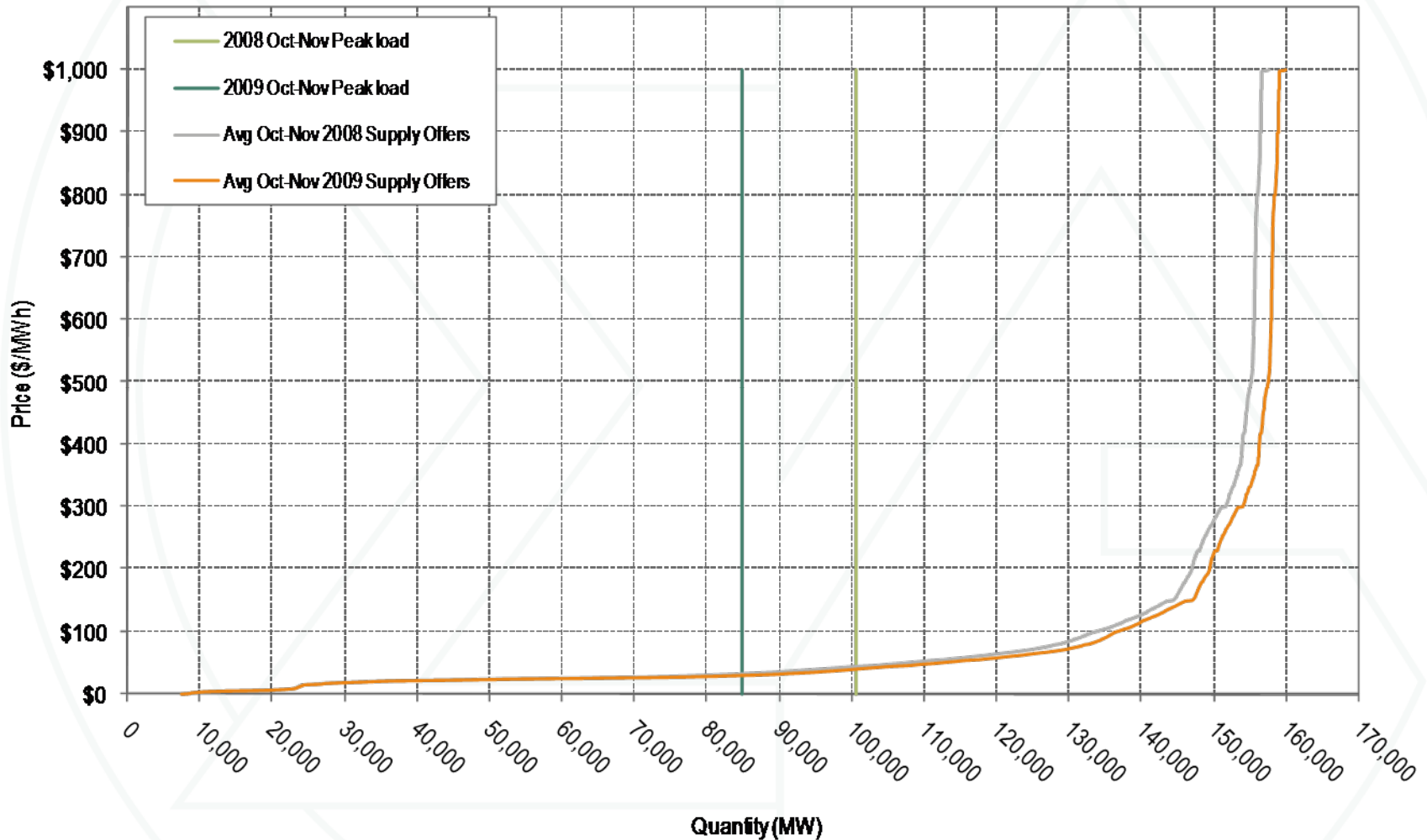


Monitoring Analytics

## Total price per MWh: January through November 2009

Category	\$/MWh	Percent
Load Weighted Energy	\$38.60	69.8%
Capacity	\$10.75	19.4%
Transmission Service	\$4.06	7.3%
Operating Reserves (Uplift)	\$0.48	0.9%
Reactive	\$0.37	0.7%
Regulation	\$0.34	0.6%
PJM Administrative	\$0.32	0.6%
Transmission Cost Recovery	\$0.23	0.4%
Transmission Owner (Schedule 1A)	\$0.09	0.2%
Synchronized Reserves	\$0.05	0.1%
Black Start Services	\$0.02	0.0%
RTO Startup and Expansion	\$0.01	0.0%
NERC/RFC	\$0.01	0.0%
Load Response	\$0.00	0.0%
Total	\$55.33	100.0%

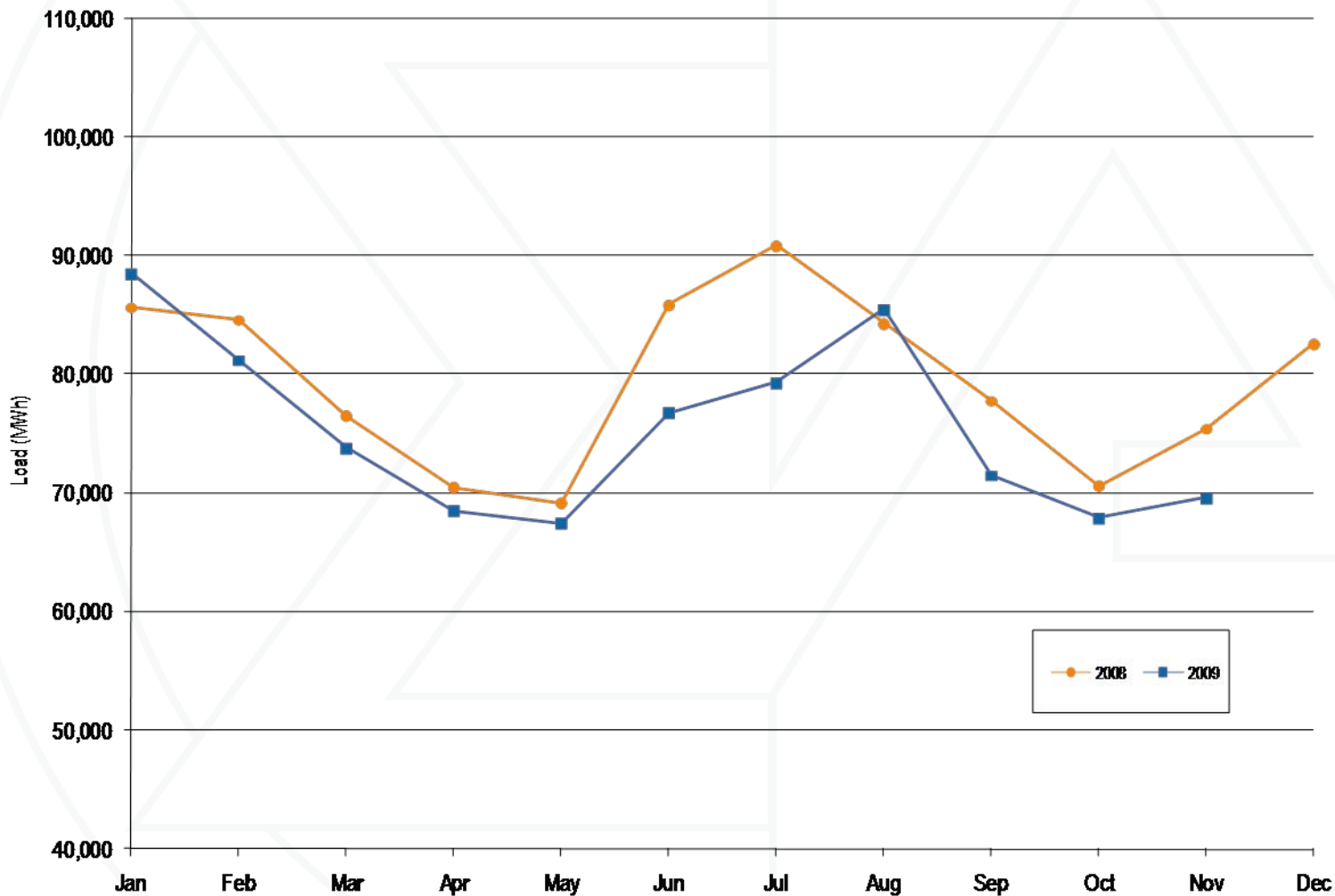
## Average PJM aggregate supply curves: October and November 2008 and 2009



## PJM real-time average load: Calendar years 2000 through November 2009

	PJM Real-Time Load (MWh)			Year-to-Year Change		
	Average	Median	Standard Deviation	Average	Median	Standard Deviation
2000	30,113	30,170	5,529	NA	NA	NA
2001	30,297	30,219	5,873	<b>0.6%</b>	<b>0.2%</b>	<b>6.2%</b>
2002	35,731	34,746	8,013	17.9%	15.0%	36.5%
2003	37,398	37,031	6,832	<b>4.7%</b>	<b>6.6%</b>	<b>(14.7%)</b>
2004	49,963	48,103	13,004	33.6%	29.9%	90.3%
2005	78,150	76,247	16,296	<b>56.4%</b>	<b>58.5%</b>	<b>25.3%</b>
2006	79,471	78,473	14,534	1.7%	2.9%	(10.8%)
2007	81,681	80,914	14,618	<b>2.8%</b>	<b>3.1%</b>	<b>0.6%</b>
2008	79,515	78,481	13,758	(2.7%)	(3.0%)	(5.9%)
<b>2009</b>	<b>75,451</b>	<b>74,911</b>	<b>13,426</b>	<b>(5.1%)</b>	<b>(4.5%)</b>	<b>(2.4%)</b>

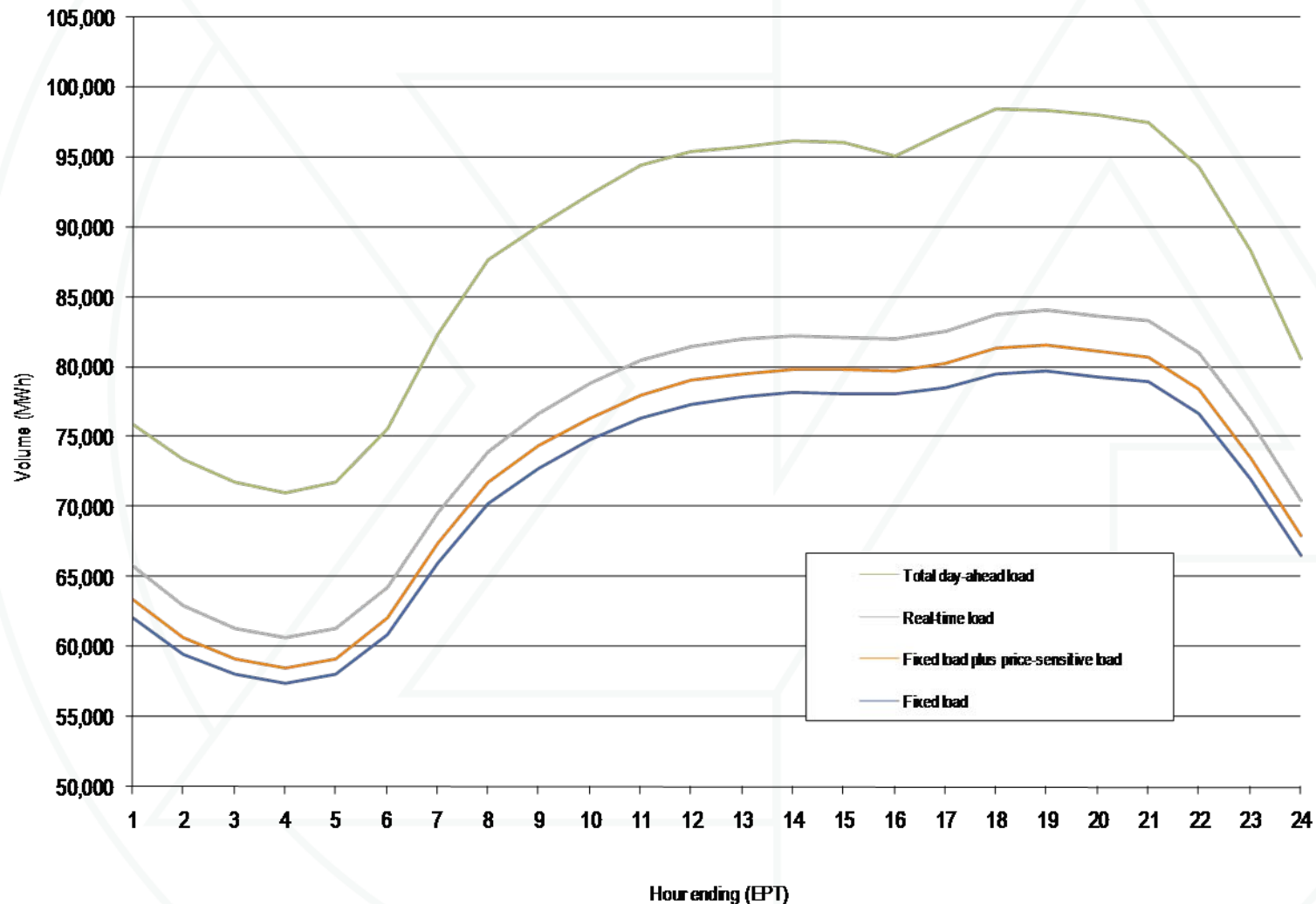
## PJM real-time average load: Calendar years 2008 through November 2009



## Cleared day-ahead and real-time load (MWh): January through November 2009

	Day Ahead				Real Time	Average Difference		
	Cleared Fixed Demand	Cleared Price Sensitive	Cleared DEC Bid	Total Load	Total Load	Total	Load	Total Load Minus DEC Bid
Average	71,556	1,512	15,148	88,216	75,451	12,765		(2,383)
Median	71,117	1,471	15,313	88,295	74,911	13,384		(1,929)
Standard deviation	12,692	466	2,684	15,171	13,426	1,745		(939)

## Day-ahead and real-time loads (Average hourly volumes): January through November 2009

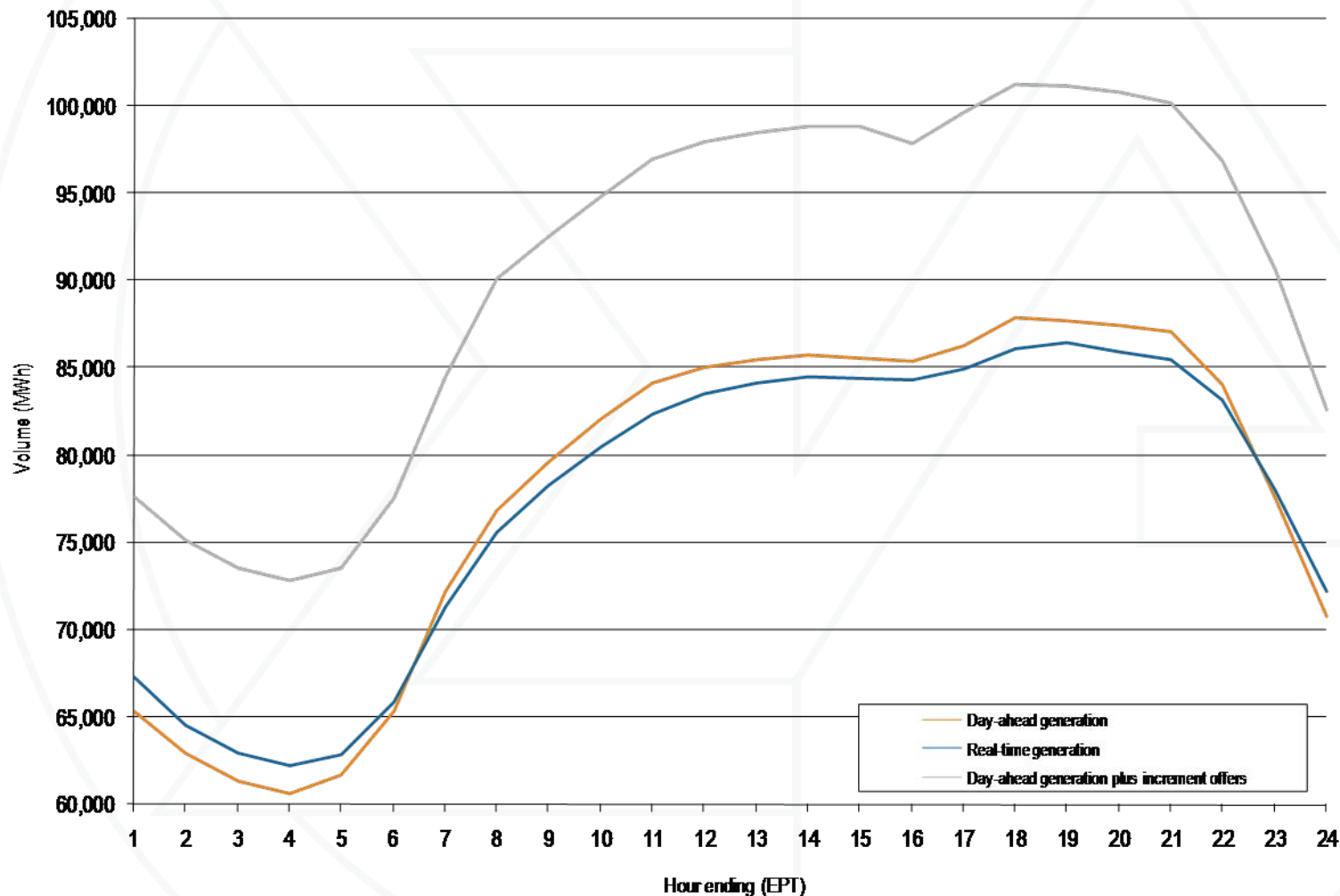


## Day-ahead and real-time generation (MWh): January through November 2009

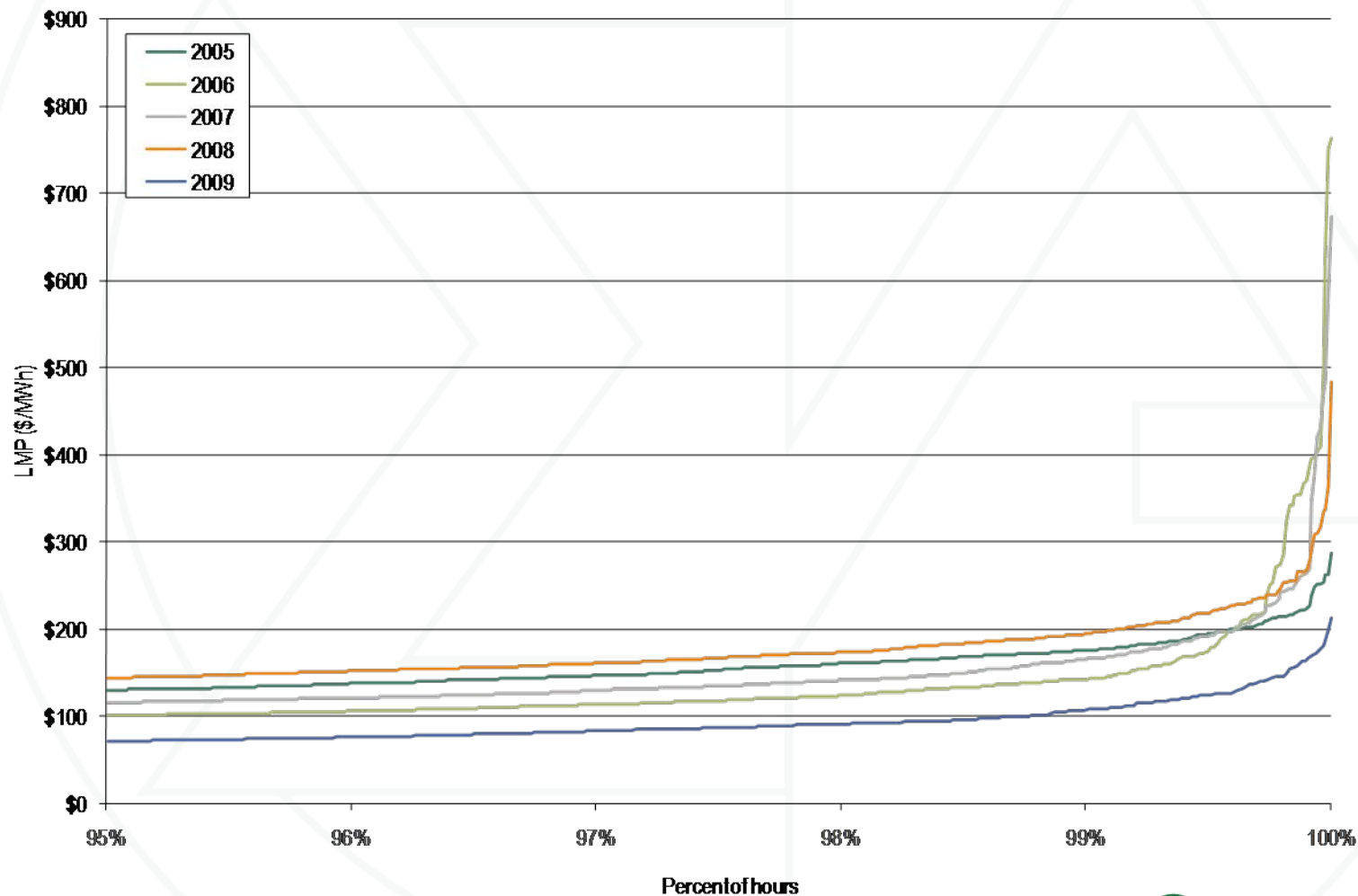
	Day Ahead			Real Time Generation	Average Difference	
	Cleared Generation	Cleared INC Offer	Cleared Generation Plus INC Offer		Cleared Generation	Generation Plus INC Offer
Average	77,854	12,751	90,605	77,369	485	13,236
Median	78,006	12,608	90,714	76,905	<b>1,101</b>	<b>13,809</b>
Standard deviation	15,039	1,672	15,676	13,800	1,239	1,876



## Day-ahead and real-time generation (Average hourly volumes): January through November 2009



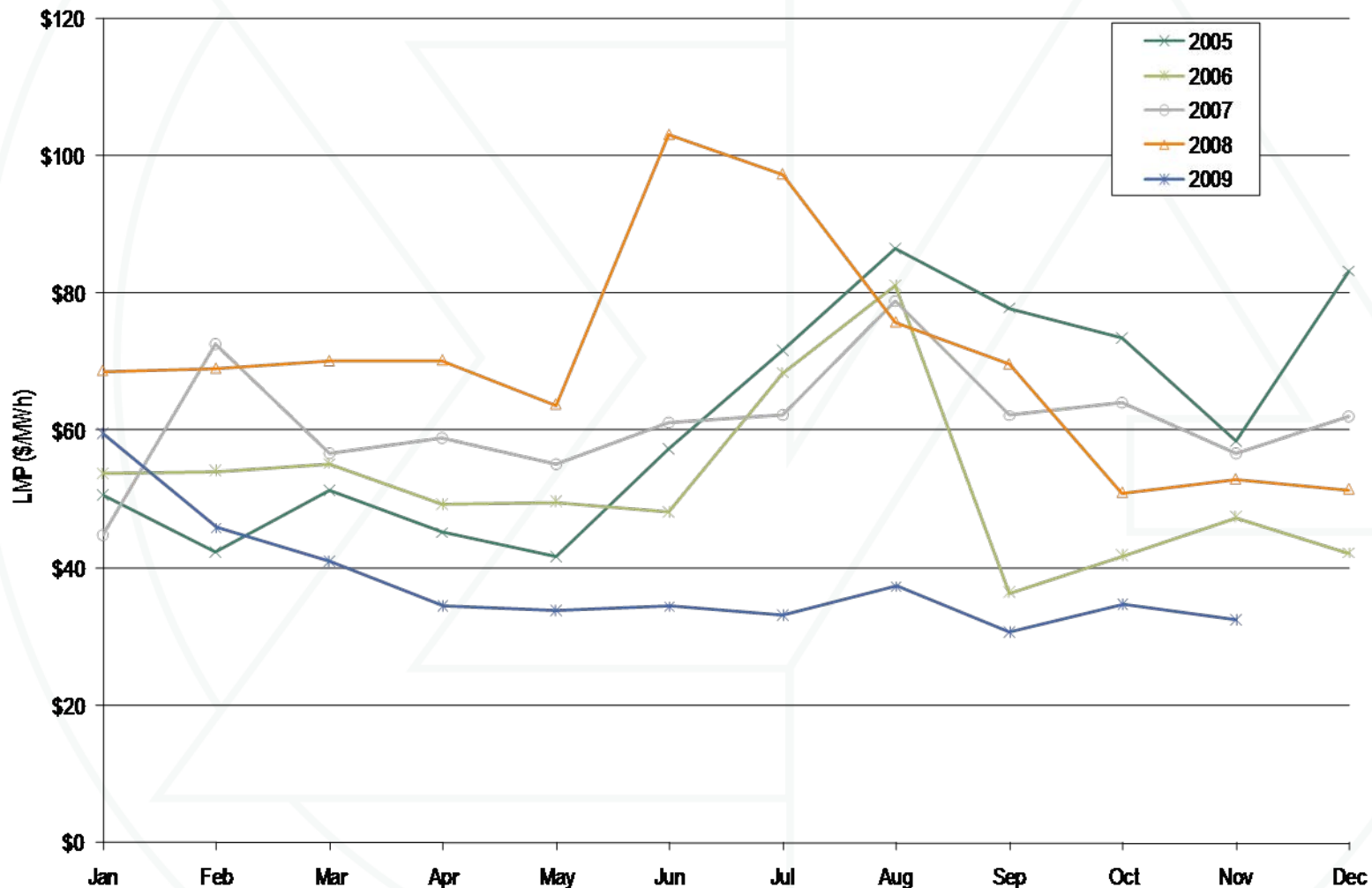
## Price duration curves for the PJM Real-Time Energy Market during hours above the 95<sup>th</sup> percentile: Calendar years 2005 through November 2009



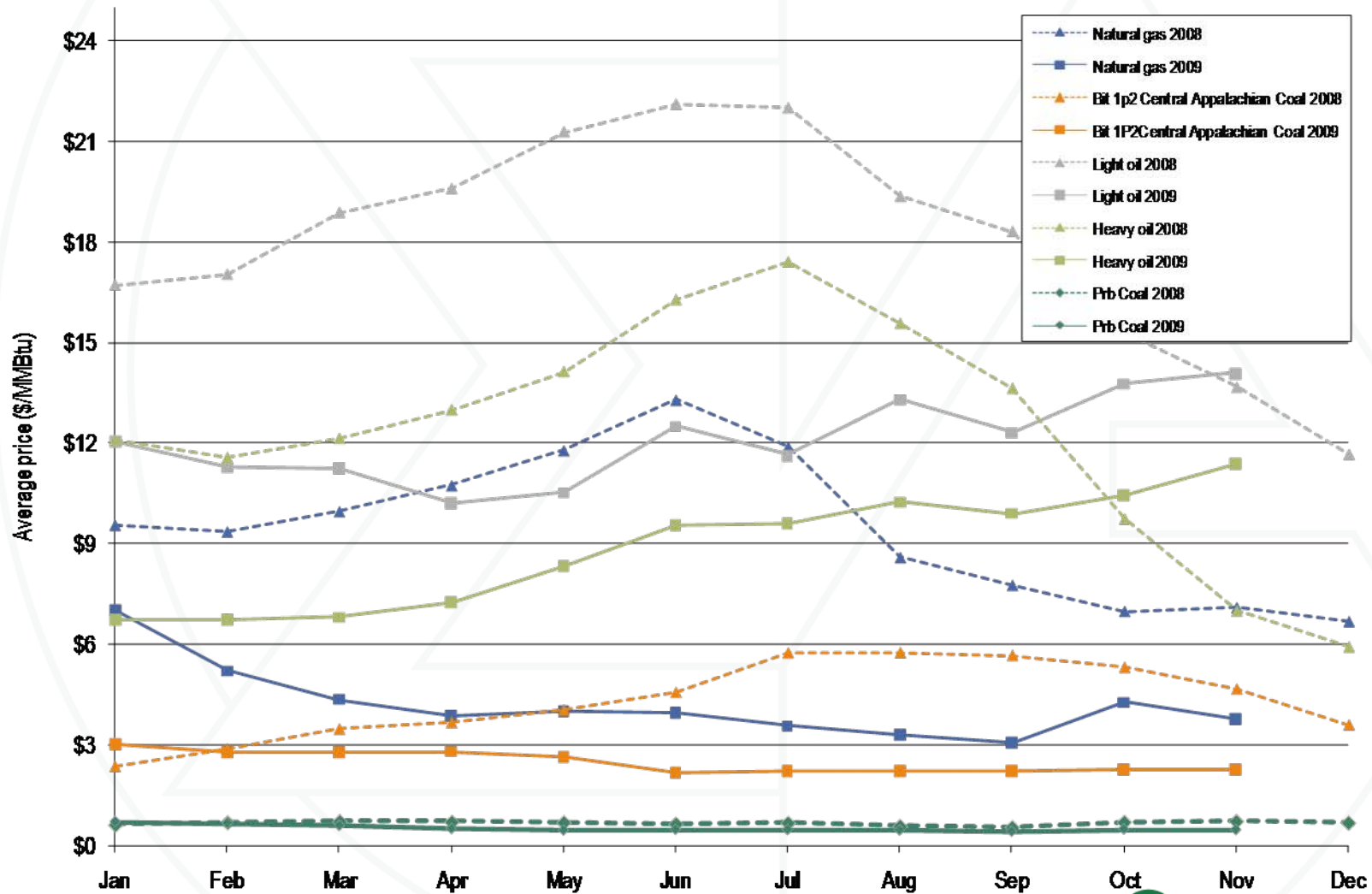
## PJM real-time, annual, load-weighted, average LMP (Dollars per MWh): Calendar years 2000 through November 2009

	Real-Time, Load-Weighted, Average LMP			Year-to-Year Change		
	Average	Median	Standard Deviation	Average	Median	Standard Deviation
2000	\$30.72	\$20.51	\$28.38	NA	NA	NA
2001	\$36.65	\$25.08	\$57.26	<b>19.3%</b>	<b>22.3%</b>	<b>101.8%</b>
2002	\$31.60	\$23.40	\$26.75	(13.8%)	(6.7%)	(53.3%)
2003	\$41.23	\$34.96	\$25.40	<b>30.5%</b>	<b>49.4%</b>	<b>(5.0%)</b>
2004	\$44.34	\$40.16	\$21.25	7.5%	14.9%	(16.3%)
2005	\$63.46	\$52.93	\$38.10	<b>43.1%</b>	<b>31.8%</b>	<b>79.3%</b>
2006	\$53.35	\$44.40	\$37.81	(15.9%)	(16.1%)	(0.7%)
2007	\$61.66	\$54.66	\$36.94	<b>15.6%</b>	<b>23.1%</b>	<b>(2.3%)</b>
2008	\$71.13	\$59.54	\$40.97	15.4%	8.9%	10.9%
<b>2009</b>	<b>\$38.60</b>	<b>\$33.91</b>	<b>\$18.13</b>	<b>(45.7%)</b>	<b>(43.1%)</b>	<b>(55.7%)</b>

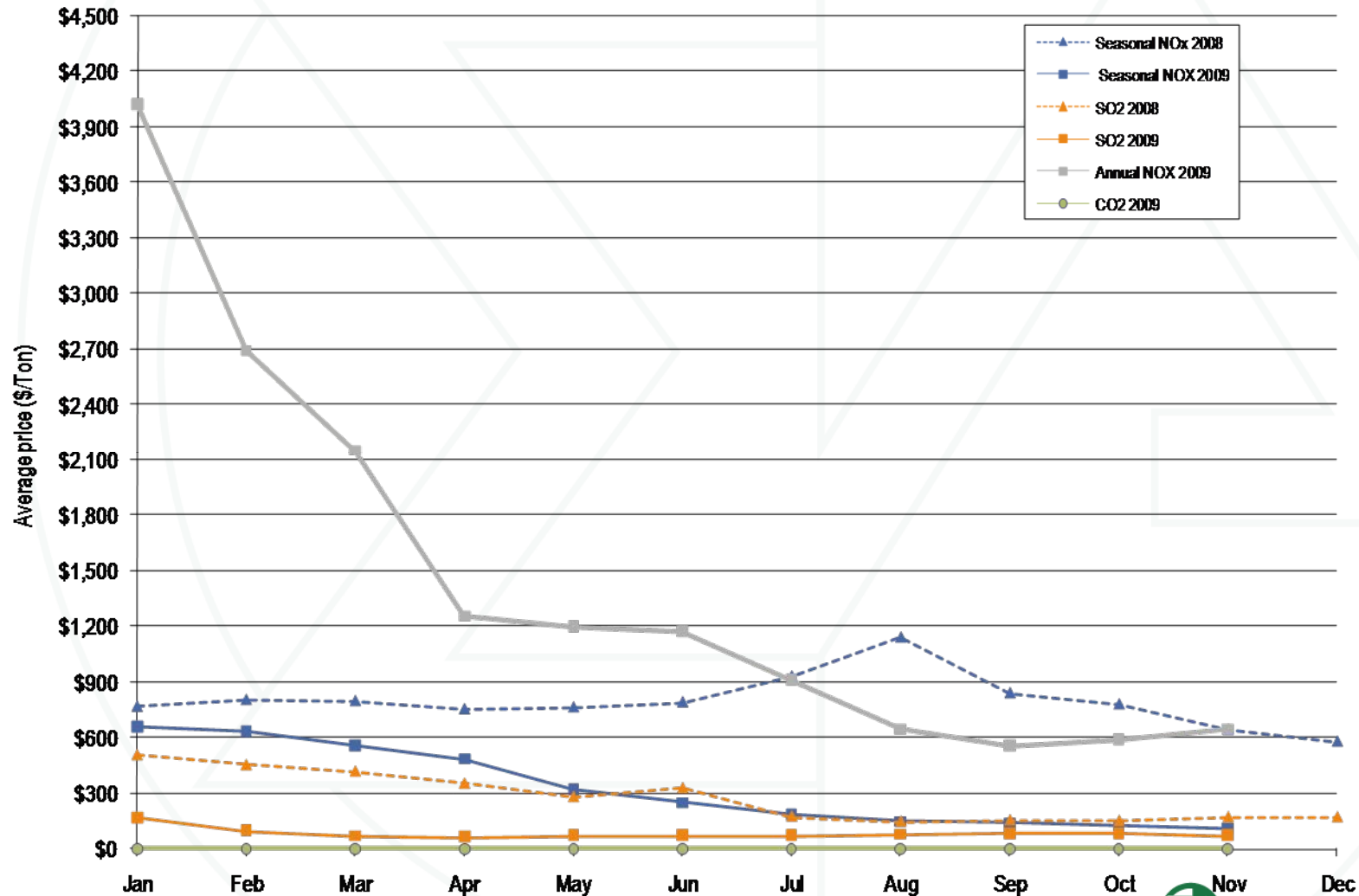
## PJM real-time, monthly, load-weighted, average LMP: Calendar years 2005 through November 2009



# Spot average fuel price comparison: Calendar years 2008 through November 2009



## Spot average emission price comparison: Calendar years 2008 through November 2009



## Day-Ahead and Real-Time, simple average LMP (Dollars per MWh): January through November 2009

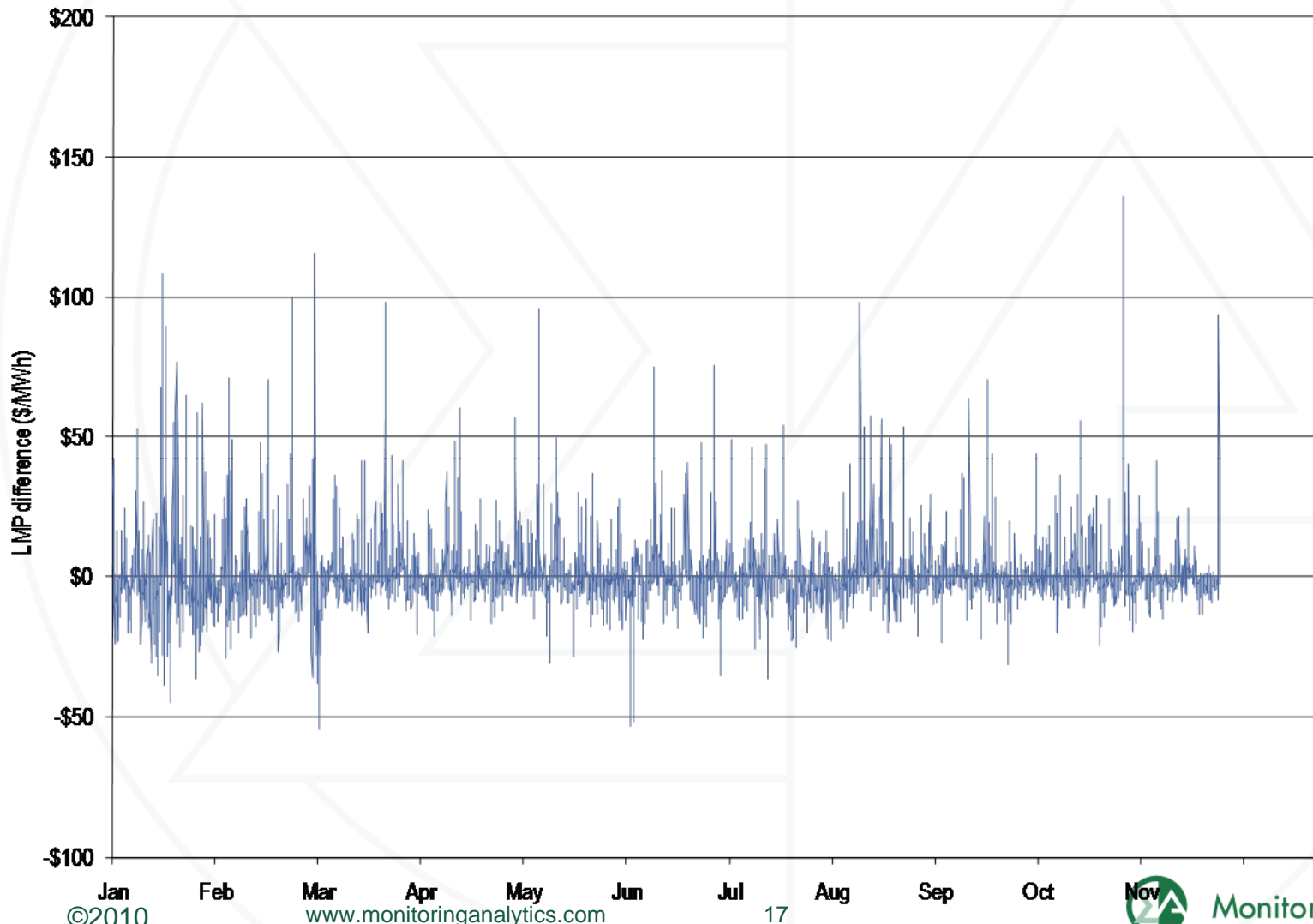
	Day Ahead	Real Time	Difference	Difference as Percent Real Time
Average	\$36.55	\$36.61	\$0.06	0.2%
Median	\$34.70	\$32.41	(\$2.28)	(7.0%)
Standard deviation	\$13.45	\$16.98	\$3.53	20.8%

## Day-Ahead and Real-Time, simple average LMP (Dollars per MWh): Calendar years 2000 through November 2009

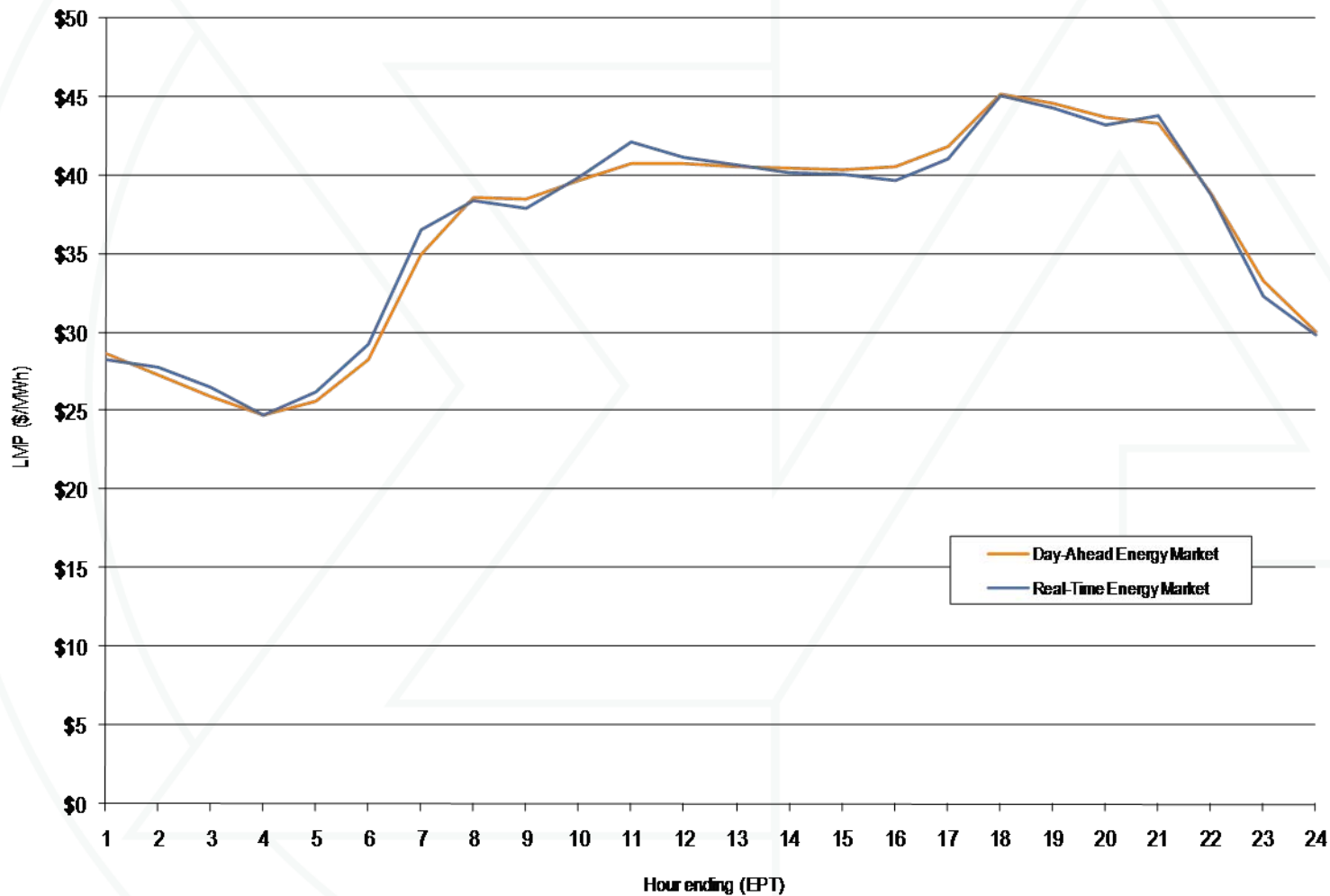
Year	Day Ahead	Real Time	Difference	Difference as Percent Real Time
2000	\$31.97	\$30.36	(\$1.61)	(5.3%)
2001	<b>\$32.75</b>	<b>\$32.38</b>	<b>(\$0.37)</b>	<b>(1.1%)</b>
2002	\$28.46	\$28.30	(\$0.16)	(0.6%)
2003	<b>\$38.73</b>	<b>\$38.28</b>	<b>(\$0.45)</b>	<b>(1.2%)</b>
2004	\$41.43	\$42.40	\$0.97	2.3%
2005	<b>\$57.89</b>	<b>\$58.08</b>	<b>\$0.18</b>	<b>0.3%</b>
2006	\$48.10	\$49.27	\$1.17	2.4%
2007	<b>\$54.67</b>	<b>\$57.58</b>	<b>\$2.90</b>	<b>5.0%</b>
2008	\$66.12	\$66.40	\$0.28	0.4%
2009	<b>\$36.55</b>	<b>\$36.61</b>	<b>\$0.06</b>	<b>0.2%</b>



## PJM Hourly real-time, load-weighted LMP minus PJM hourly day-ahead, load-weighted LMP: January through November 2009



## PJM system simple hourly average LMP: January through November 2009



## Monthly average percentage of real-time self-supply load, bilateral-supply load and spot-supply load based on parent companies: 2008 through November 2009

	2008			2009			Difference in Percentage Points		
	Bilateral Contract	Spot	Self-Supply	Bilateral Contract	Spot	Self-Supply	Bilateral Contract	Spot	Self-Supply
Jan	14.3%	17.3%	68.4%	12.6%	15.4%	72.0%	(1.7%)	(1.9%)	3.6%
<b>Feb</b>	15.2%	17.3%	67.5%	<b>13.4%</b>	<b>14.5%</b>	<b>72.1%</b>	<b>(1.7%)</b>	<b>(2.9%)</b>	<b>4.6%</b>
Mar	16.0%	17.1%	66.9%	13.8%	16.7%	69.5%	(2.3%)	(0.4%)	2.6%
<b>Apr</b>	16.6%	18.0%	65.4%	<b>13.5%</b>	<b>17.2%</b>	<b>69.3%</b>	<b>(3.1%)</b>	<b>(0.8%)</b>	<b>3.9%</b>
May	16.0%	18.8%	65.3%	14.6%	18.8%	66.7%	(1.4%)	(0.0%)	1.4%
<b>Jun</b>	13.1%	21.0%	65.9%	<b>12.5%</b>	<b>16.5%</b>	<b>71.0%</b>	<b>(0.6%)</b>	<b>(4.5%)</b>	<b>5.1%</b>
Jul	13.7%	20.6%	65.7%	12.6%	16.9%	70.5%	(1.2%)	(3.7%)	4.8%
<b>Aug</b>	14.9%	22.6%	62.4%	<b>11.7%</b>	<b>16.0%</b>	<b>72.3%</b>	<b>(3.2%)</b>	<b>(6.6%)</b>	<b>9.9%</b>
Sep	14.7%	23.0%	62.2%	12.5%	18.1%	69.4%	(2.3%)	(4.9%)	7.2%
<b>Oct</b>	15.1%	22.7%	62.2%	<b>13.0%</b>	<b>19.8%</b>	<b>67.2%</b>	<b>(2.1%)</b>	<b>(2.9%)</b>	<b>5.0%</b>
Nov	14.8%	22.9%	62.3%	13.2%	19.0%	67.8%	(1.7%)	(4.0%)	5.6%
<b>Dec</b>	12.1%	20.5%	67.4%						
Annual	14.6%	20.1%	65.2%	13.0%	17.2%	69.8%	(1.6%)	(3.0%)	4.6%

## Monthly average percentage of day-ahead self-supply load, bilateral supply load, and spot-supply load based on parent companies: 2008 through November 2009

	2008			2009			Difference in Percentage Points		
	Bilateral Contract	Spot	Self-Supply	Bilateral Contract	Spot	Self-Supply	Bilateral Contract	Spot	Self-Supply
Jan	4.2%	15.6%	80.2%	4.4%	13.7%	81.9%	0.2%	(1.9%)	1.6%
<b>Feb</b>	4.5%	16.0%	79.5%	<b>4.5%</b>	<b>12.3%</b>	<b>83.2%</b>	<b>(0.1%)</b>	<b>(3.7%)</b>	<b>3.7%</b>
Mar	4.7%	16.0%	79.3%	4.3%	12.8%	82.9%	(0.4%)	(3.3%)	3.6%
<b>Apr</b>	5.0%	16.8%	78.2%	<b>4.4%</b>	<b>13.8%</b>	<b>81.7%</b>	<b>(0.5%)</b>	<b>(3.0%)</b>	<b>3.5%</b>
May	5.0%	18.2%	76.8%	4.6%	15.6%	79.8%	(0.4%)	(2.6%)	3.0%
<b>Jun</b>	5.5%	20.2%	74.3%	<b>4.7%</b>	<b>13.9%</b>	<b>81.4%</b>	<b>(0.8%)</b>	<b>(6.3%)</b>	<b>7.2%</b>
Jul	5.6%	20.4%	74.0%	5.6%	16.0%	78.4%	0.0%	(4.4%)	4.4%
<b>Aug</b>	4.9%	20.2%	75.0%	<b>5.2%</b>	<b>15.3%</b>	<b>79.5%</b>	<b>0.3%</b>	<b>(4.9%)</b>	<b>4.6%</b>
Sep	5.4%	19.3%	75.3%	4.8%	16.1%	79.2%	(0.7%)	(3.2%)	3.8%
<b>Oct</b>	5.4%	20.3%	74.3%	<b>5.0%</b>	<b>17.8%</b>	<b>77.2%</b>	<b>(0.4%)</b>	<b>(2.5%)</b>	<b>2.9%</b>
Nov	5.6%	18.9%	75.5%	5.8%	15.9%	78.3%	0.2%	(3.0%)	2.8%
<b>Dec</b>	4.6%	19.1%	76.3%						
Annual	5.0%	18.4%	76.5%	4.8%	14.8%	80.3%	(0.2%)	(3.6%)	3.8%

## PJM installed capacity (By fuel source): January 1, May 31, June 1, November 30, 2009

	1-Jan-09		31-May-09		1-Jun-09		30-Nov-09	
	MW	Percent	MW	Percent	MW	Percent	MW	Percent
Coal	67,064.7	40.7%	67,025.3	40.6%	68,159.0	40.7%	68,137.1	40.7%
<b>Gas</b>	<b>48,333.9</b>	<b>29.3%</b>	<b>48,506.9</b>	<b>29.4%</b>	<b>48,979.3</b>	<b>29.2%</b>	<b>48,838.8</b>	<b>29.2%</b>
Hydroelectric	7,476.3	4.5%	7,550.1	4.6%	7,939.9	4.7%	7,939.9	4.7%
<b>Nuclear</b>	<b>30,478.0</b>	<b>18.5%</b>	<b>30,542.5</b>	<b>18.5%</b>	<b>30,701.5</b>	<b>18.3%</b>	<b>30,701.5</b>	<b>18.4%</b>
Oil	10,714.9	6.5%	10,674.3	6.5%	10,704.3	6.4%	10,700.1	6.4%
<b>Solid waste</b>	<b>664.7</b>	<b>0.4%</b>	<b>664.7</b>	<b>0.4%</b>	<b>672.1</b>	<b>0.4%</b>	<b>672.1</b>	<b>0.4%</b>
Wind	166.4	0.1%	182.9	0.1%	297.8	0.2%	306.9	0.2%
<b>Total</b>	<b>164,898.9</b>	<b>100.0%</b>	<b>165,146.7</b>	<b>100.0%</b>	<b>167,453.9</b>	<b>100.0%</b>	<b>167,296.4</b>	<b>100.0%</b>

## PJM generation (By fuel source (GWh)): January through November 2009

	GWh	Percent
Coal	315,081.9	50.1%
<b>Nuclear</b>	<b>227,033.0</b>	<b>36.1%</b>
Natural Gas	61,851.3	9.8%
<b>Hydro</b>	<b>12,515.6</b>	<b>2.0%</b>
Wind	4,382.5	0.7%
<b>Solid Waste</b>	<b>3,800.2</b>	<b>0.6%</b>
Miscellaneous	1,376.8	0.2%
<b>Heavy Oil</b>	<b>1,361.3</b>	<b>0.2%</b>
Landfill Gas	1,248.0	0.2%
<b>Light Oil</b>	<b>154.7</b>	<b>0.0%</b>
Diesel	13.7	0.0%
<b>Kerosene</b>	<b>7.1</b>	<b>0.0%</b>
Solar	3.3	0.0%
<b>Biomass Gas</b>	<b>2.1</b>	<b>0.0%</b>
Battery	0.2	0.0%
<b>Jet Oil</b>	<b>0.0</b>	<b>0.0%</b>
Total	628,831.7	100.0%

## Capacity factor of wind units in PJM, January through November 2009

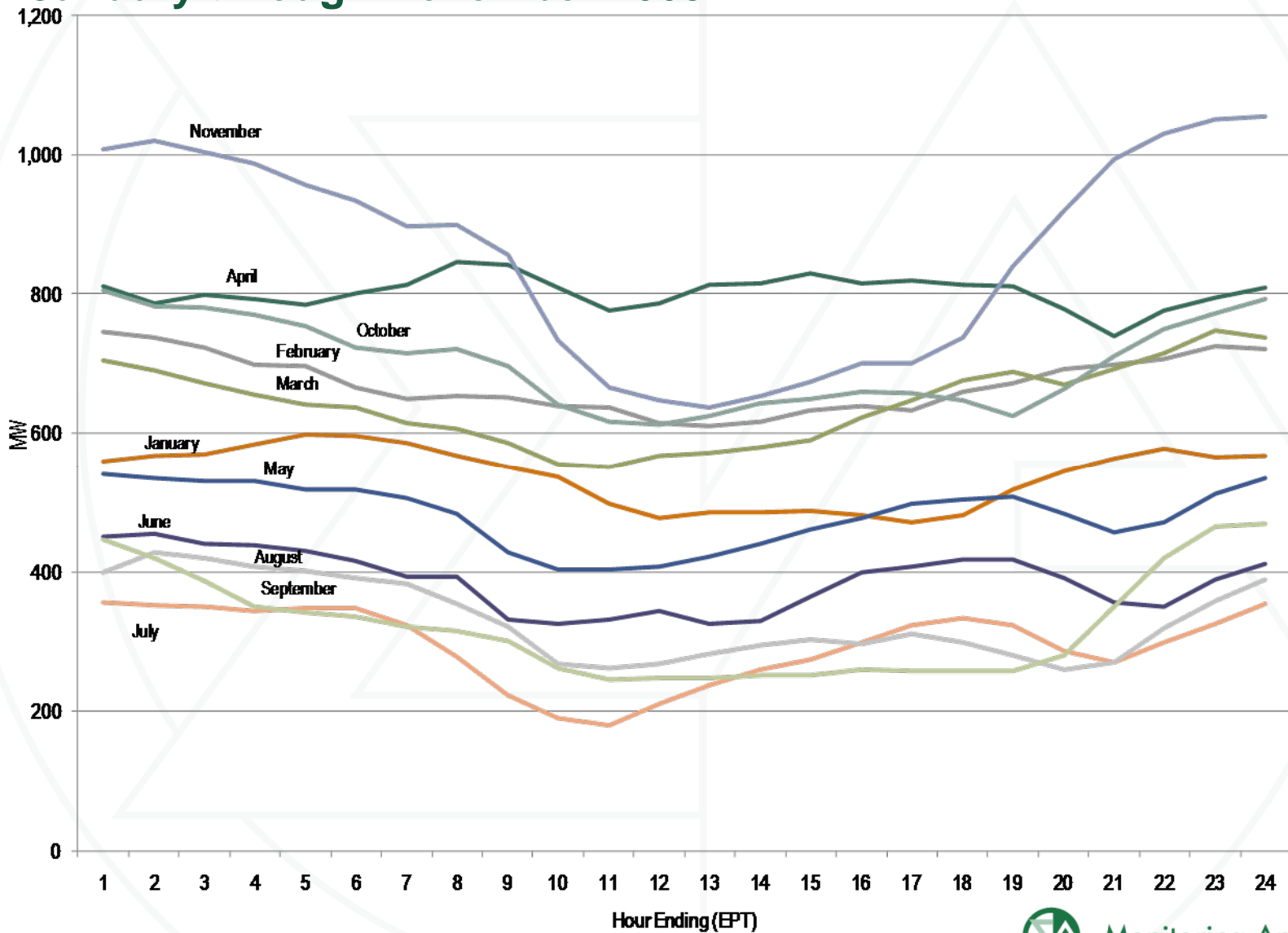
Type of Resource	Capacity Factor	Total Hours	Installed Capacity
Energy-Only Resource	23.2%	62,772	725
<b>Capacity Resource</b>	<b>27.5%</b>	<b>171,086</b>	<b>2,099</b>
All Units	26.8%	233,858	2,824

## Wind resources in Real-Time offering at a negative price in PJM, June through November 2009

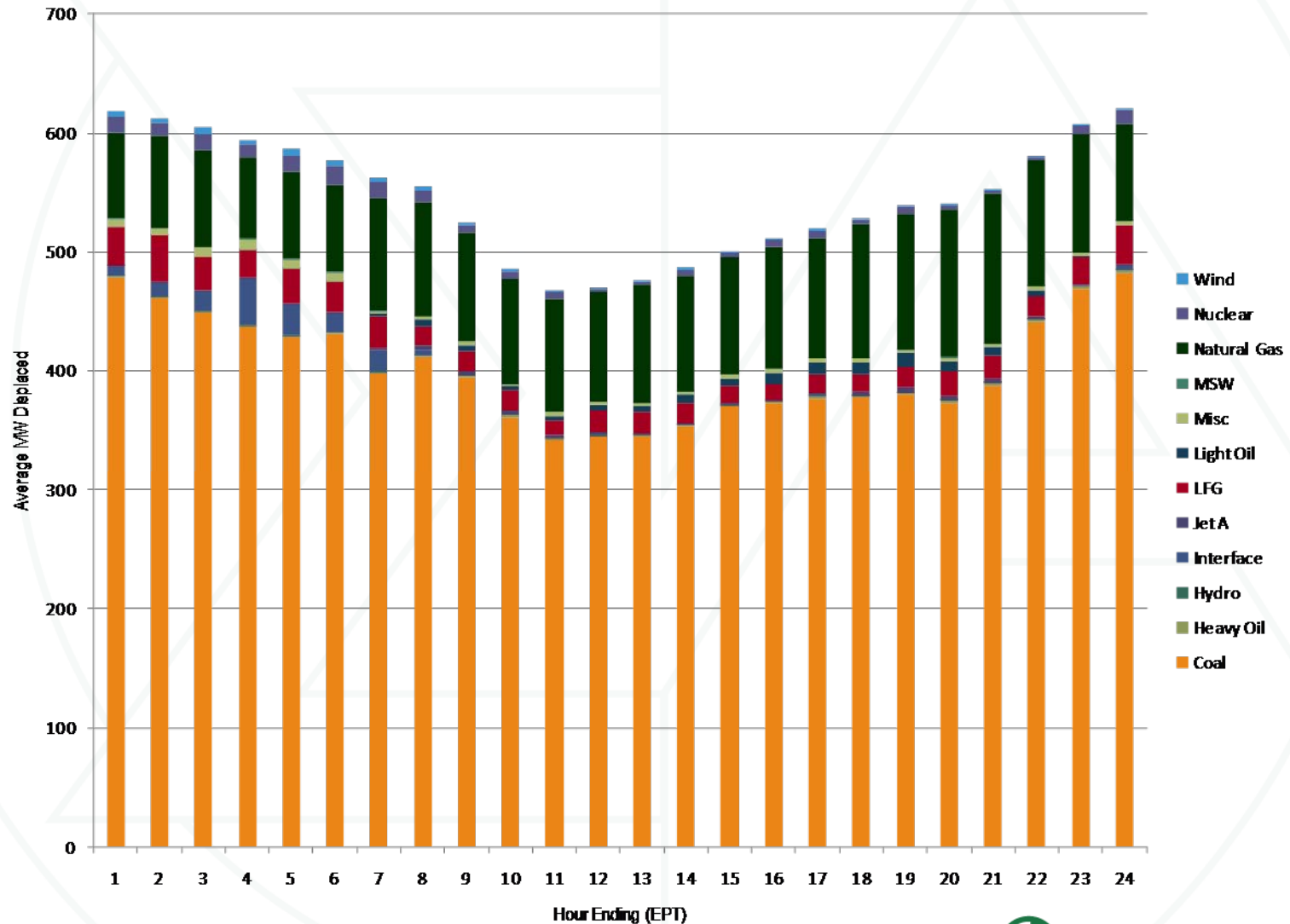
	Average MW Offered Daily	Intervals Marginal	Percent of All Intervals
At Negative Price	133.1	86	0.10%
<b>All Wind</b>	<b>1,044.3</b>	<b>608</b>	<b>0.69%</b>



# Average hourly real-time generation of wind units in PJM, January through November 2009



## Marginal fuel displacement by wind generation in PJM, January through November 2009



# Monthly operating reserve charges: January through November 2008 and 2009

	2008 (Jan-Nov) Charges				2009 (Jan-Nov) Charges			
	Day-Ahead	Synchronous Condensing	Balancing	Total	Day-Ahead	Synchronous Condensing	Balancing	Total
Jan	\$4,126,221	\$456,972	\$39,935,491	\$44,518,684	\$9,260,150	\$1,328,814	\$30,116,725	\$40,705,689
Feb	\$3,731,017	\$200,456	\$23,165,838	\$27,097,312	\$7,434,068	\$839,679	\$16,548,988	\$24,822,735
Mar	\$2,904,498	\$249,900	\$18,916,241	\$22,070,639	\$9,549,963	\$108,664	\$26,025,562	\$35,684,189
Apr	\$4,213,578	\$209,366	\$22,559,577	\$26,982,522	\$6,998,364	\$19,929	\$13,251,273	\$20,269,566
May	\$10,873,205	\$202,397	\$22,970,363	\$34,045,964	\$6,024,108	\$5,543	\$15,490,257	\$21,519,908
Jun	\$7,064,877	\$575,927	\$65,597,311	\$73,238,115	\$6,722,329	\$0	\$19,339,846	\$26,062,175
Jul	\$7,038,834	\$874,234	\$48,041,415	\$55,954,483	\$8,210,636	\$38,643	\$17,728,976	\$25,978,255
Aug	\$6,140,554	\$143,857	\$26,212,547	\$32,496,959	\$7,697,174	\$1	\$21,164,586	\$28,861,761
Sep	\$4,581,147	\$405,308	\$27,809,898	\$32,796,353	\$6,057,598	\$13,611	\$13,471,368	\$19,542,577
Oct	\$6,705,261	\$794,271	\$16,054,255	\$23,553,788	\$7,046,301	\$0	\$17,012,425	\$24,058,727
Nov	\$5,069,462	\$635,697	\$21,097,016	\$26,802,175	\$8,617,280	\$22,639	\$12,888,600	\$21,528,519
Total	\$62,448,654	\$4,748,386	\$332,359,952	\$399,556,993	\$83,617,972	\$2,377,523	\$203,038,607	\$289,034,101
Share of Annual Charges	15.6%	1.2%	83.2%	100.0%	28.9%	0.8%	70.2%	100.0%

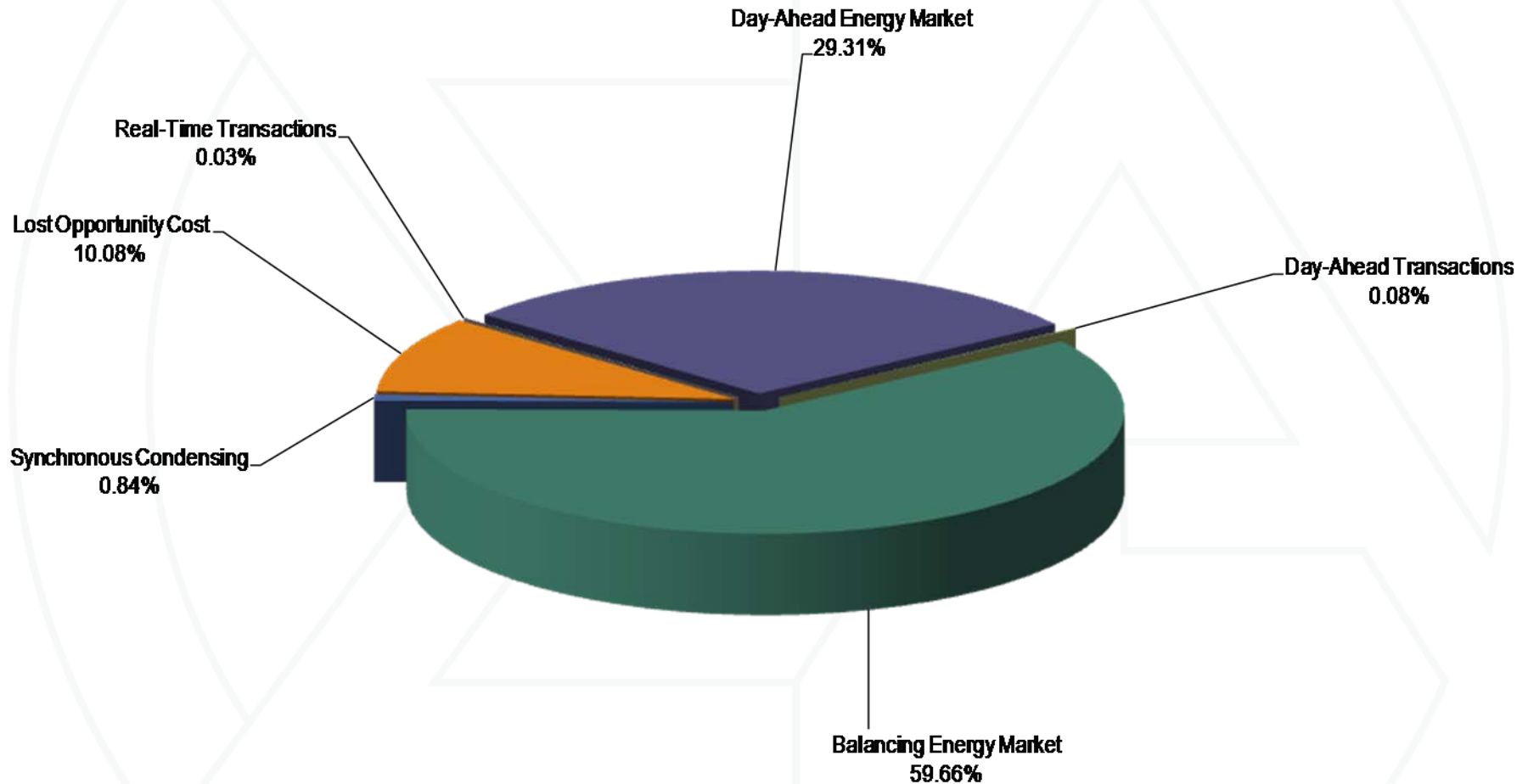
# Regional balancing charges allocation: January through November 2009

	Reliability Charges			Deviation Charges				Total
	Real-Time Load	Real-Time Exports	Reliability Total	Demand Deviations	Supply Deviations	Generator Deviations	Deviations Total	
RTO	\$3,668,821	\$143,266	\$3,812,087	\$58,549,095	\$34,717,846	\$17,722,998	\$110,989,939	\$114,802,026
RTO	2.4%	0.1%	2.5%	38.2%	22.6%	11.6%	72.4%	74.9%
East	\$401,822	\$13,977	\$415,799	\$6,461,754	\$3,397,663	\$1,707,650	\$11,567,067	\$11,982,866
East	0.3%	0.0%	0.3%	4.2%	2.2%	1.1%	7.5%	7.8%
West	\$21,970,653	\$922,677	\$22,893,330	\$1,818,863	\$1,236,500	\$638,384	\$3,693,746	\$26,587,076
West	14.3%	0.6%	14.9%	1.2%	0.8%	0.4%	2.4%	17.3%
Total	\$26,041,296	\$1,079,920	\$27,121,216	\$66,829,712	\$39,352,009	\$20,069,031	\$126,250,752	\$153,371,968
Total	17.0%	0.7%	17.7%	43.6%	25.7%	13.1%	82.3%	100.0%

## Average regional balancing operating reserve rates: January through November 2009 (\$/MWh)

	Reliability	Deviations
RTO	\$0.0055	\$0.6499
East	\$0.0012	\$0.1135
West	\$0.0845	\$0.0537

# Operating reserve credits: January through November 2009



\* Due to billing adjustments, current numbers may not reflect final billing statements. As a result, total credits may equal total charges.

## Top 10 units and organizations receiving total operating reserve credits: January through November 2009

Rank	Units			Organizations		
	Total Credit	Total Credit Share	Total Credit Cumulative Distribution	Total Credit	Total Credit Share	Total Credit Cumulative Distribution
1	\$31,336,339	11.0%	11.0%	\$86,712,278	30.5%	30.5%
2	\$22,937,648	8.1%	19.1%	\$52,879,552	18.6%	49.1%
3	\$11,611,235	4.1%	23.2%	\$26,736,566	9.4%	58.5%
4	\$8,959,293	3.2%	26.3%	\$16,320,044	5.7%	64.3%
5	\$7,153,457	2.5%	28.9%	\$14,927,785	5.3%	69.5%
6	\$6,097,018	2.1%	31.0%	\$12,989,057	4.6%	74.1%
7	\$4,070,985	1.4%	32.4%	\$12,246,532	4.3%	78.4%
8	\$3,631,153	1.3%	33.7%	\$6,893,936	2.4%	80.8%
9	\$3,507,989	1.2%	34.9%	\$4,915,230	1.7%	82.6%
10	\$3,437,556	1.2%	36.1%	\$4,755,885	1.7%	84.2%

## Regional balancing operating reserve credits: January through November 2009

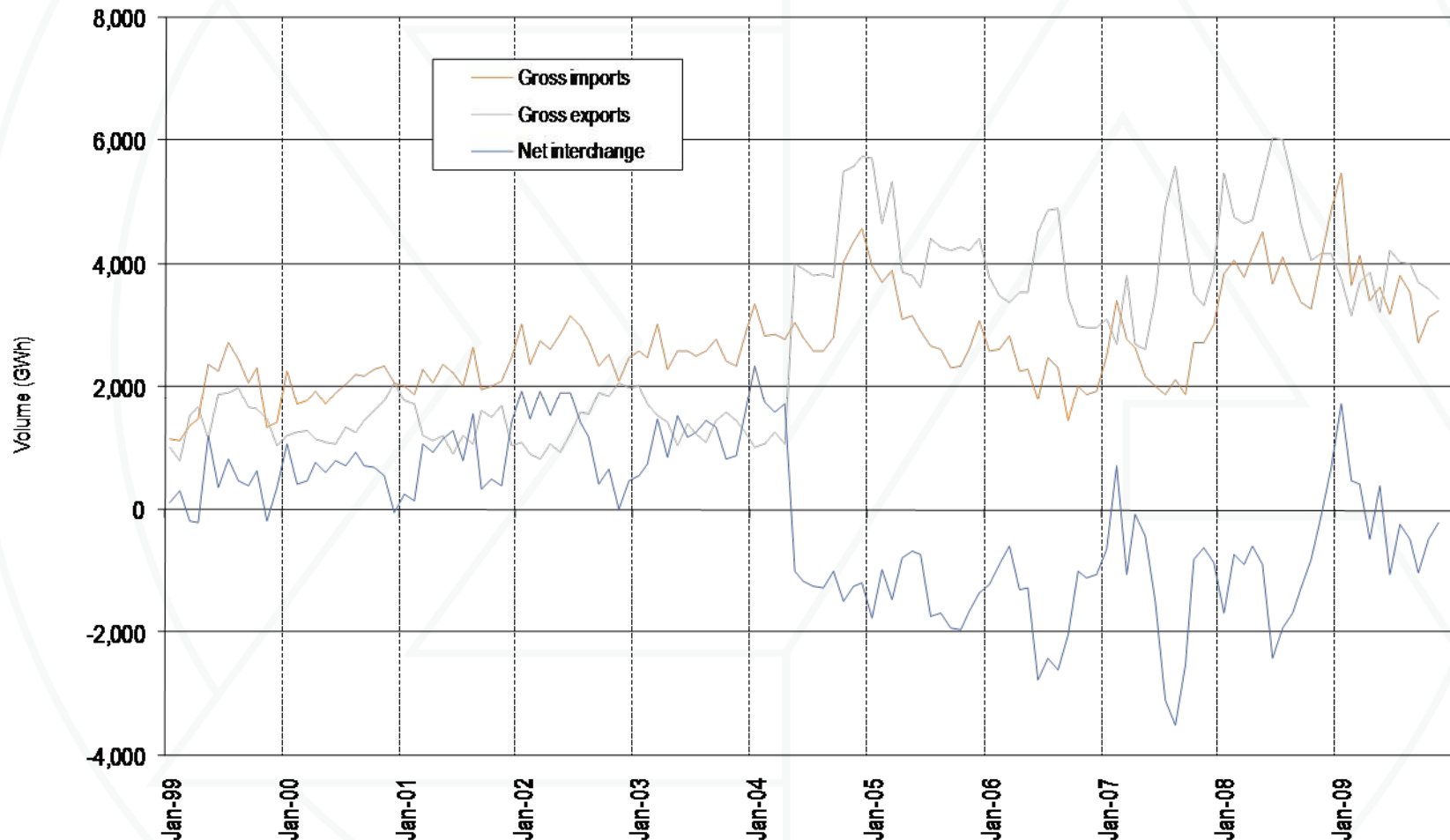
	Reliability Credits	Deviation Credits	Total Credits
RTO	\$3,812,087	\$110,989,939	\$114,802,026
East	\$415,799	\$11,567,067	\$11,982,866
West	\$22,893,330	\$3,693,746	\$26,587,076
Total	\$27,121,216	\$126,250,752	\$153,371,968



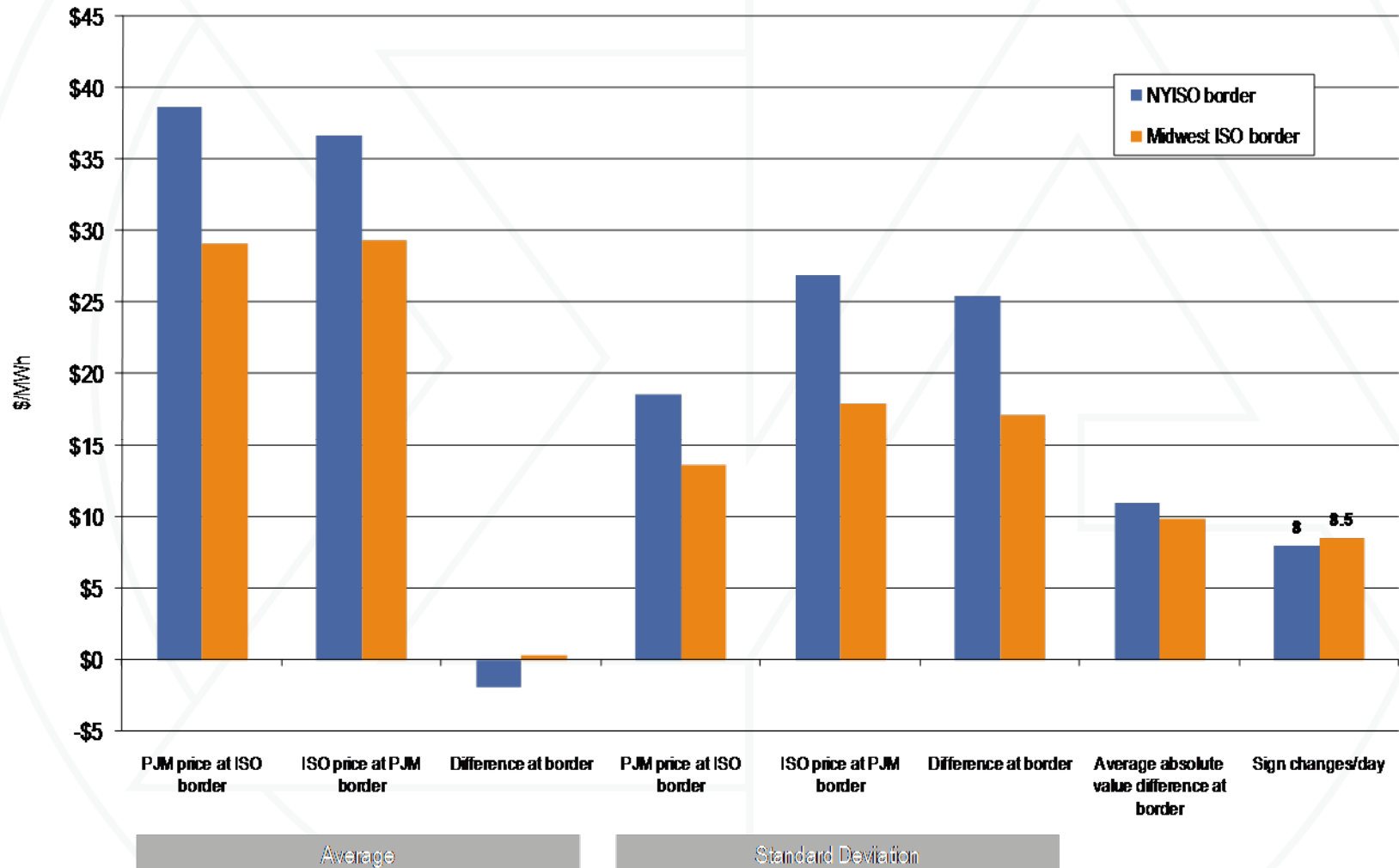
## Total deviations: January through November 2009

	Demand Deviations	Supply Deviations	Generator Deviations	Deviations Total
Total (MWh)	86,728,194	51,224,710	25,618,602	163,571,506

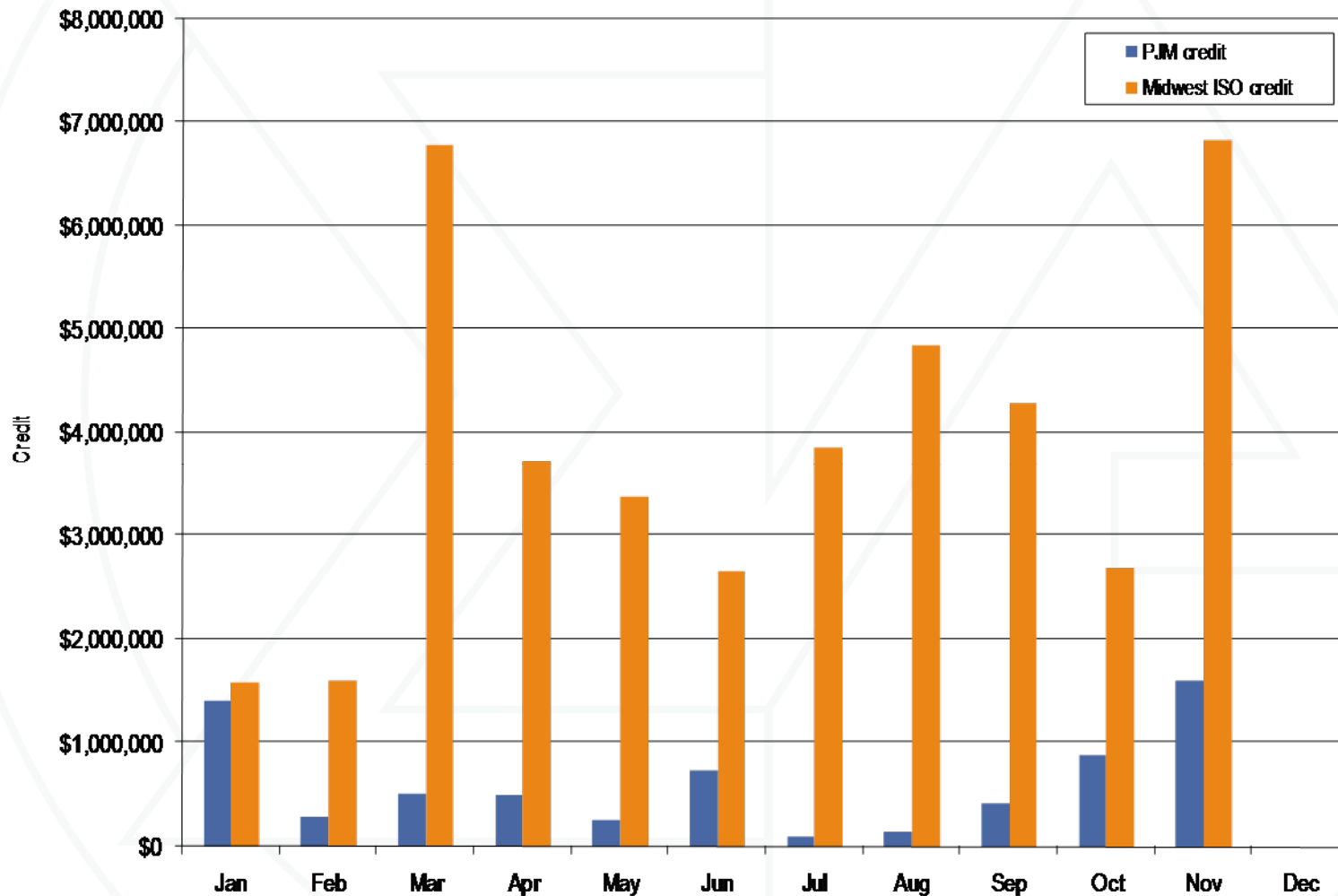
## PJM scheduled import and export transaction volume history: 1999 through November 2009



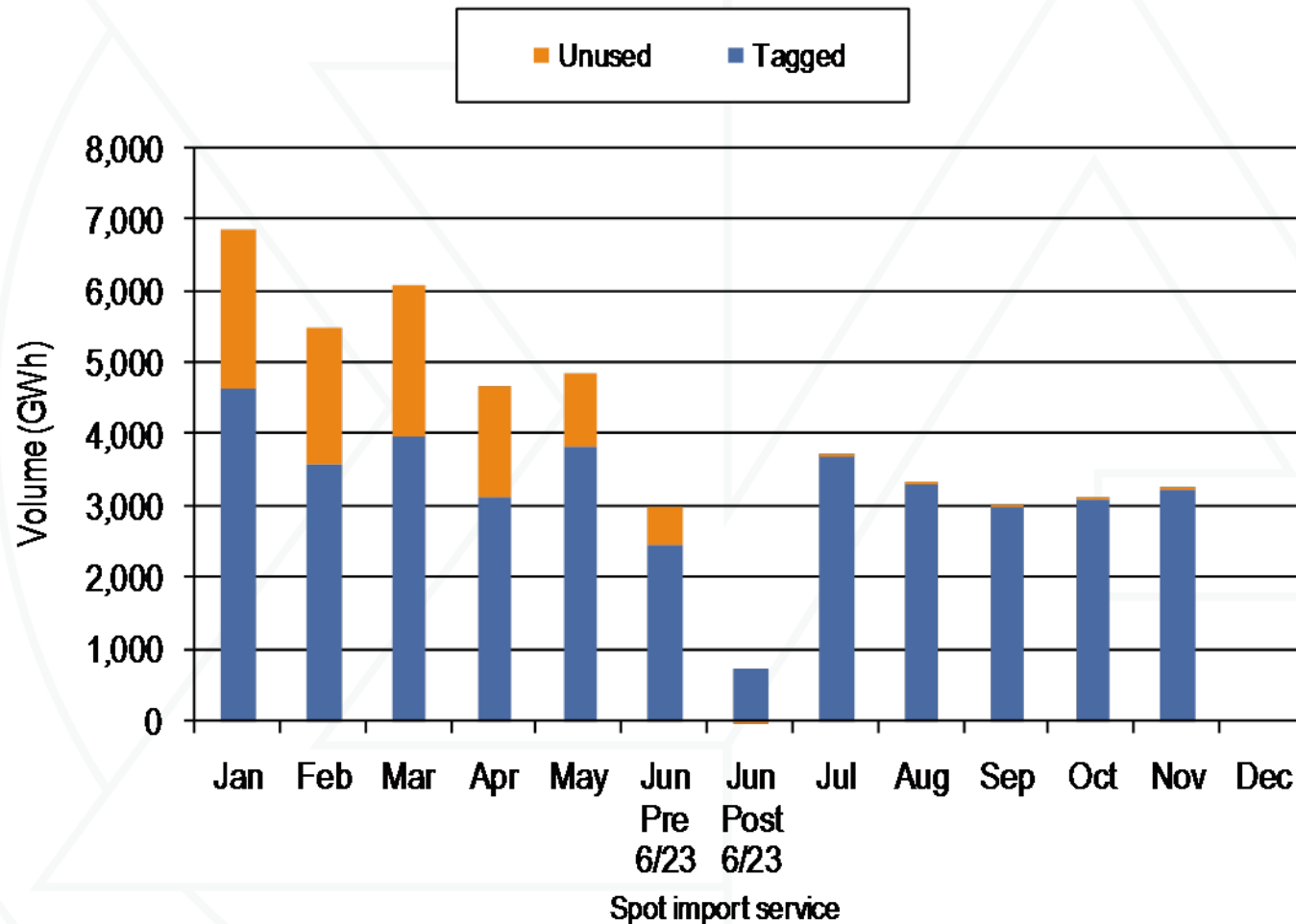
# PJM, NYISO and Midwest ISO real-time border price averages: January through November 2009



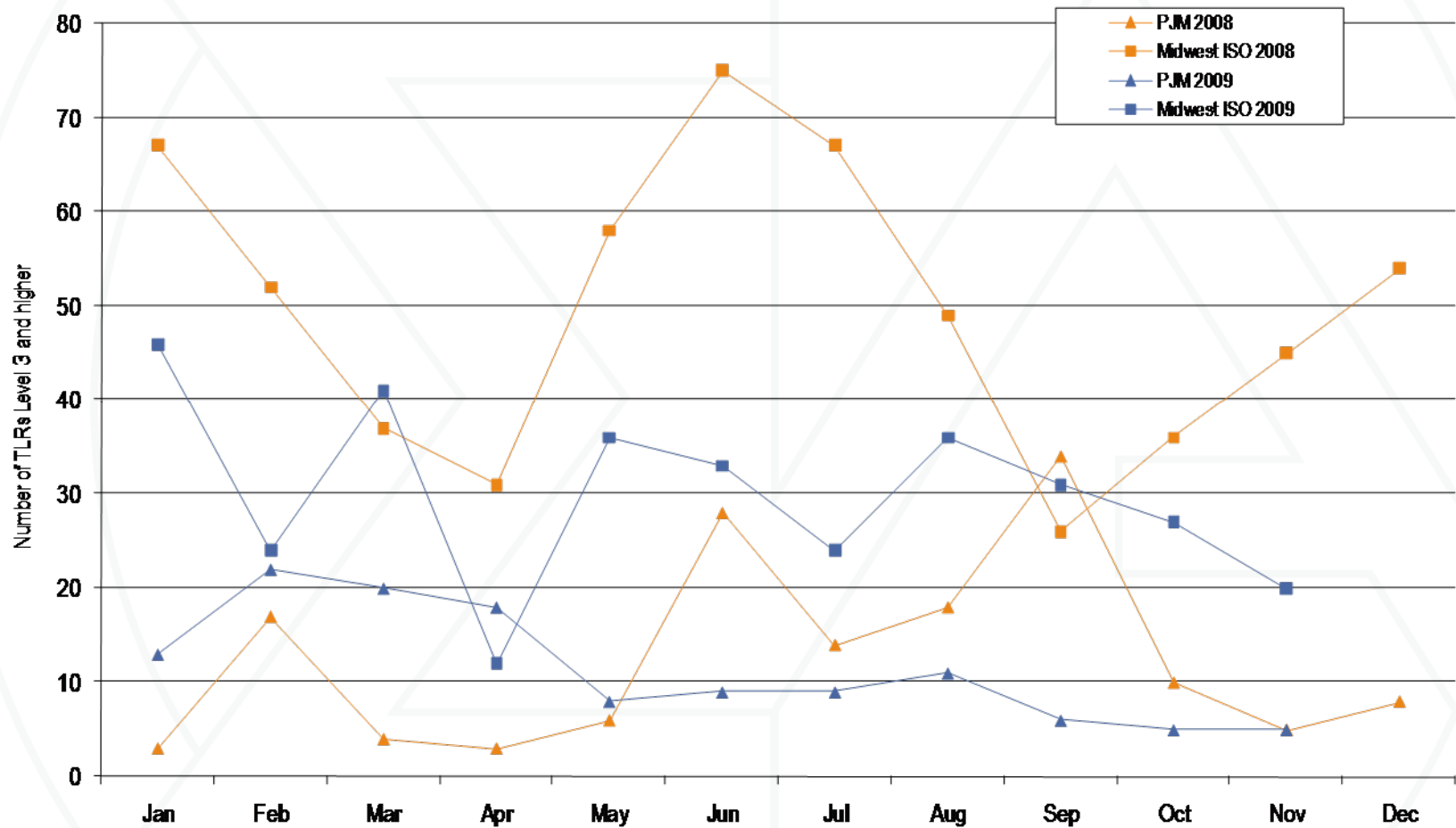
## Credits for coordinated congestion management: January through November 2009



## Spot import service utilization: January through November 2009



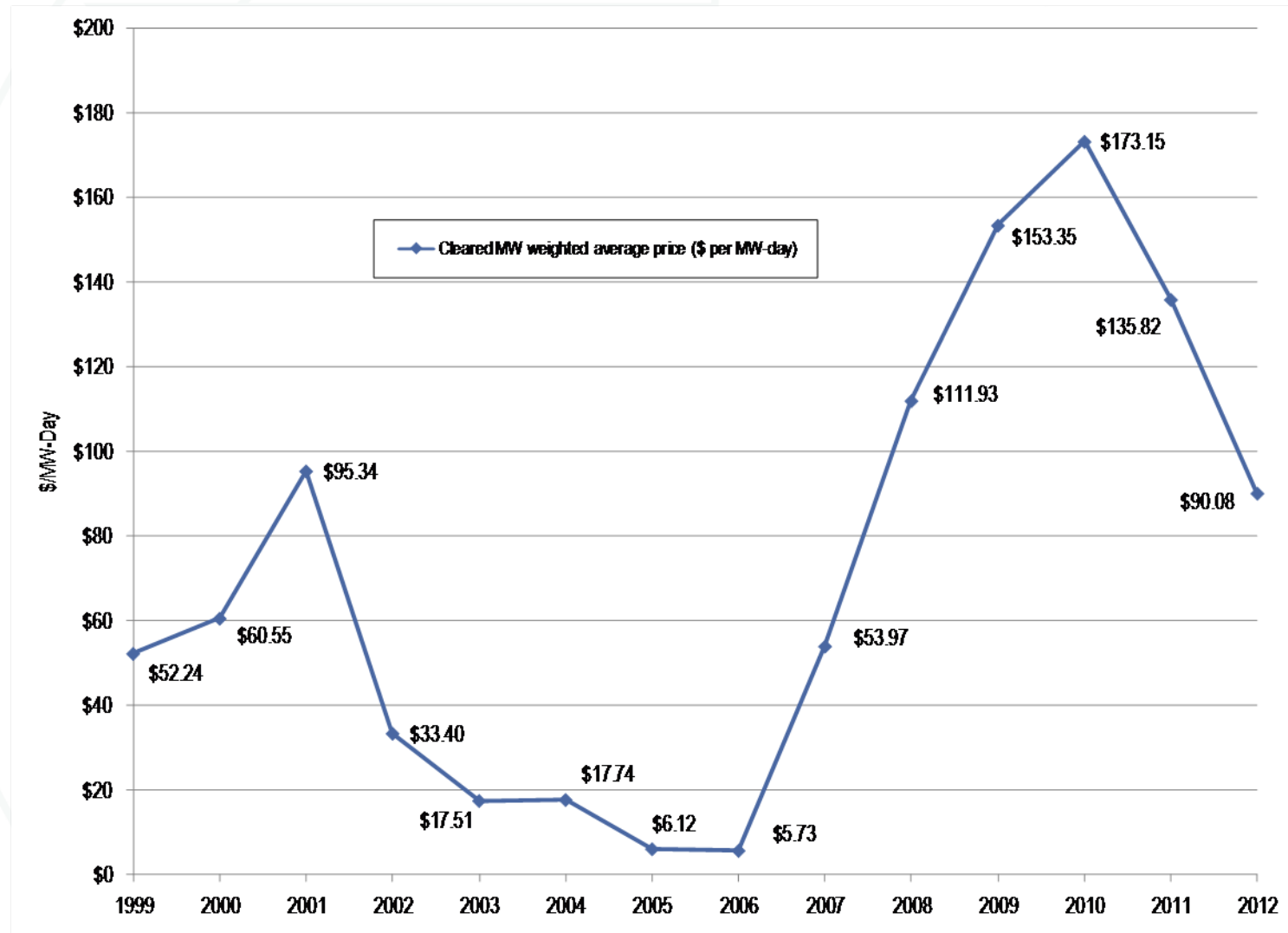
## PJM and Midwest ISO TLR procedures: January through November 2009



# Capacity prices: 2007/2008 through 2012/2013 RPM Auctions

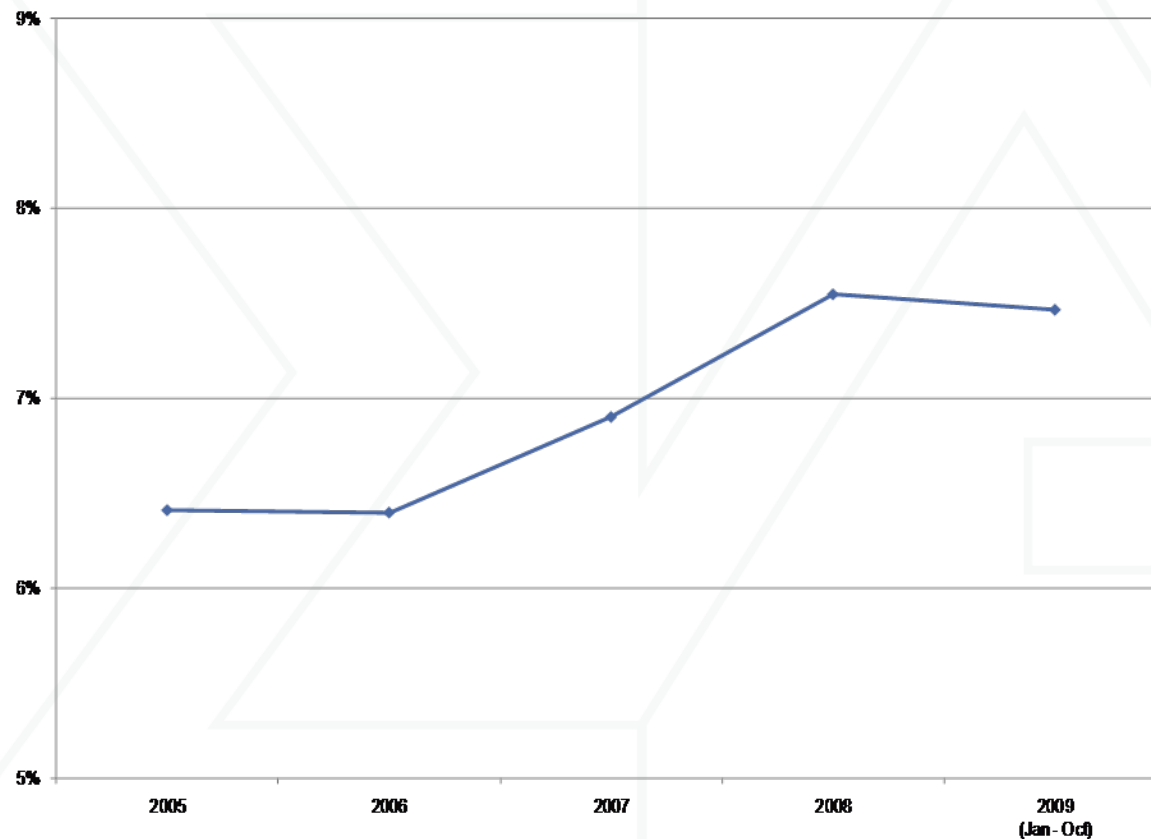
	RPM Clearing Price (\$ per MW-day)					
	RTO	MAAC+APS	MAAC	EMAAC	SWMAAC	DPL-South
2007/2008 BRA	\$40.80			\$197.67	\$188.54	
<b>2008/2009 BRA</b>	<b>\$111.92</b>			<b>\$148.80</b>	<b>\$210.11</b>	
2008/2009 Third IA	\$10.00				\$223.85	
<b>2009/2010 BRA</b>	<b>\$102.04</b>	<b>\$191.32</b>			<b>\$237.33</b>	
2009/2010 Third IA	\$40.00	\$86.00				
<b>2010/2011 BRA</b>	<b>\$174.29</b>					<b>\$178.27</b>
2011/2012 BRA	\$110.00					
<b>2011/2012 First IA</b>	<b>\$55.00</b>					
2012/2013 BRA	\$16.46		\$133.37	\$139.73		\$222.30
						\$185.00

# History of capacity prices: Calendar year 1999 through 2012





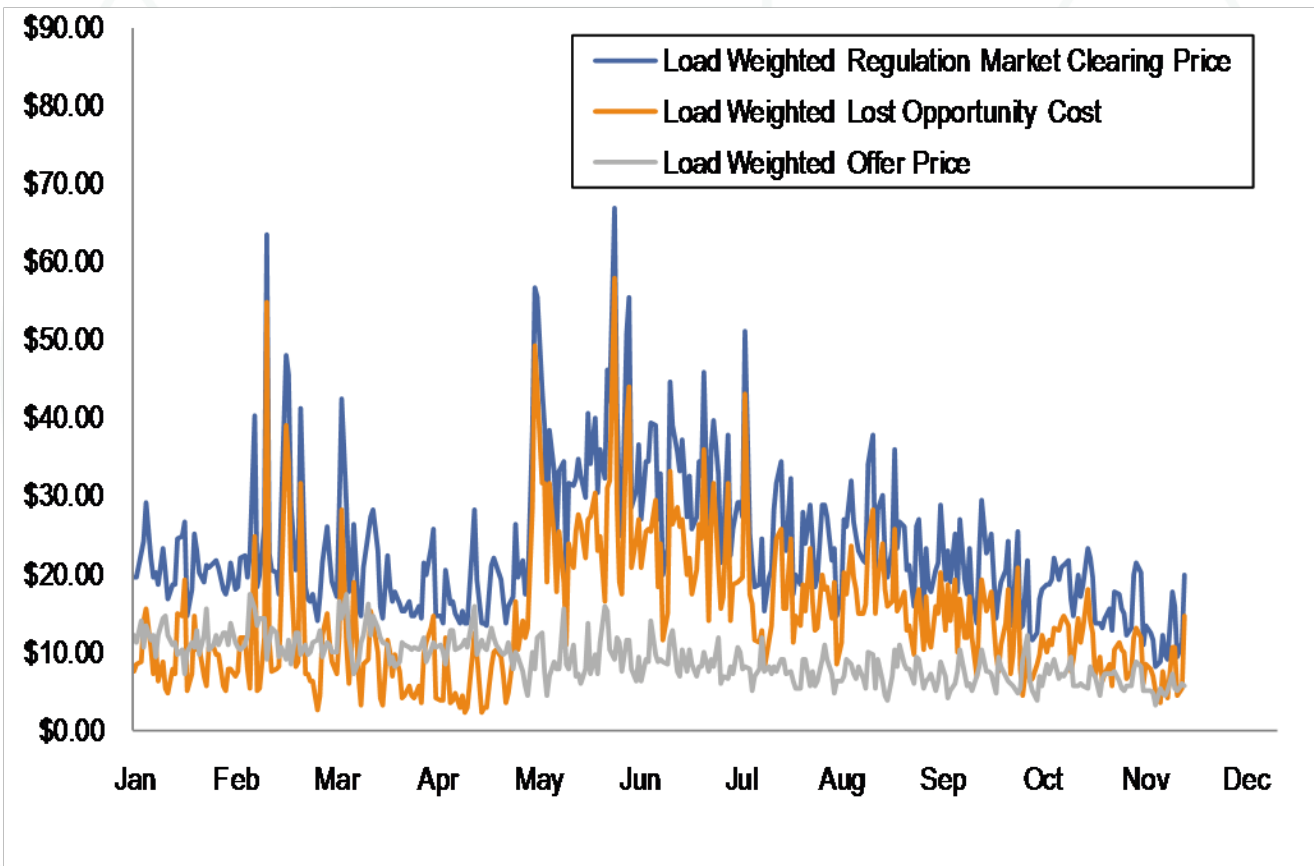
## Trends in the PJM equivalent demand forced outage rate (EFORd): Calendar years 2005 to 2009 (January through October)



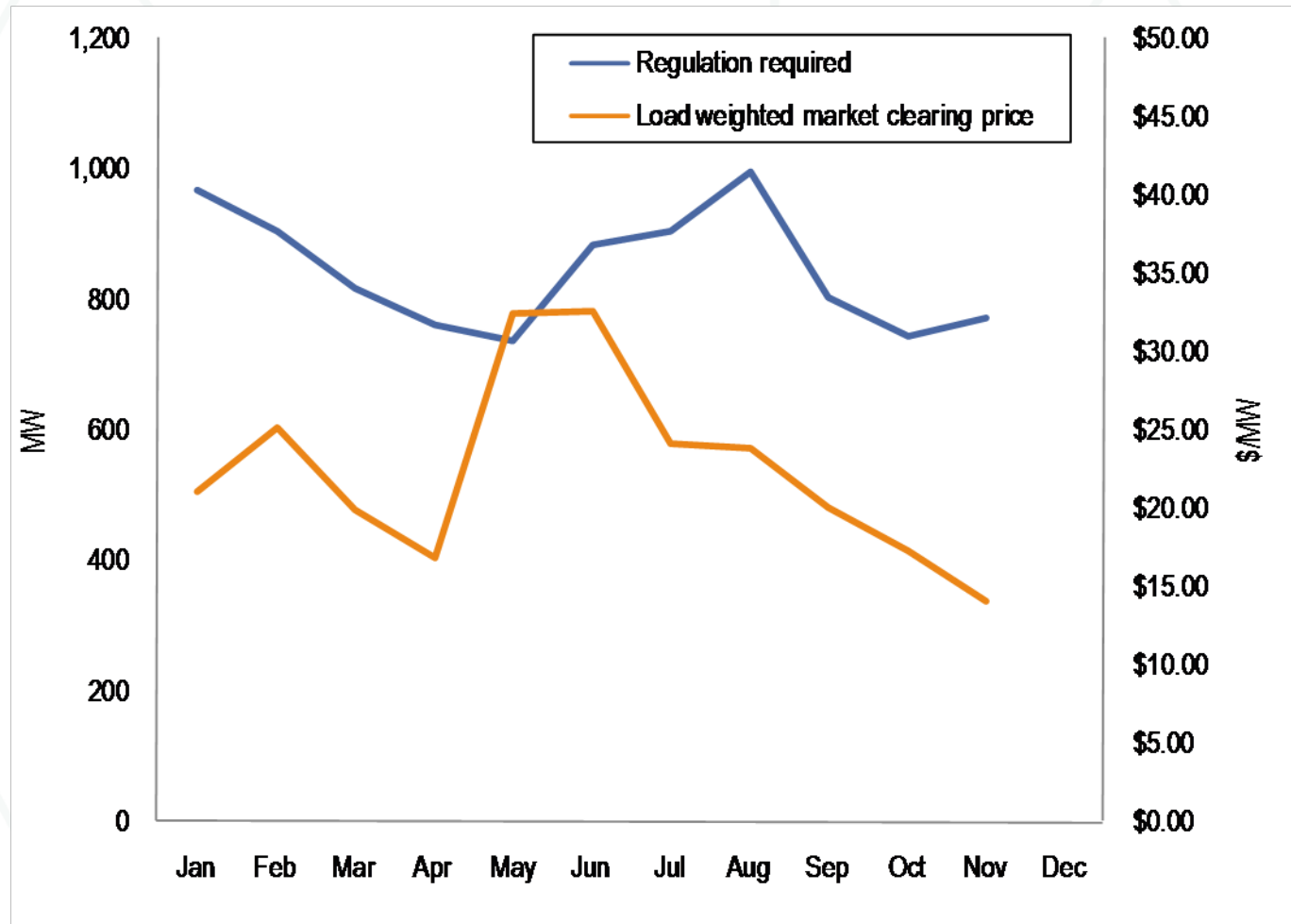
# PJM regulation capability, daily offer and hourly eligible: January through November 2009

Period	Regulation Capability (MW)	Average Daily Offer (MW)	Percentage of Capability Offered	Average Hourly Eligible (MW)	Percent of Capability Eligible
All Hours	7,718	6,320	82%	2,512	33%
<b>Off Peak</b>	<b>7,718</b>			<b>2,188</b>	<b>28%</b>
On Peak	7,718			2,871	27%

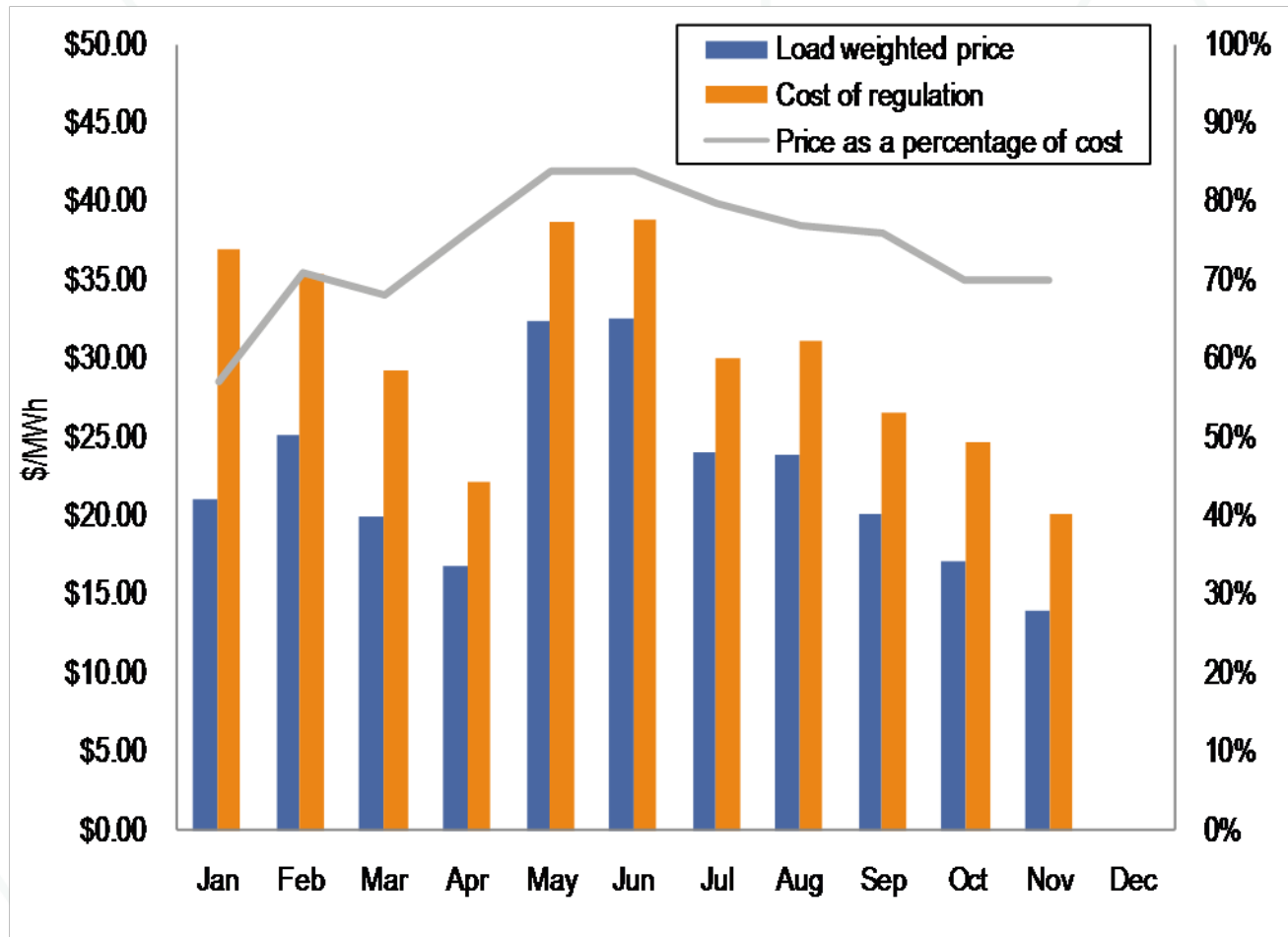
## PJM Regulation Market daily average market-clearing price, lost opportunity cost and offer price (Dollars per MWh): January through November 2009



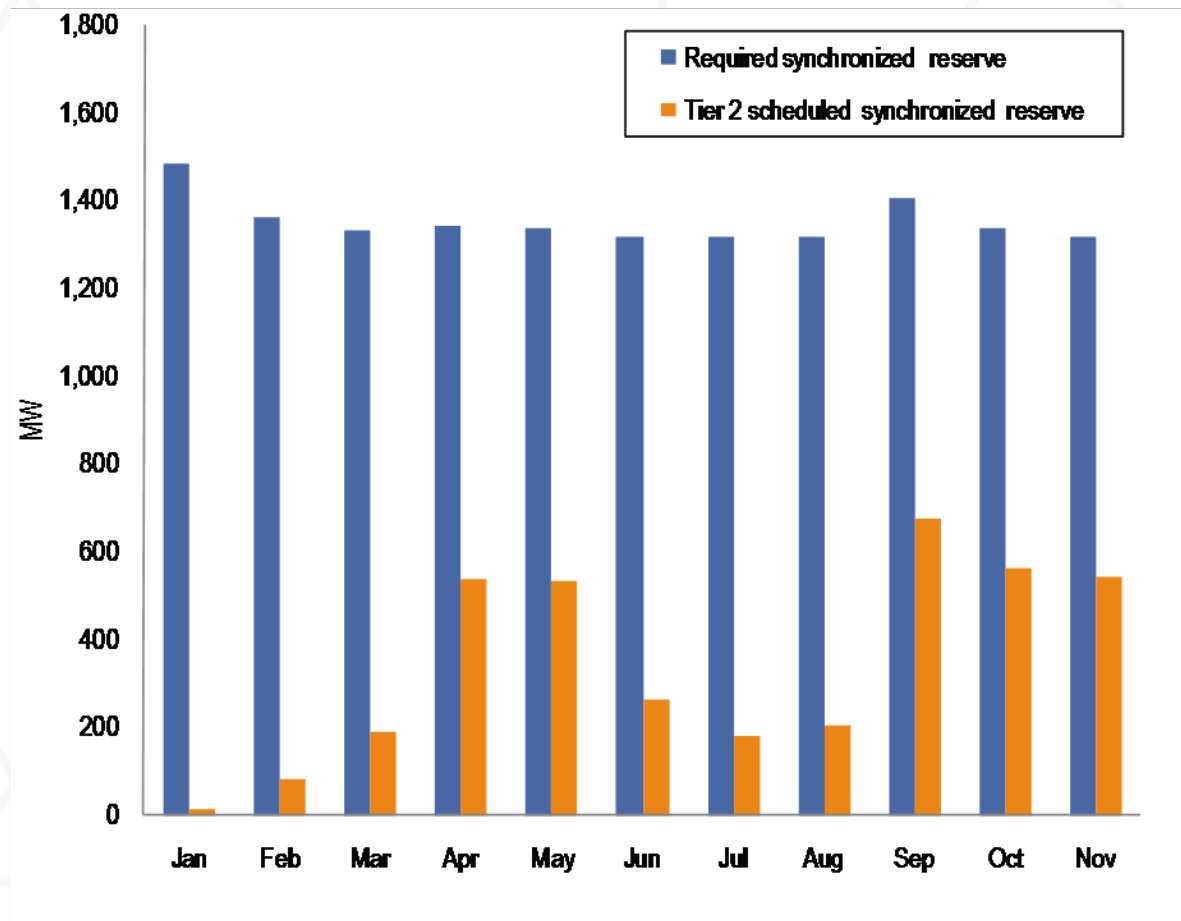
# Monthly average regulation demand (required) vs. price: January through November 2009



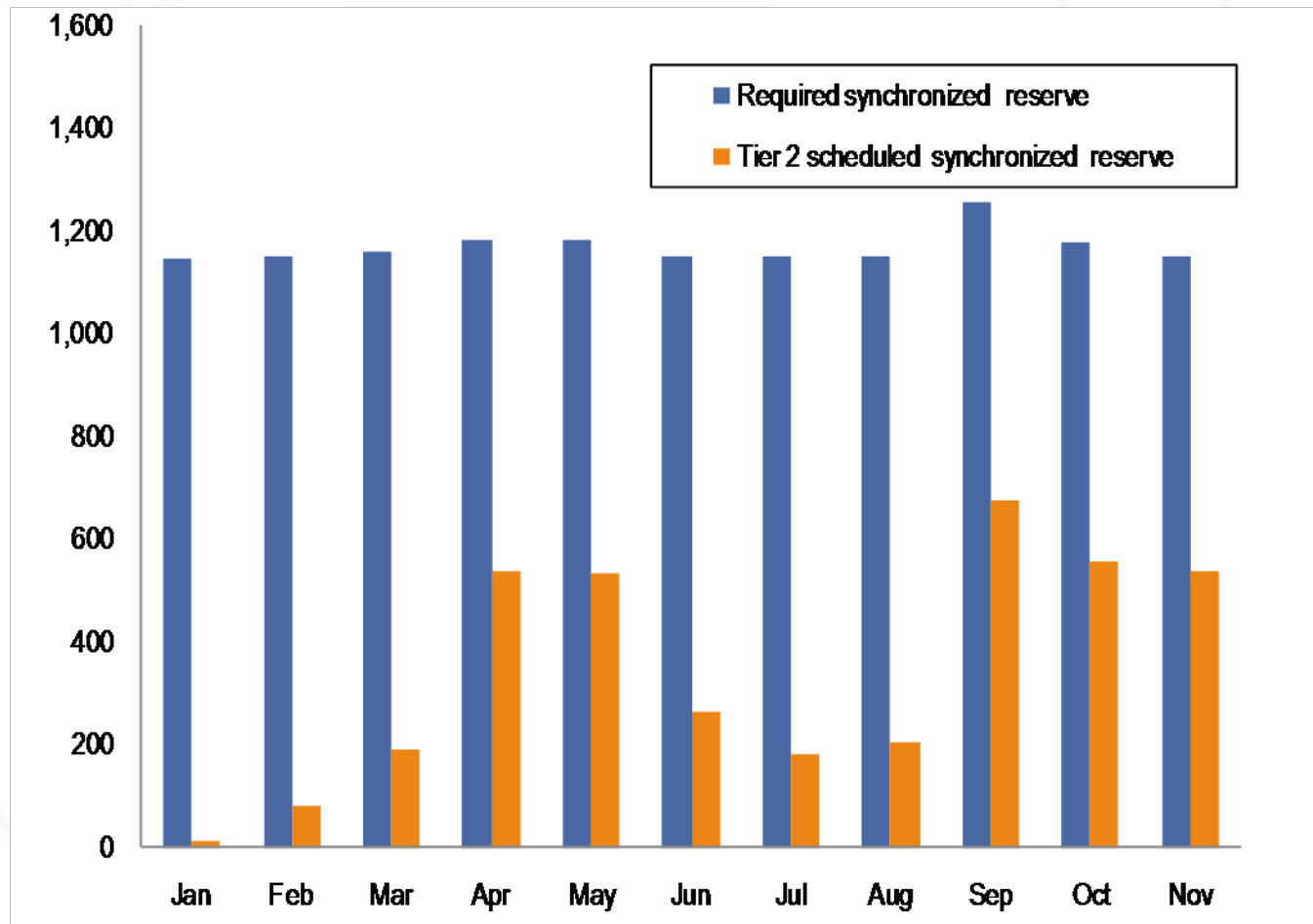
# Monthly load weighted, average regulation cost and price: January through November 2009



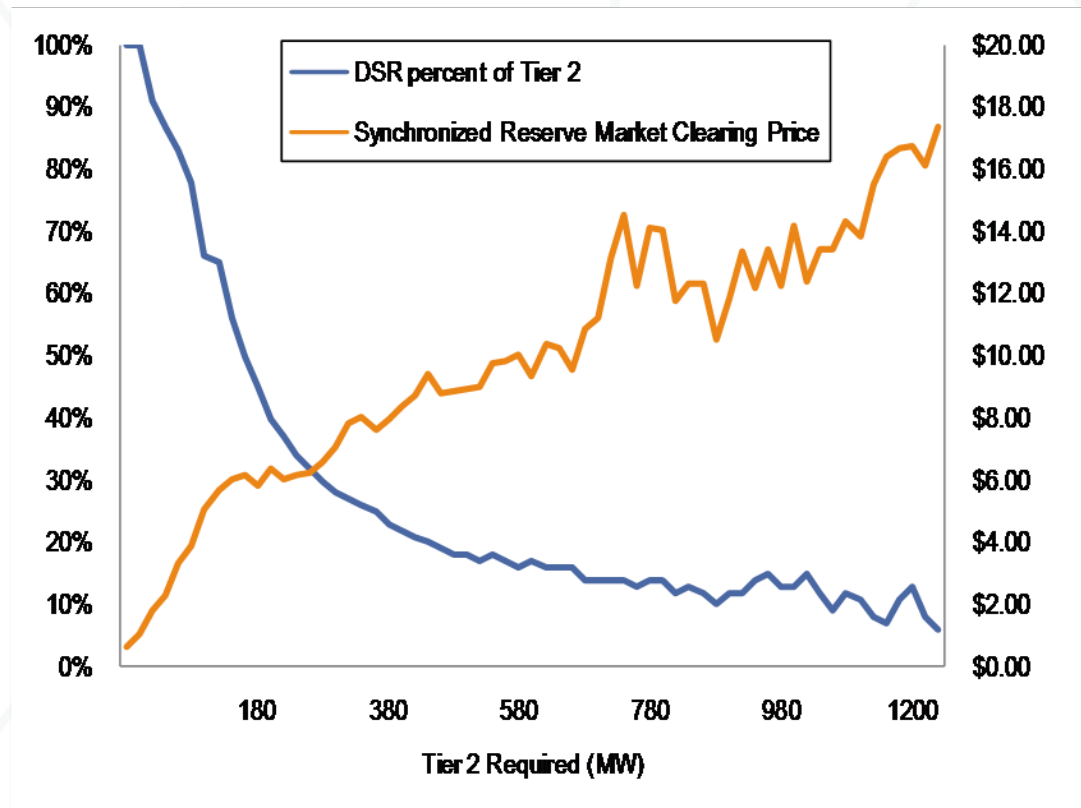
# RFC Synchronized Reserve Zone monthly average synchronized reserve required vs. Tier 2 scheduled MW: January through November 2009



# RFC Synchronized Reserve Zone, Mid-Atlantic Subzone average hourly synchronized reserve required vs. Tier 2 scheduled: January through November 2009



# Required Tier 2 synchronized reserve, synchronized reserve market clearing price, and DSR percent of Tier 2: January through November 2009





## Total annual PJM congestion (Dollars (Millions)): Calendar years 2003 to November 2009

	Congestion Charges	Percent Change
2003	\$464	NA
<b>2004</b>	<b>\$750</b>	<b>62%</b>
2005	\$2,092	179%
<b>2006</b>	<b>\$1,603</b>	<b>(23%)</b>
2007	\$1,846	15%
<b>2008</b>	<b>\$2,117</b>	<b>15%</b>
2009	\$623	NA
<b>Total</b>	<b>\$9,494</b>	

## Total annual PJM congestion costs by category (Dollars (Millions)): January through November 2008 and 2009

Congestion Costs (Millions)				
Year	Load Payments	Generation Credits	Explicit	Total
2008 (Jan-Nov)	\$1,013.4	(\$991.4)	(\$31.5)	\$1,973.4
2009 (Jan-Nov)	\$233.9	(\$439.4)	(\$50.8)	\$622.6

## ARR and FTR congestion hedging: Planning periods 2008 to 2009 and 2009 to 2010

Planning Period	ARR Credits	FTR Credits	FTR Auction Revenue	Total ARR and FTR Hedge	Congestion	Total Hedge - Congestion Difference	Percent Hedged
2008/2009	\$2,361,292,807	\$1,748,201,585	\$2,489,609,470	\$1,619,884,922	\$1,489,647,665	\$130,237,257	>100%
<b>2009/2010*</b>	<b>\$639,035,005</b>	<b>\$286,775,075</b>	<b>\$682,731,400</b>	<b>\$243,078,680</b>	<b>\$264,172,403</b>	<b>(\$21,093,724)</b>	<b>92.0%</b>
* Shows six months ended 30-Nov-09							