

# **NYISO Market Operations Report**

*Business Issues Committee Meeting*

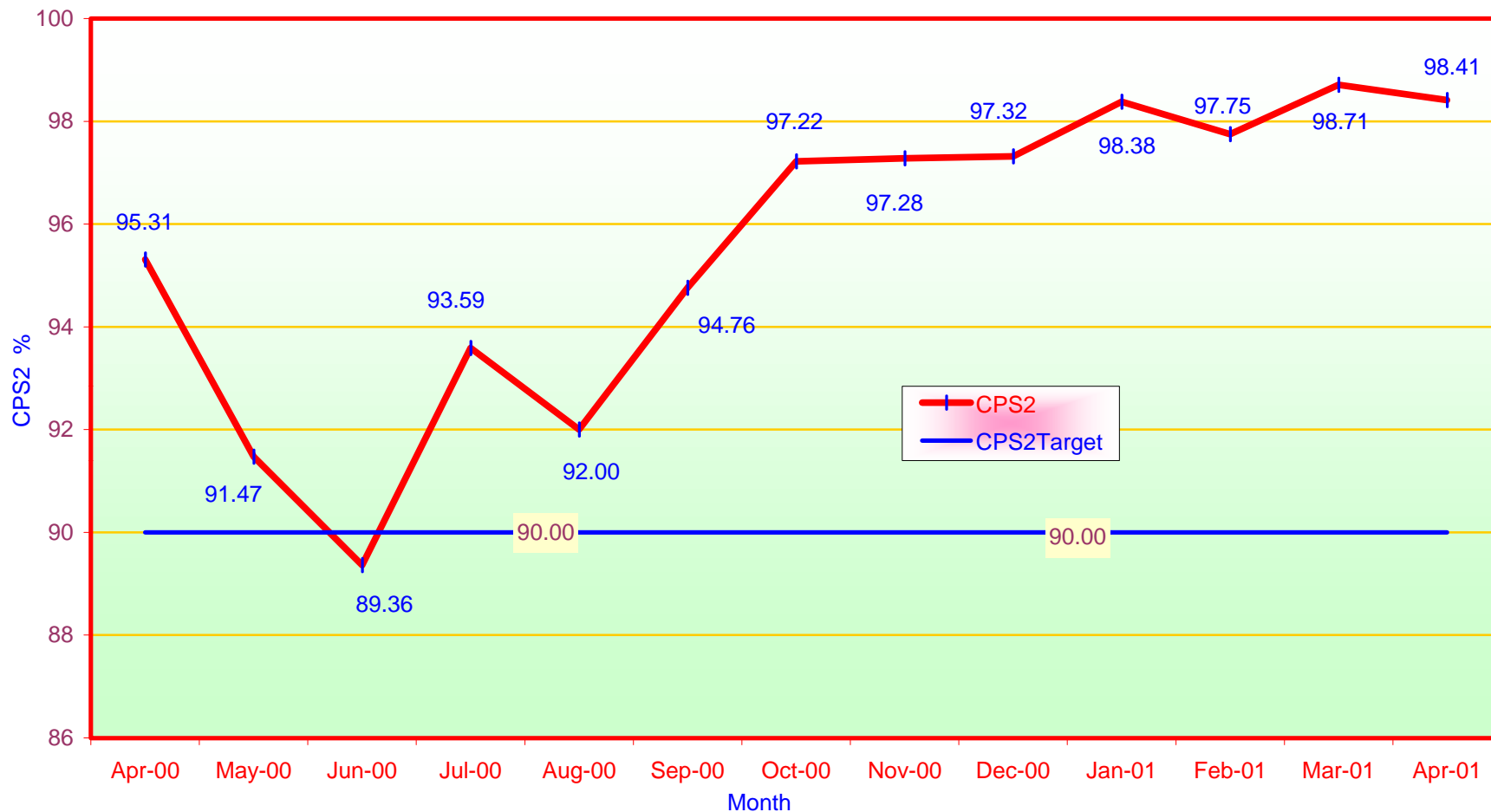
*May 24, 2001*

*Chuck King, NYISO VP Market Services*

# Market Operations Report

- 1) Reliability Indicators
  - *NERC Criteria (CPS-2 Curve)*
- 2) Market Performance Highlights
- 3) NY/NE/PJM Price Comparisons

**NERC Control Performance Standard**  
**NYISO Compliance**  
**Year 2000/2001**

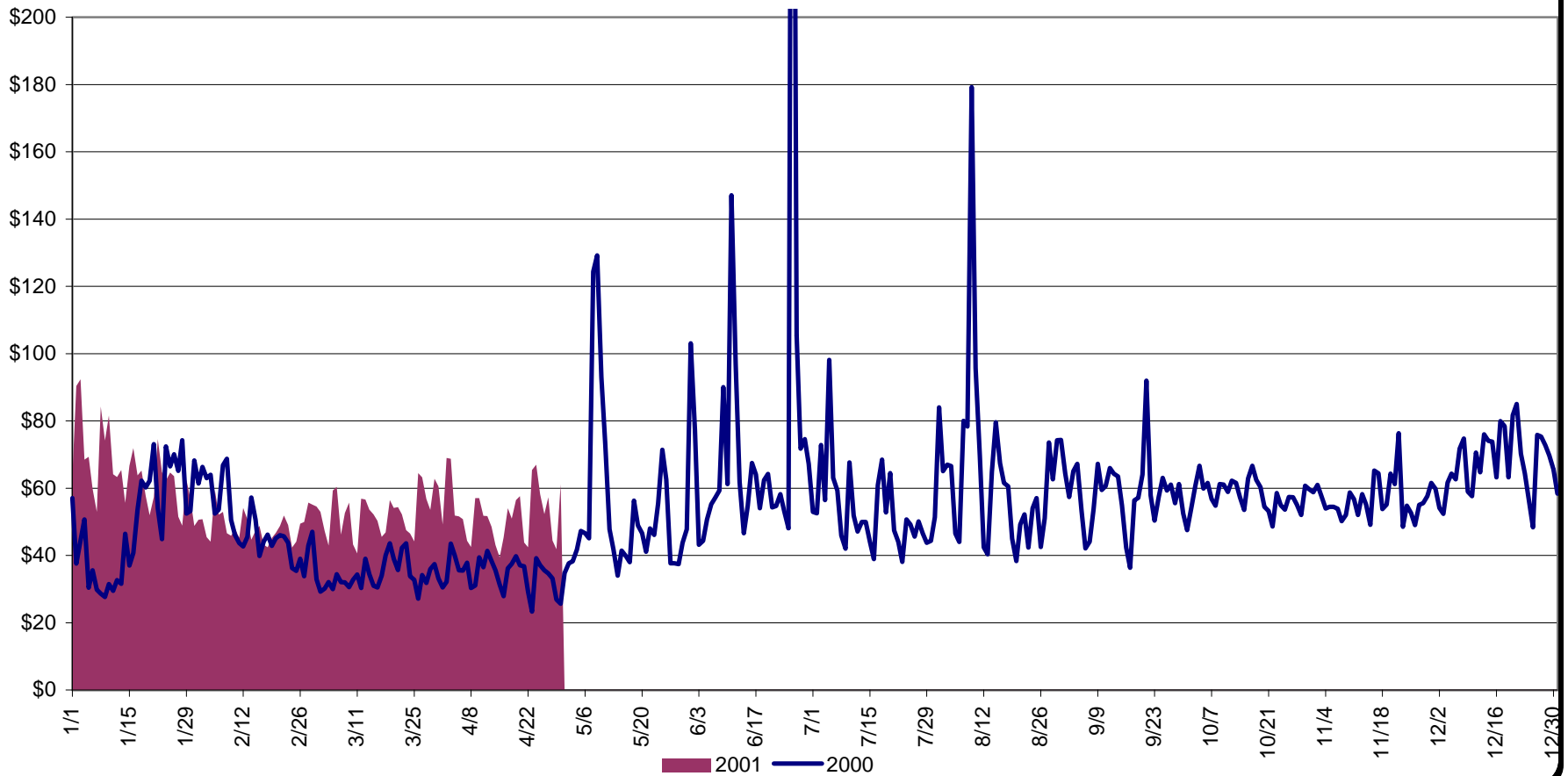


**CPS2 for Apr-01 =98.41% Compliance Threshold=90%**  
**CPS2 measures excessive unscheduled power flow resulting from large Area Control Error(ACE)**

# Average Daily NYISO - Administered Total Price (Energy & Ancillary Services)

2000 Annual Average \$57.81/MWH  
Jan to Apr 2000 Average \$42.03/MWH  
Jan to Apr 2001 Average \$55.68/MWH

June 26, 2000 Daily Average 414.14



### NYISO Markets 2001 Energy Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
<b><u>DAY AHEAD LBMP</u></b>												
Unweighted Price	\$56.41	\$42.09	\$46.94	\$45.53								
Standard Deviation	\$17.87	\$9.65	\$11.93	\$14.27								
Load Wtg.Price	\$58.34	\$43.25	\$48.23	\$47.48								
<b><u>BME * LBMP</u></b>												
Unweighted Price	\$54.40	\$47.43	\$53.87	\$56.37								
Standard Deviation	\$16.85	\$15.62	\$52.54	\$39.25								
Load Wtg.Price	\$55.95	\$48.86	\$55.98	\$59.22								
<b><u>REAL TIME LBMP</u></b>												
Unweighted Price	\$50.15	\$41.84	\$48.43	\$41.94								
Standard Deviation	\$19.32	\$22.21	\$35.68	\$28.52								
Load Wtg.Price	\$51.66	\$42.94	\$50.27	\$44.44								
Average Daily Energy Sendout/Month GWh	443	434	423	388								

### NYISO Markets 2000 Energy Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
<b><u>DAY AHEAD LBMP</u></b>												
Unweighted Price	\$38.64	\$37.09	\$29.24	\$29.55	\$37.73	\$57.96	\$40.66	\$50.18	\$46.47	\$51.91	\$50.07	\$58.34
Standard Deviation	\$16.64	\$12.75	\$8.22	\$9.57	\$16.65	\$67.35	\$18.96	\$37.40	\$15.52	\$12.64	\$9.67	\$18.03
Load Wtg.Price	\$40.09	\$38.31	\$30.05	\$30.60	\$39.80	\$64.23	\$43.32	\$54.34	\$48.50	\$53.46	\$51.13	\$60.81
<b><u>BME * LBMP</u></b>												
Unweighted Price	\$52.24	\$52.40	\$27.44	\$30.95	\$135.39	\$230.91	\$40.26	\$121.45	\$59.17	\$55.44	\$49.31	\$61.57
Standard Deviation	\$391.99	\$244.80	\$21.97	\$14.13	\$5,206.45	\$2,355.22	\$34.84	\$1,207.51	\$92.35	\$21.42	\$14.92	\$31.11
Load Wtg.Price	\$55.95	\$55.25	\$28.21	\$31.93	\$210.52	\$290.60	\$42.26	\$137.53	\$61.96	\$57.29	\$50.59	\$65.35
<b><u>REAL TIME LBMP</u></b>												
Unweighted Price	\$49.46	\$34.52	\$27.40	\$27.04	\$41.17	\$46.26	\$36.81	\$48.86	\$50.12	\$51.74	\$48.89	\$58.28
Standard Deviation	\$99.49	\$20.65	\$20.80	\$13.14	\$74.60	\$91.83	\$21.87	\$59.58	\$53.73	\$19.28	\$19.89	\$48.47
Load Wtg.Price	\$54.16	\$36.06	\$28.57	\$28.11	\$48.07	\$53.28	\$39.42	\$54.84	\$54.11	\$53.62	\$50.41	\$60.38
Average Daily Energy Sendout/Month GWh	444	431	404	391	400	456	450	468	432	399	415	450

\* Commonly referred as Hour Ahead Market (HAM)

## NYISO Markets 2001 Transactions

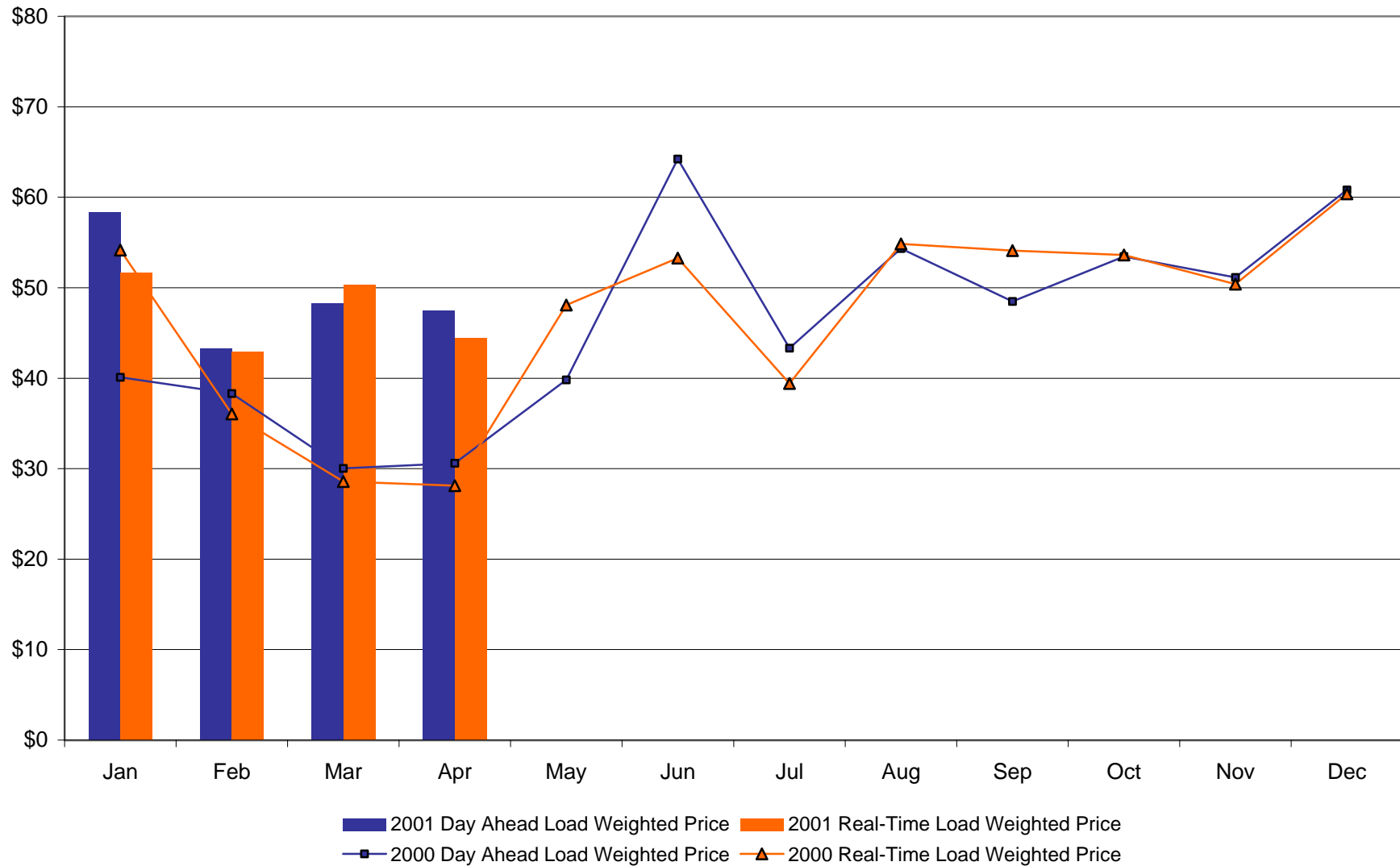
	January	February	March	April	May	June	July	August	September	October	November	December
<b><u>Transactions by Market</u></b>												
DAM LSE Internal LBMP Energy Sales	41%	39%	37%	36%								
DAM External TC LBMP Energy Sales	3%	2%	1%	2%								
DAM Bilateral - Internal Bilaterals	50%	51%	55%	55%								
DAM Bilateral - Import/Non-LBMP Market Bilaterals	1%	1%	0%	0%								
DAM Bilateral - Export/Non-LBMP Market Bilaterals	1%	1%	1%	1%								
DAM Bilateral - Wheel Through Bilaterals	4%	6%	5%	5%								
<b>Day Ahead Market</b>	100%	100%	100%	100%								
Balancing Energy LSE Internal LBMP Energy Sales	63%	13%	97%	-1%								
Balancing Energy External TC LBMP Energy Sales	56%	81%	26%	39%								
Balancing Energy Bilateral - Internal Bilaterals	-8%	-1%	-7%	138%								
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	2%	23%	11%	6%								
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	0%	0%	0%	0%								
Balancing Energy Bilateral - Wheel Through Bilaterals	-13%	-17%	-27%	-82%								
<b>Balancing Energy *</b>	100%	100%	100%	100%								
<b><u>Transactions Summary</u></b>												
LBMP	45%	42%	40%	38%								
Internal Bilaterals	49%	51%	54%	57%								
Import Bilaterals	1%	1%	1%	0%								
Export Bilaterals	1%	1%	1%	1%								
Wheels Through	4%	5%	4%	4%								
<b><u>Market Share of Total Load</u></b>												
<b>Day Ahead Market</b>	97.71%	98.07%	98.03%	98.65%								
<b>Balancing Energy *</b>	2.29%	1.93%	1.97%	1.35%								
<b>Total MWH</b>	14,684,835	13,195,754	13,898,304	11,960,273								

## NYISO Markets 2000 Transactions

	January	February	March	April	May	June	July	August	September	October	November	December
<b><u>Transactions Summary</u></b>												
LBMP	30%	31%	35%	37%	42%	44%	45%	45%	50%	48%	43%	47%
Internal Bilaterals	64%	63%	60%	58%	52%	51%	50%	51%	45%	48%	51%	48%
Import Bilaterals	2%	2%	2%	2%	1%	1%	1%	1%	2%	1%	1%	1%
Export Bilaterals	1%	1%	1%	1%	1%	1%	2%	1%	1%	2%	2%	0%
Wheels Through	2%	3%	1%	1%	4%	3%	3%	2%	2%	1%	3%	3%
<b><u>Market Share of Total Load</u></b>												
<b>Day Ahead Market</b>	97.97%	97.85%	97.25%	96.18%	98.52%	98.70%	101.33%	102.12%	96.98%	98.29%	96.11%	96.22%
<b>Balancing Energy *</b>	2.03%	2.15%	2.75%	3.82%	1.48%	1.30%	-1.33%	-2.12%	3.02%	1.71%	3.89%	3.78%
<b>Total MWH</b>	13,979,215	12,933,930	12,616,286	11,800,570	12,940,566	13,964,207	14,199,309	15,011,759	13,321,117	12,516,751	12,635,197	14,740,664

\* Balancing Energy: Load(MW) purchased at Real Time LBMP.

## NYISO Monthly Average Internal LBMPs 2000 - 2001



## NYISO Markets 2001 Ancillary Service Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
<b><u>ANCILLARY SERVICES Day Ahead Market</u></b>												
<b>10 Min Spin</b>												
Unweighted Price	\$2.71	\$2.22	\$3.41	\$2.73								
Standard Deviation	\$1.67	\$0.56	\$5.48	\$3.79								
<b>10 Min Non Synch</b>												
Unweighted Price	\$1.69	\$2.19	\$2.22	\$1.84								
Standard Deviation	\$0.78	\$0.60	\$0.63	\$0.79								
<b>30 Min</b>												
Unweighted Price	\$0.60	\$0.89	\$0.79	\$0.75								
Standard Deviation	\$0.40	\$0.76	\$0.33	\$0.30								
<b>Regulation</b>												
Unweighted Price	\$7.80	\$8.81	\$9.13	\$9.25								
Standard Deviation	\$5.50	\$8.56	\$9.57	\$13.27								
<b><u>ANCILLARY SERVICES BME *</u></b>												
<b>10 Min Spin</b>												
Unweighted Price	\$3.19	\$2.85	\$3.95	\$3.74								
Standard Deviation	\$3.95	\$4.04	\$7.67	\$6.36								
<b>10 Min Non Synch</b>												
Unweighted Price	\$1.70	\$2.16	\$2.39	\$1.93								
Standard Deviation	\$0.92	\$0.74	\$4.40	\$0.96								
<b>30 Min</b>												
Unweighted Price	\$0.88	\$0.94	\$1.26	\$0.86								
Standard Deviation	\$0.84	\$0.86	\$4.46	\$0.89								
<b>Regulation</b>												
Unweighted Price	\$5.70	\$7.26	\$6.68	\$6.62								
Standard Deviation	\$5.97	\$7.83	\$6.69	\$3.73								

\* Commonly referred as Hour Ahead Market (HAM)

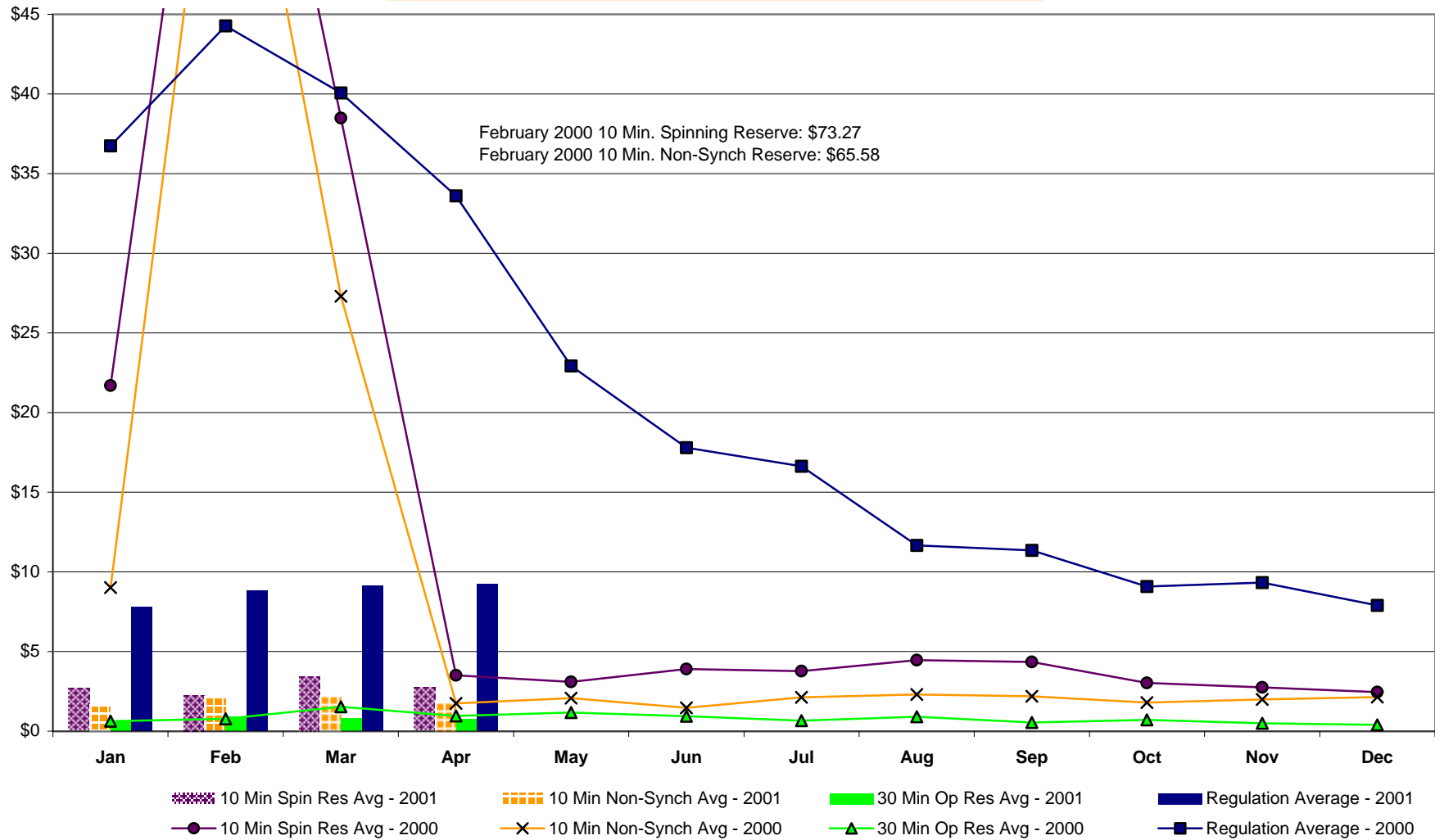


## NYISO Markets 2000 Ancillary Services Statistics

	January	February	March	April	May	June	July	August	September	October	November	December
<b><u>ANCILLARY SERVICES Day Ahead Market</u></b>												
<b>10 Min Spin</b>												
Price	\$21.70	\$73.27	\$38.48	\$3.51	\$3.10	\$3.89	\$3.76	\$4.45	\$4.34	\$3.03	\$2.74	\$2.45
Standard Deviation	\$26.67	\$32.24	\$34.05	\$5.74	\$5.31	\$4.88	\$2.61	\$5.63	\$6.50	\$4.95	\$3.81	\$0.76
<b>10 Min Non Synch</b>												
Price	\$9.01	\$65.58	\$27.31	\$1.75	\$2.07	\$1.47	\$2.12	\$2.30	\$2.18	\$1.80	\$1.99	\$2.14
Standard Deviation	\$0.39	\$0.22	\$6.39	\$0.45	\$5.07	\$2.52	\$1.35	\$2.02	\$0.21	\$0.62	\$0.58	\$0.57
<b>30 Min</b>												
Price	\$0.62	\$0.77	\$1.53	\$0.95	\$1.17	\$0.93	\$0.66	\$0.91	\$0.55	\$0.70	\$0.50	\$0.39
Standard Deviation	\$19.20	\$24.13	\$16.17	\$0.16	\$5.12	\$2.51	\$1.39	\$2.14	\$0.30	\$0.27	\$0.39	\$0.39
<b>Regulation</b>												
Price	\$36.75	\$44.27	\$40.07	\$33.61	\$22.93	\$17.79	\$16.63	\$11.66	\$11.35	\$9.08	\$9.32	\$7.89
Standard Deviation	\$42.26	\$21.99	\$23.72	\$35.08	\$11.18	\$9.52	\$9.17	\$5.13	\$10.38	\$6.96	\$7.93	\$5.73
<b><u>ANCILLARY SERVICES BME *</u></b>												
<b>10 Min Spin</b>												
Price	\$25.38	\$135.38	\$30.76	\$2.83	\$10.96	\$4.58	\$3.60	\$5.58	\$5.64	\$6.02	\$9.05	\$2.87
Standard Deviation	\$37.34	\$798.48	\$31.12	\$6.32	\$27.38	\$6.74	\$5.68	\$8.40	\$8.54	\$9.66	\$12.05	\$3.37
<b>10 Min Non Synch</b>												
Price	\$20.37	\$125.72	\$25.45	\$1.97	\$10.31	\$1.87	\$1.77	\$1.71	\$2.07	\$1.66	\$1.86	\$1.98
Standard Deviation	\$33.81	\$799.03	\$23.67	\$4.51	\$27.41	\$3.77	\$3.77	\$1.74	\$0.51	\$0.90	\$0.78	\$1.07
<b>30 Min</b>												
Price	\$0.90	\$12.13	\$8.77	\$0.96	\$9.37	\$1.16	\$0.71	\$0.58	\$0.46	\$0.49	\$0.39	\$0.60
Standard Deviation	\$2.35	\$26.61	\$23.48	\$4.55	\$27.70	\$3.84	\$3.79	\$1.67	\$0.59	\$0.60	\$0.63	\$1.01
<b>Regulation</b>												
Price	\$21.07	\$20.84	\$19.25	\$24.34	\$20.26	\$18.15	\$13.31	\$10.16	\$10.46	\$8.28	\$7.94	\$6.19
Standard Deviation	\$26.50	\$19.49	\$19.55	\$33.72	\$11.44	\$39.80	\$9.66	\$8.06	\$11.39	\$8.82	\$8.50	\$5.90

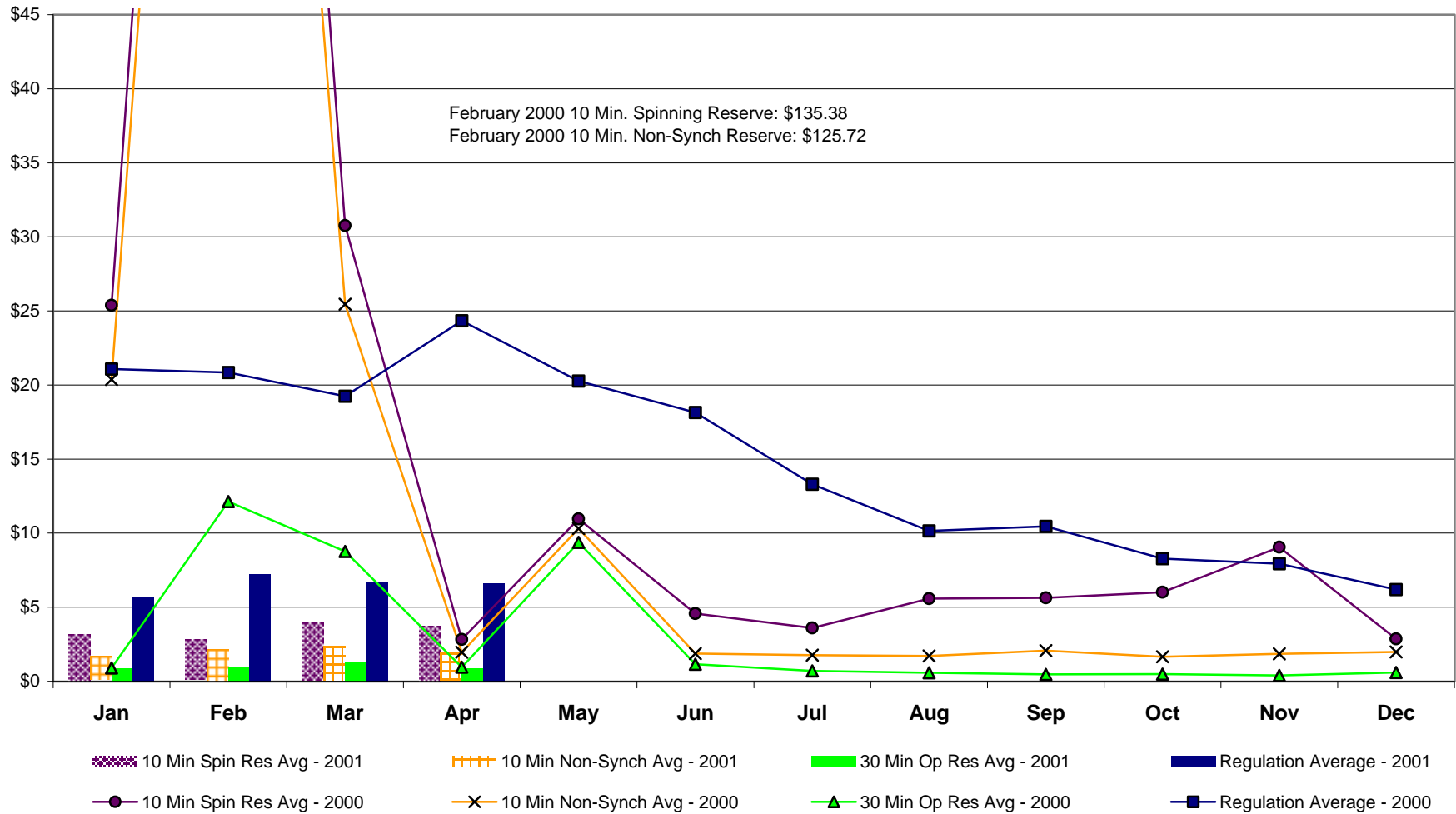
\* Commonly referred as Hour Ahead Market

## NYISO Monthly Average Ancillary Service Prices Day Ahead Market 2000 - 2001



# NYISO Monthly Average Ancillary Service Prices

BME \* 2000 - 2001



\* Commonly referred as Hour Ahead Market (HAM)

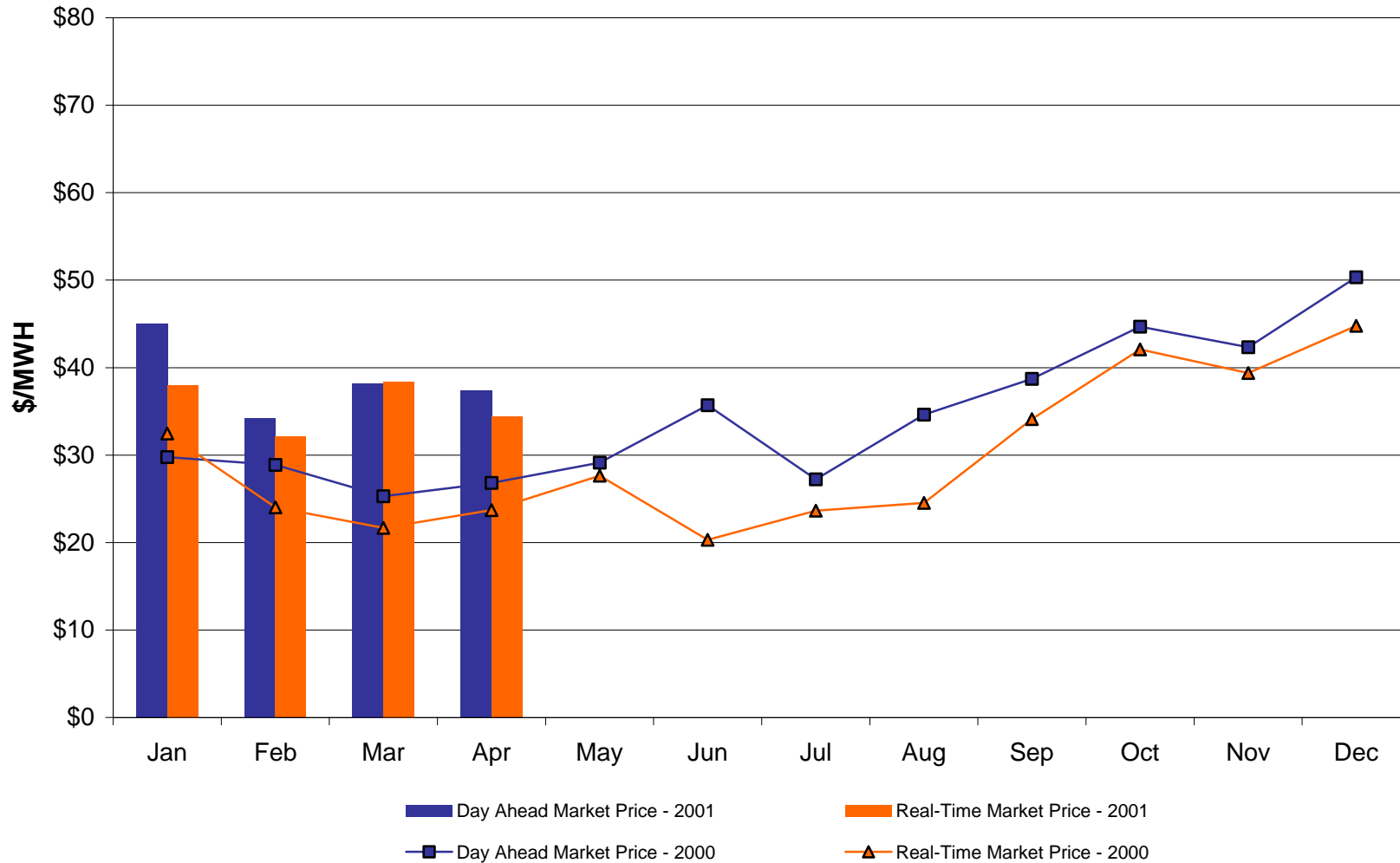
**April, 2001 Zonal Statistics for NYISO**

	<b>WEST Zone A</b>	<b>CENTRAL Zone C</b>	<b>MOHAWK VALLEY Zone E</b>	<b>CAPITAL Zone F</b>	<b>HUDSON VALLEY Zone G</b>	<b>GENESEE Zone B</b>	<b>LONG ISLAND Zone K</b>	<b>NORTH Zone D</b>	<b>NEW YORK CITY Zone J</b>	<b>MILLWOOD Zone H</b>	<b>DUNWOODIE Zone I</b>
<b><u>DAY AHEAD LBMP</u></b>											
Unweighted Price	\$37.34	\$39.51	\$40.09	\$43.12	\$44.07	\$37.73	\$51.87	\$38.83	\$51.72	\$43.67	\$44.44
Standard Deviation	\$38.22	\$11.63	\$11.54	\$13.66	\$14.55	\$11.26	\$14.72	\$10.59	\$20.57	\$14.80	\$15.13
<b><u>BME * LBMP</u></b>											
Unweighted Price	\$38.61	\$42.23	\$43.26	\$47.86	\$46.83	\$39.66	\$68.92	\$42.14	\$73.43	\$46.75	\$47.53
Standard Deviation	\$12.67	\$13.52	\$14.10	\$38.29	\$17.05	\$12.87	\$156.32	\$13.61	\$83.66	\$18.97	\$19.14
<b><u>REAL TIME LBMP</u></b>											
Unweighted Price	\$32.13	\$33.57	\$34.14	\$37.31	\$37.39	\$32.92	\$53.96	\$33.26	\$49.43	\$40.61	\$41.22
Standard Deviation	\$15.87	\$16.54	\$16.83	\$20.42	\$19.89	\$16.12	\$46.54	\$16.39	\$51.83	\$44.96	\$45.10

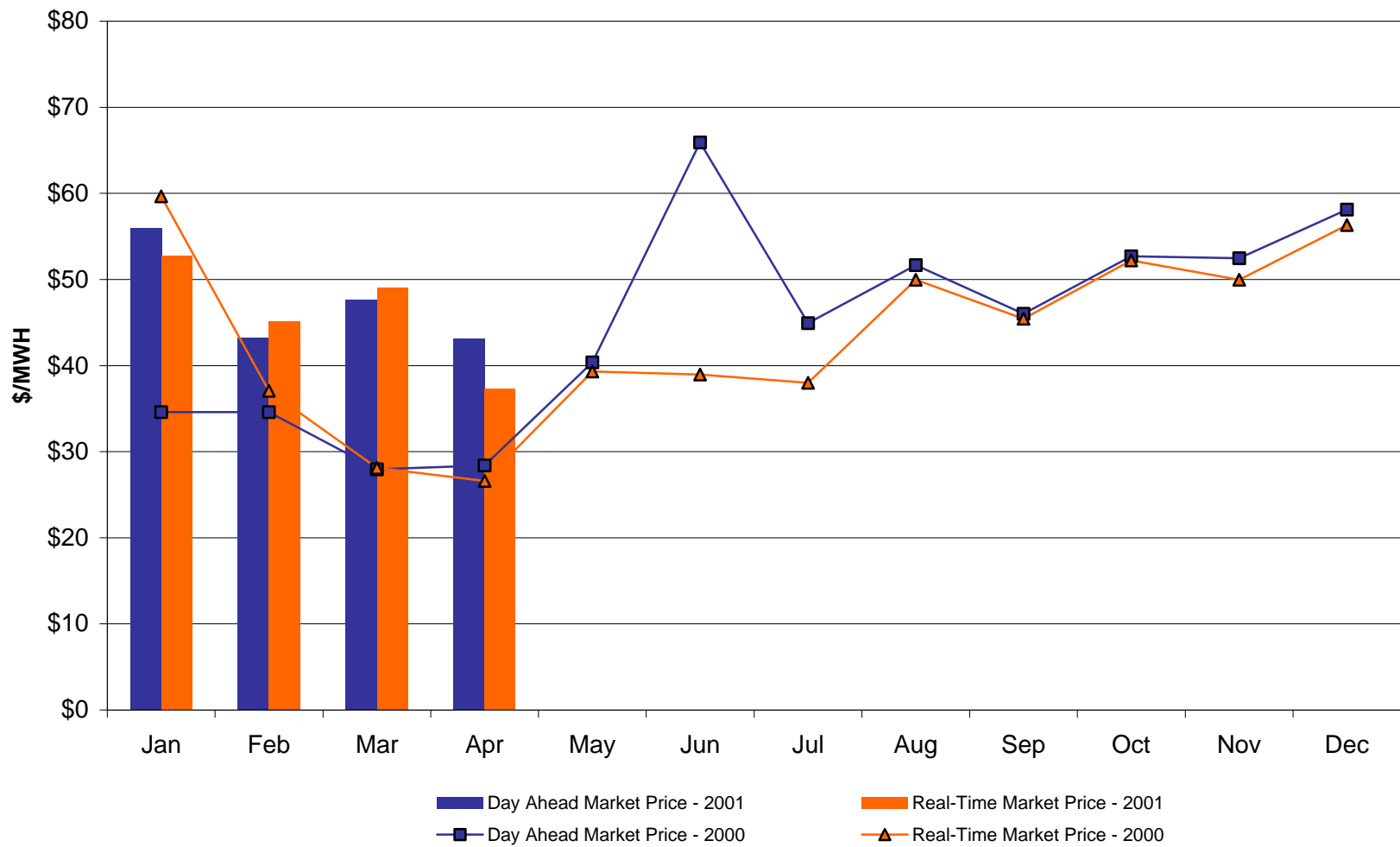
	<b>HYDRO QUEBEC Zone M</b>	<b>NEW ENGLAND Zone N</b>	<b>ONTARIO HYDRO Zone O</b>	<b>PJM Zone P</b>
<b><u>DAY AHEAD LBMP</u></b>				
Unweighted Price	\$38.77	\$44.91	\$36.91	\$38.18
Standard Deviation	\$10.52	\$13.72	\$10.93	\$12.39
<b><u>BME * LBMP</u></b>				
Unweighted Price	\$42.46	\$61.98	\$38.51	\$40.70
Standard Deviation	\$17.09	\$160.58	\$21.30	\$22.96
<b><u>REAL TIME LBMP</u></b>				
Unweighted Price	\$34.40	\$39.82	\$33.31	\$33.77
Standard Deviation	\$19.24	\$44.13	\$23.71	\$24.07

\* Commonly referred Hour Ahead Market (HAM)

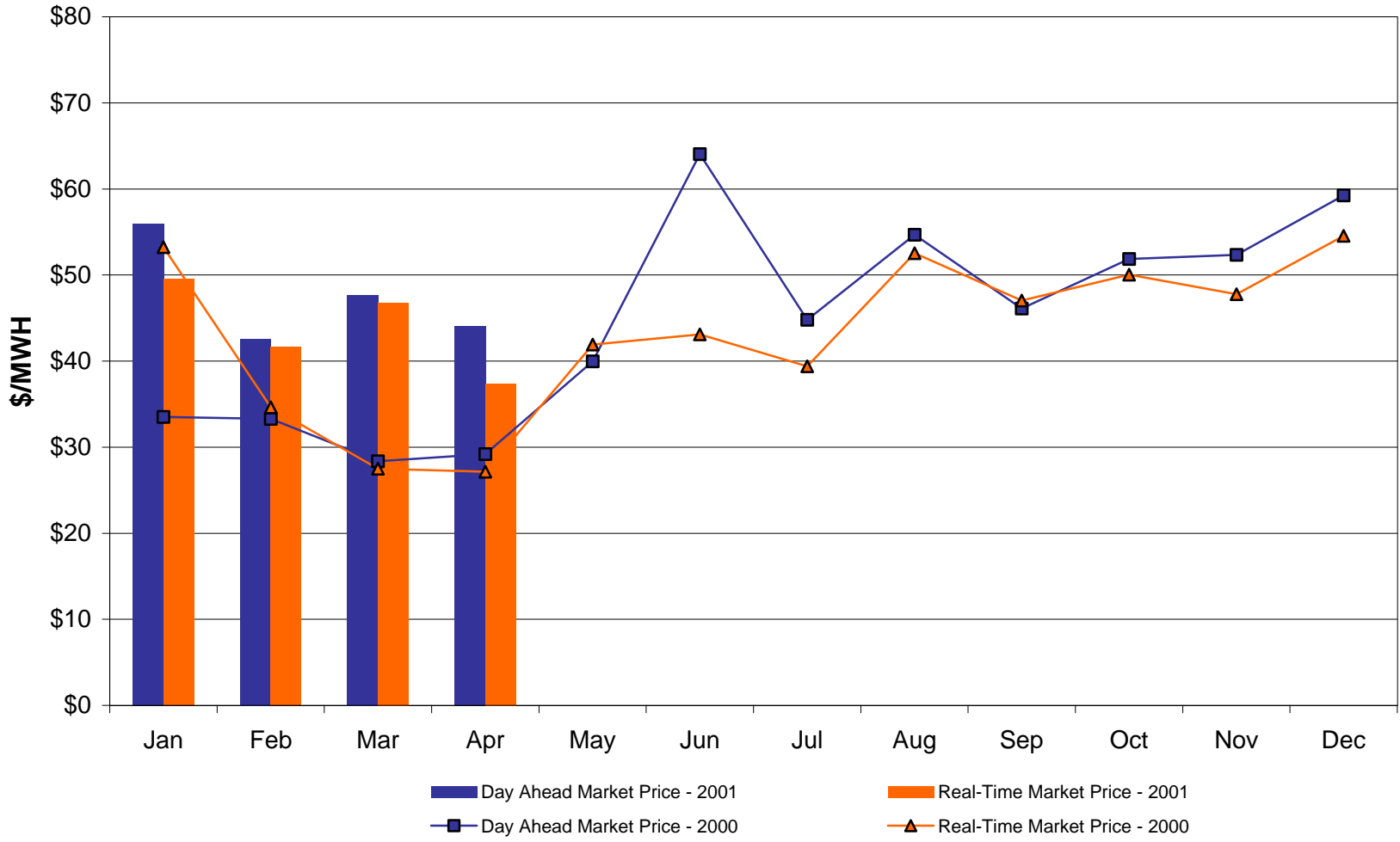
## West Zone A Monthly Average LBMP Prices 2000 - 2001



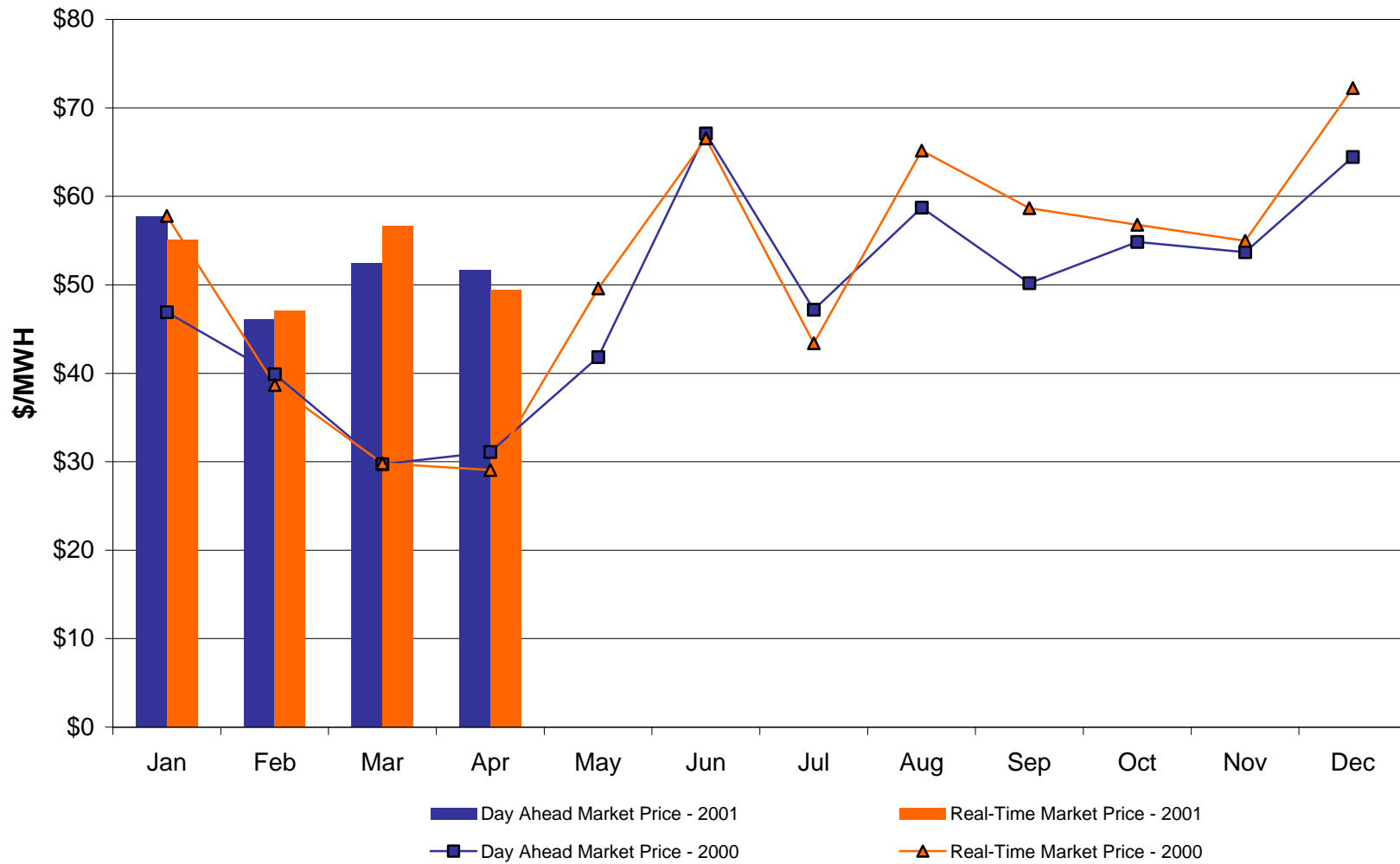
## Capital Zone F Monthly Average LBMP Prices 2000 - 2001



## Hudson Valley Zone G Monthly Average LBMP Prices 2000 - 2001

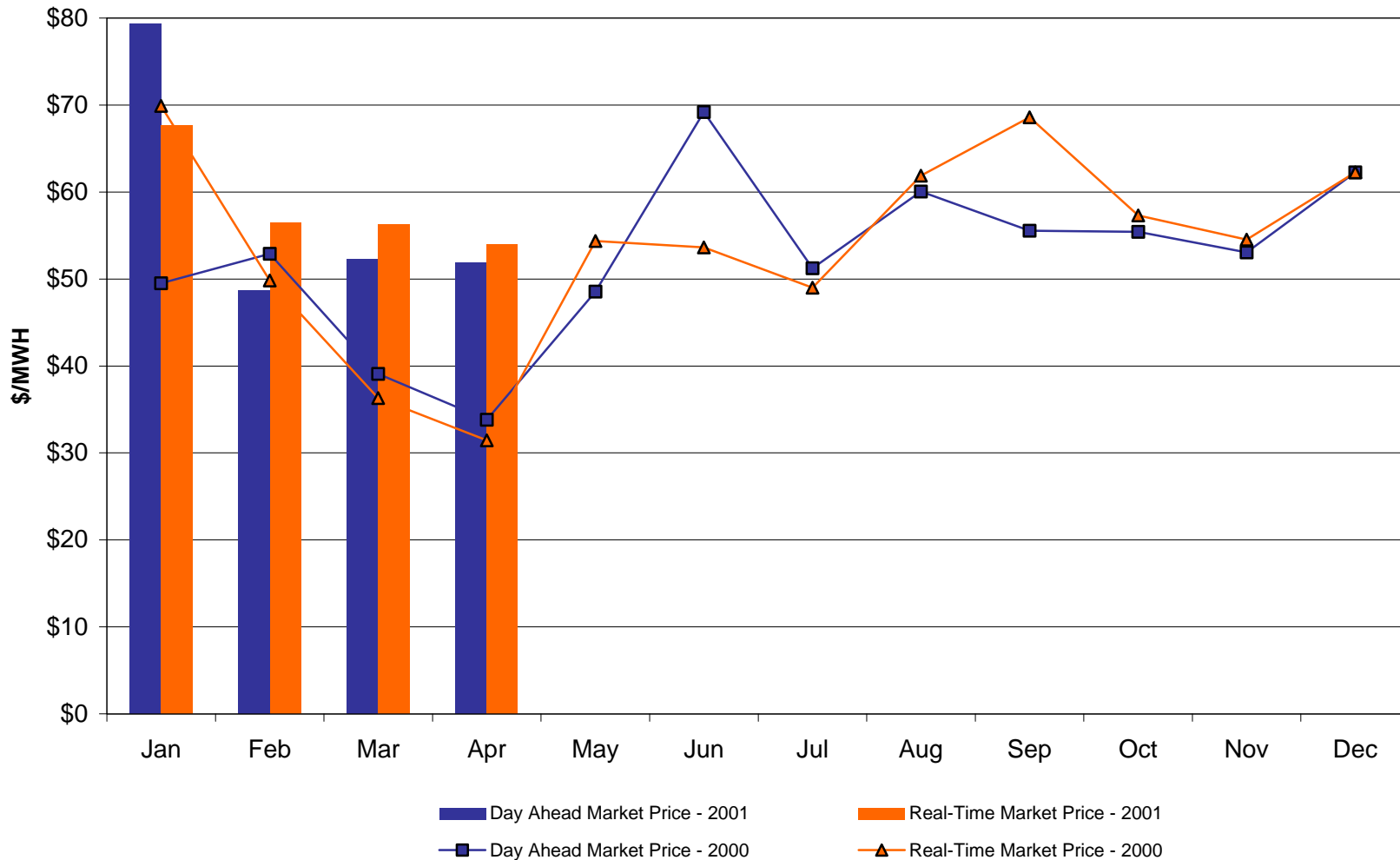


## NYC Zone J Monthly Average LBMP Prices 2000 - 2001

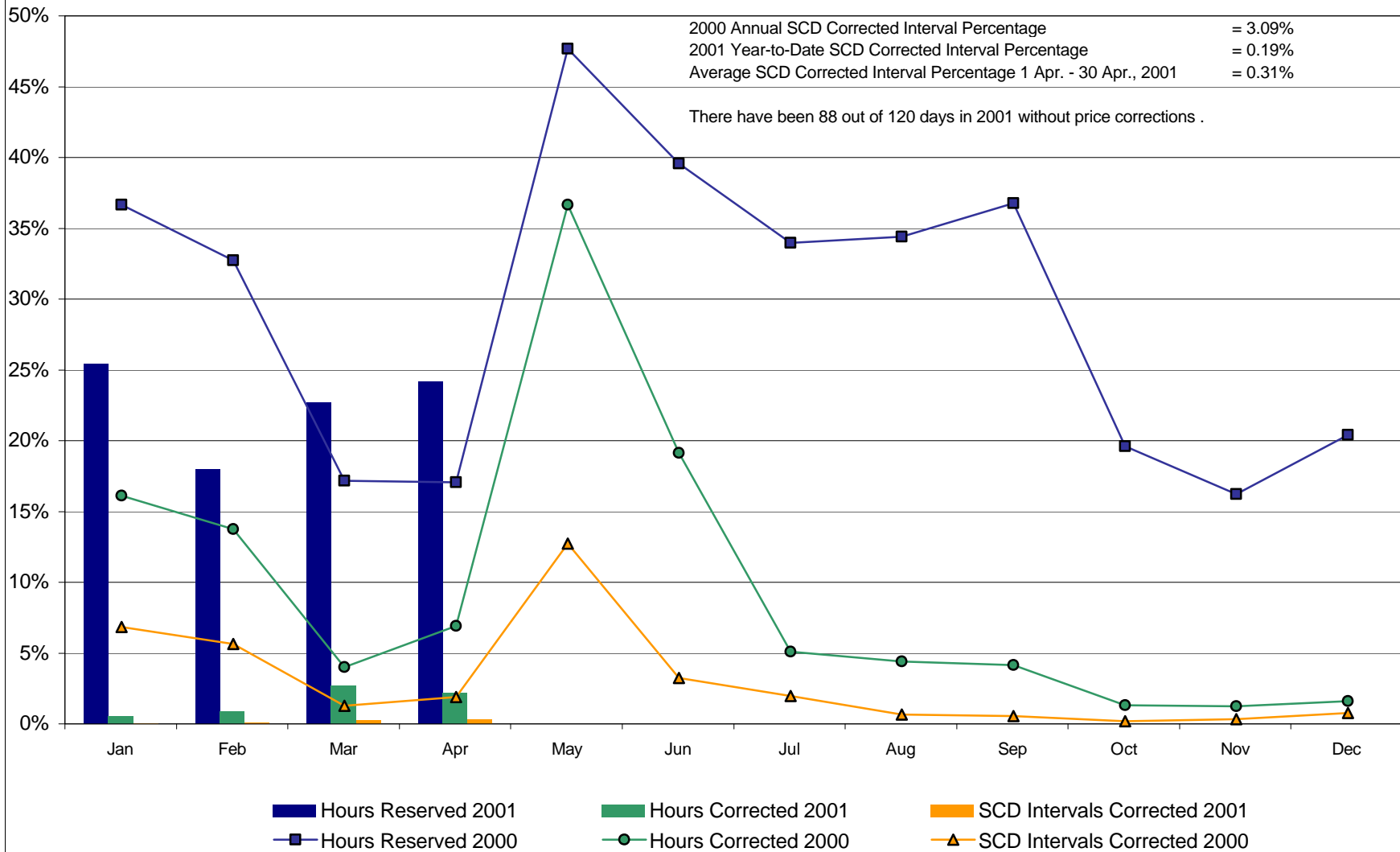




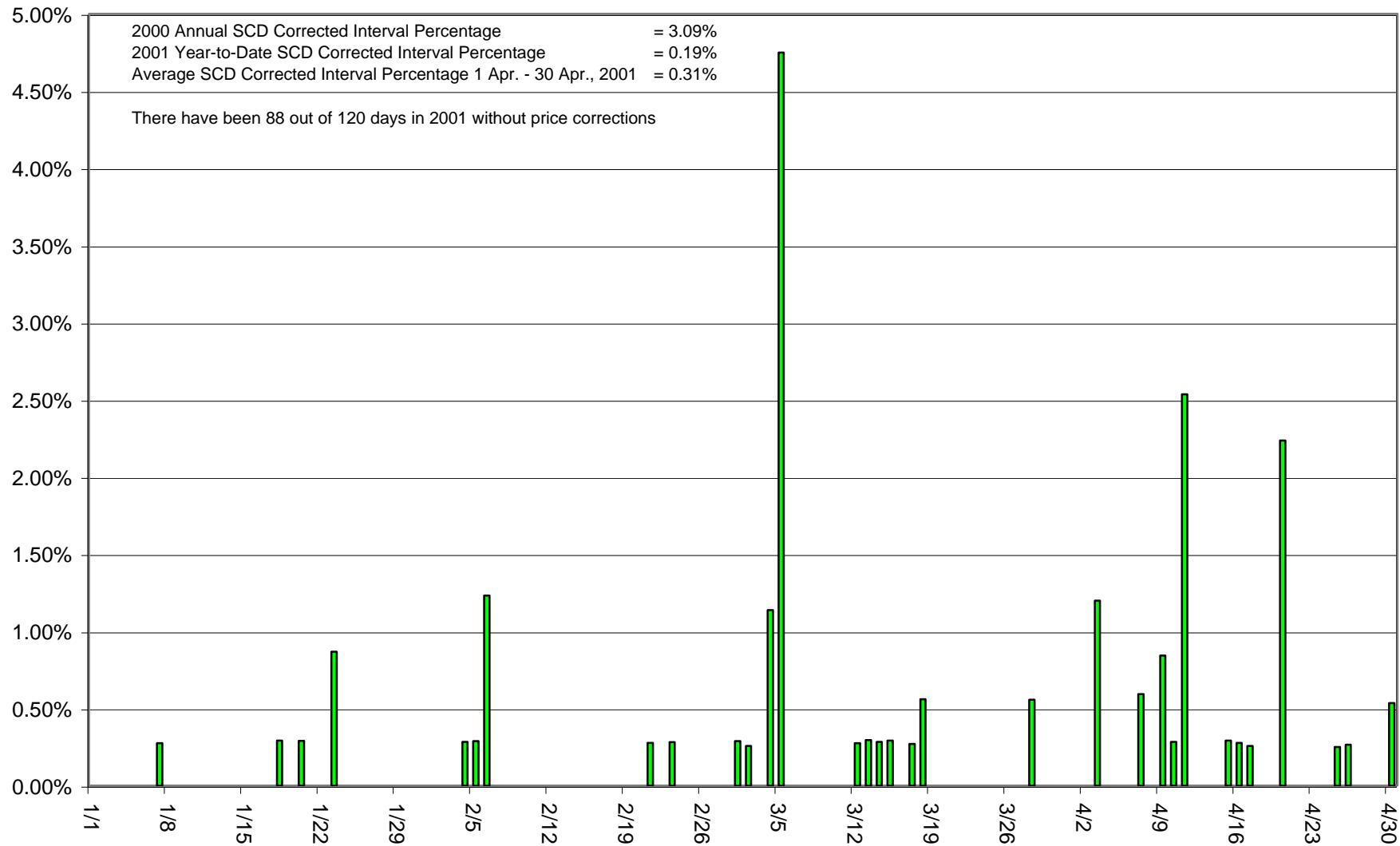
## Long Island Zone K Monthly Average LBMP Prices 2000 - 2001



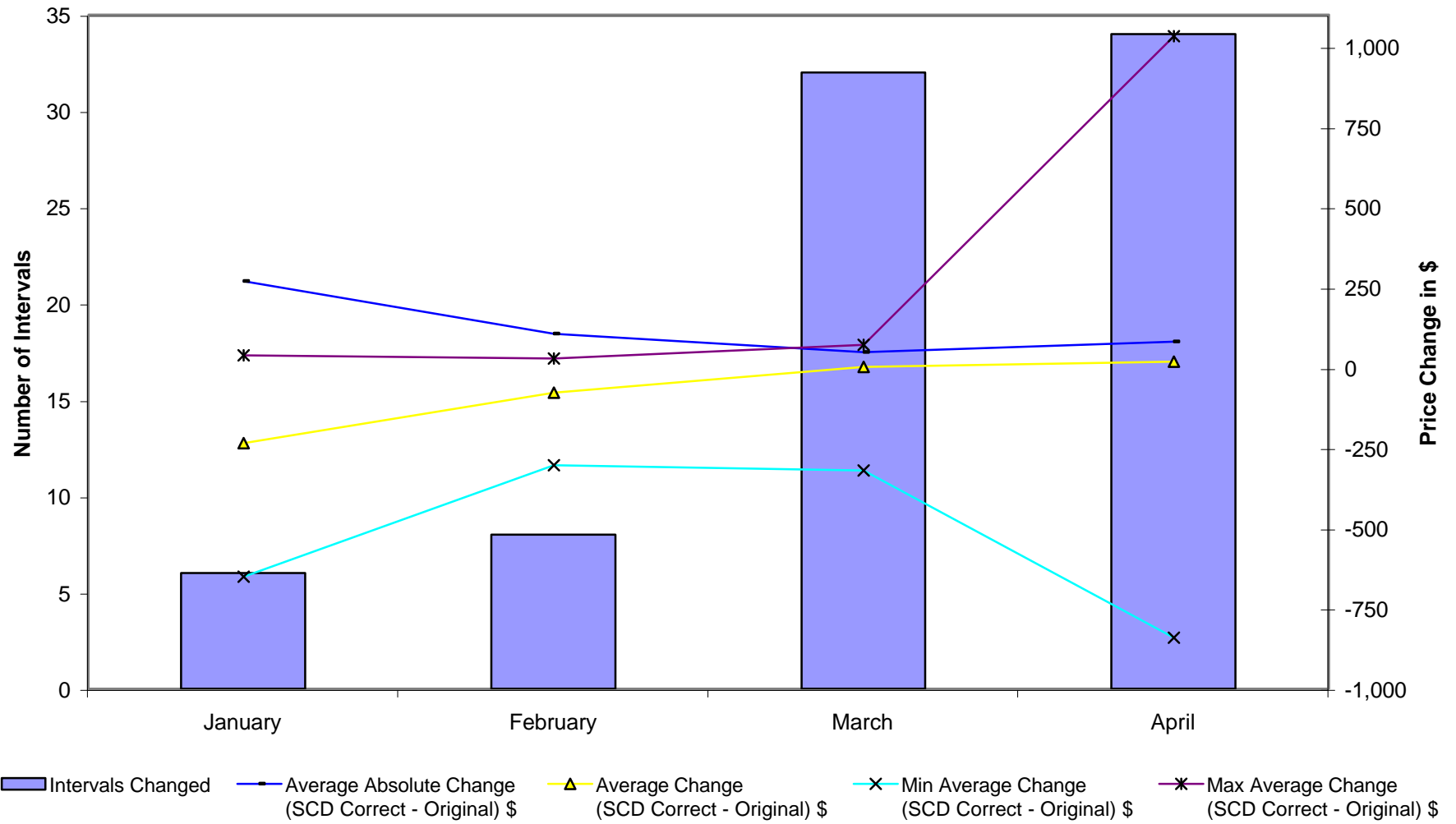
## Percentage of Real-Time Corrections



### Percentage of SCD Intervals Needing Correction (01/1/01 - 04/30/01)

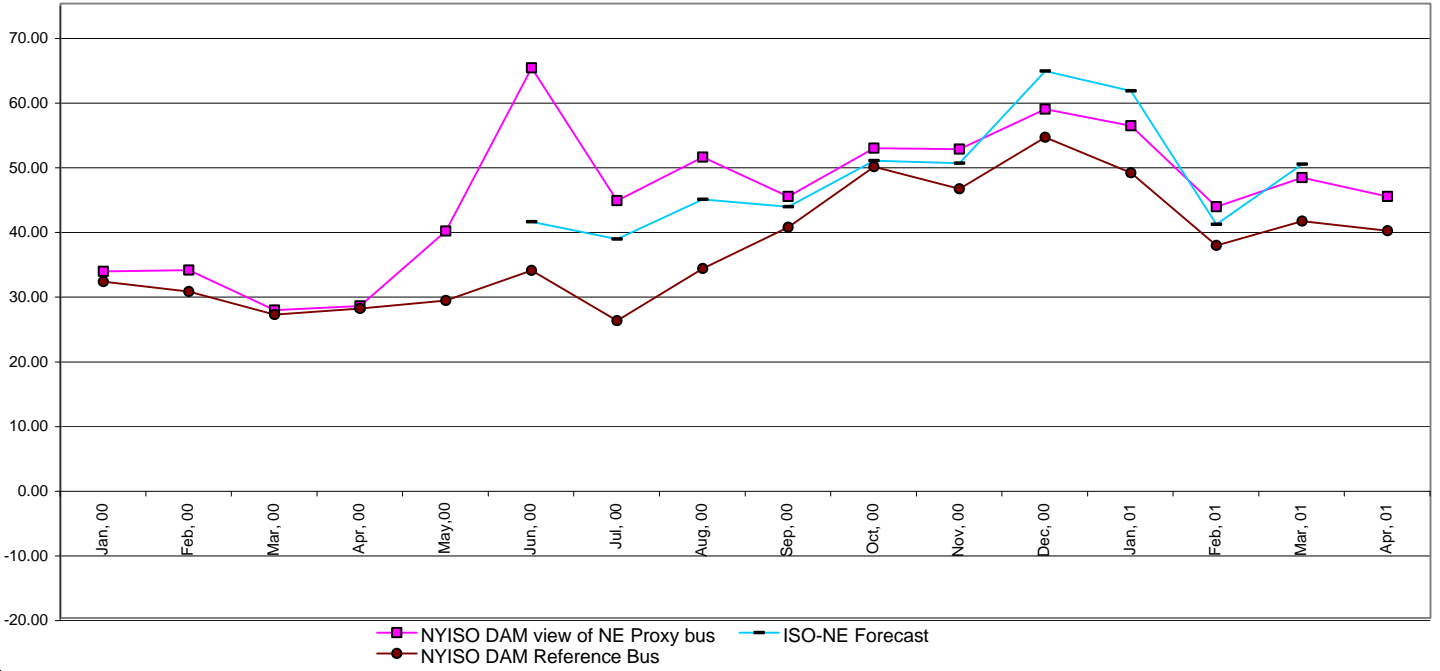


### SCD Price Corrections 2001 - Magnitude and Count (Excludes intervals with ECA-B only corrections)

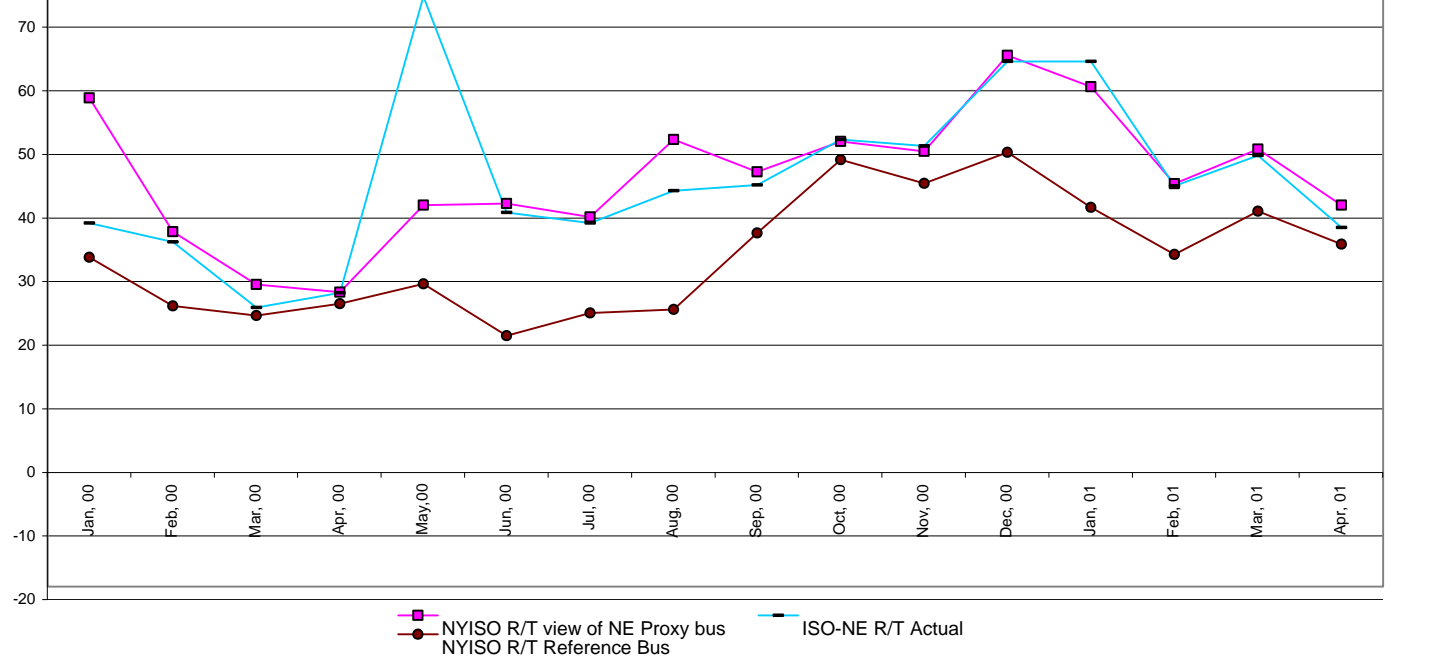


# External Comparision ISO-NE

## Day Ahead Market External Zone Comparision - ISO-NE only



## Real Time External Zone Comparision - ISO-NE only

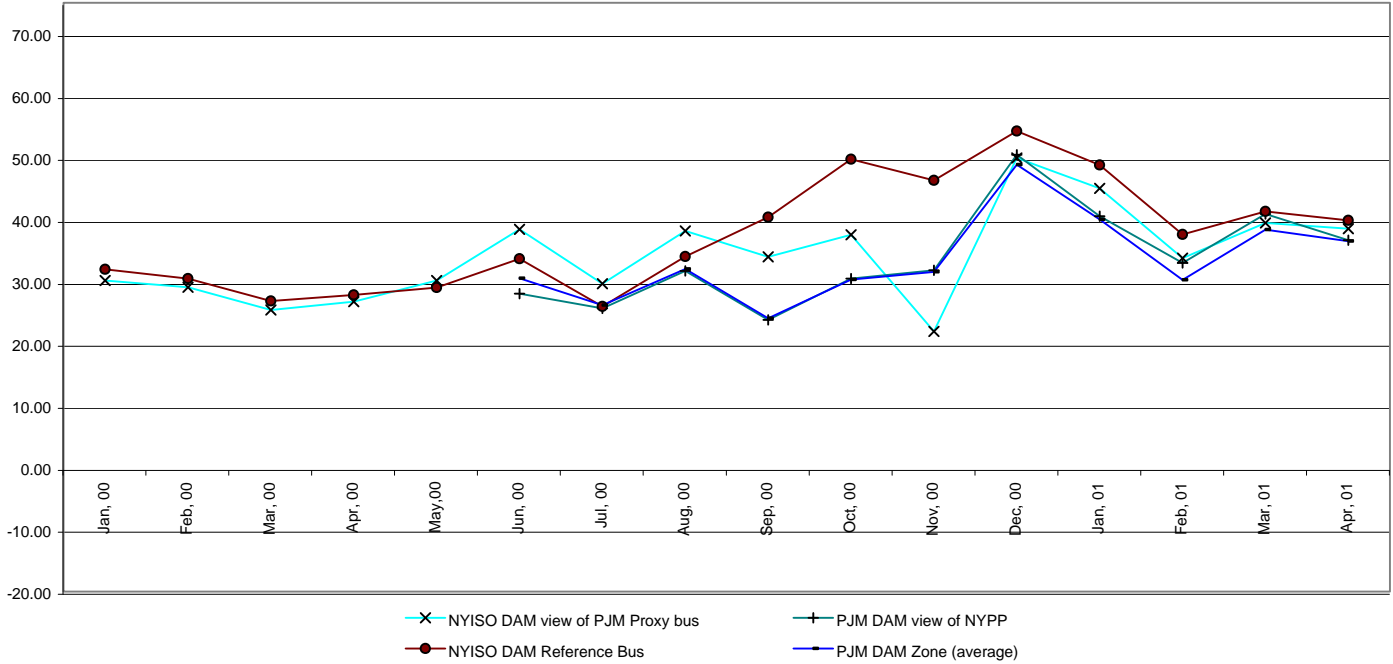


Note:

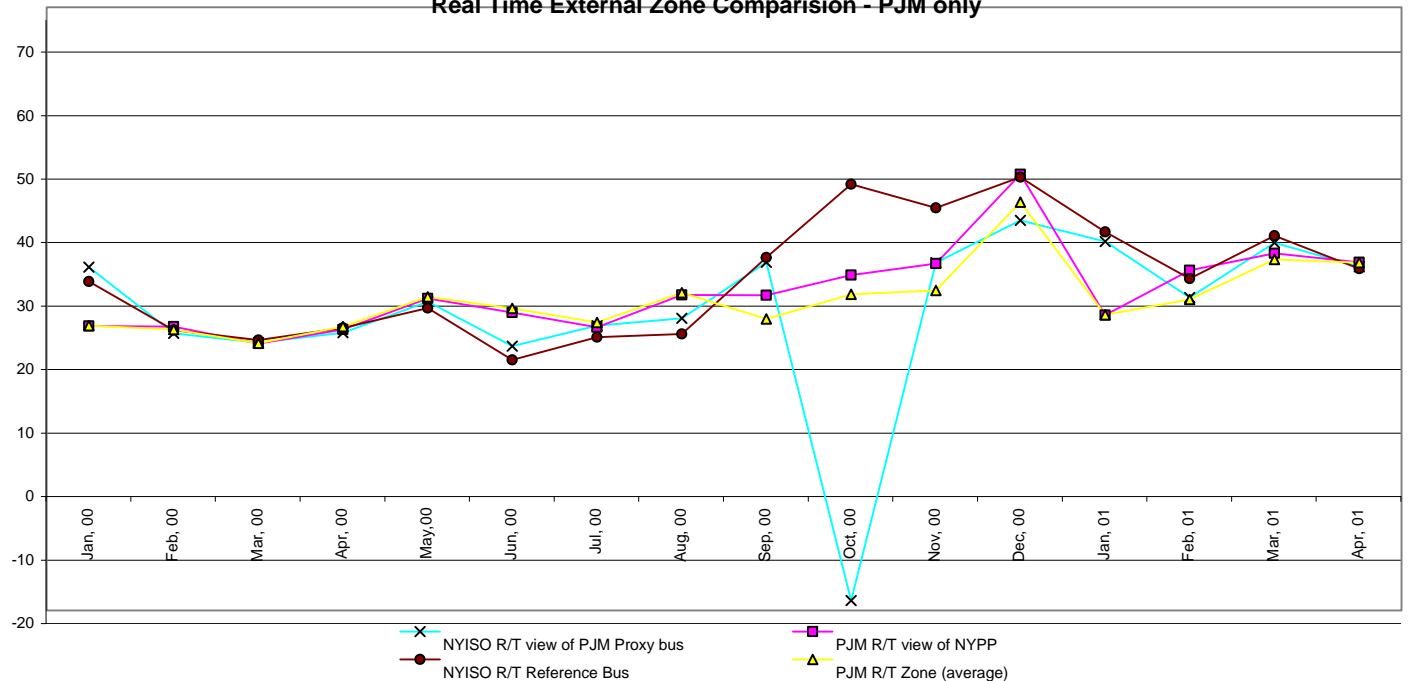
- PJM DAM began 6/1/00
- After 4/1/01 PJM will consolidate NYPP-E and NYPP-W interfaces
- ISO-NE Forecast posting began 6/1/2000
- ISO-NE Forecast is an advisory posting @ 18:00 day before
- ISO-NE Forecast April 2001 not yet available

# External Comparision PJM

### Day Ahead Market External Zone Comparison - PJM only



### Real Time External Zone Comparison - PJM only



Note:

- PJM DAM began 6/1/00
- After 4/1/01 PJM will consolidate NYPP-E and NYPP-W interfaces
- ISO-NE Forecast posting began 6/1/2000
- ISO-NE Forecast is an advisory posting @ 18:00 day before
- ISO-NE Forecast April 2001 not yet available