

NYISO Market Operations Report

*Business Issues Committee Meeting
May 7, 2003*

Agenda #4

Report Items

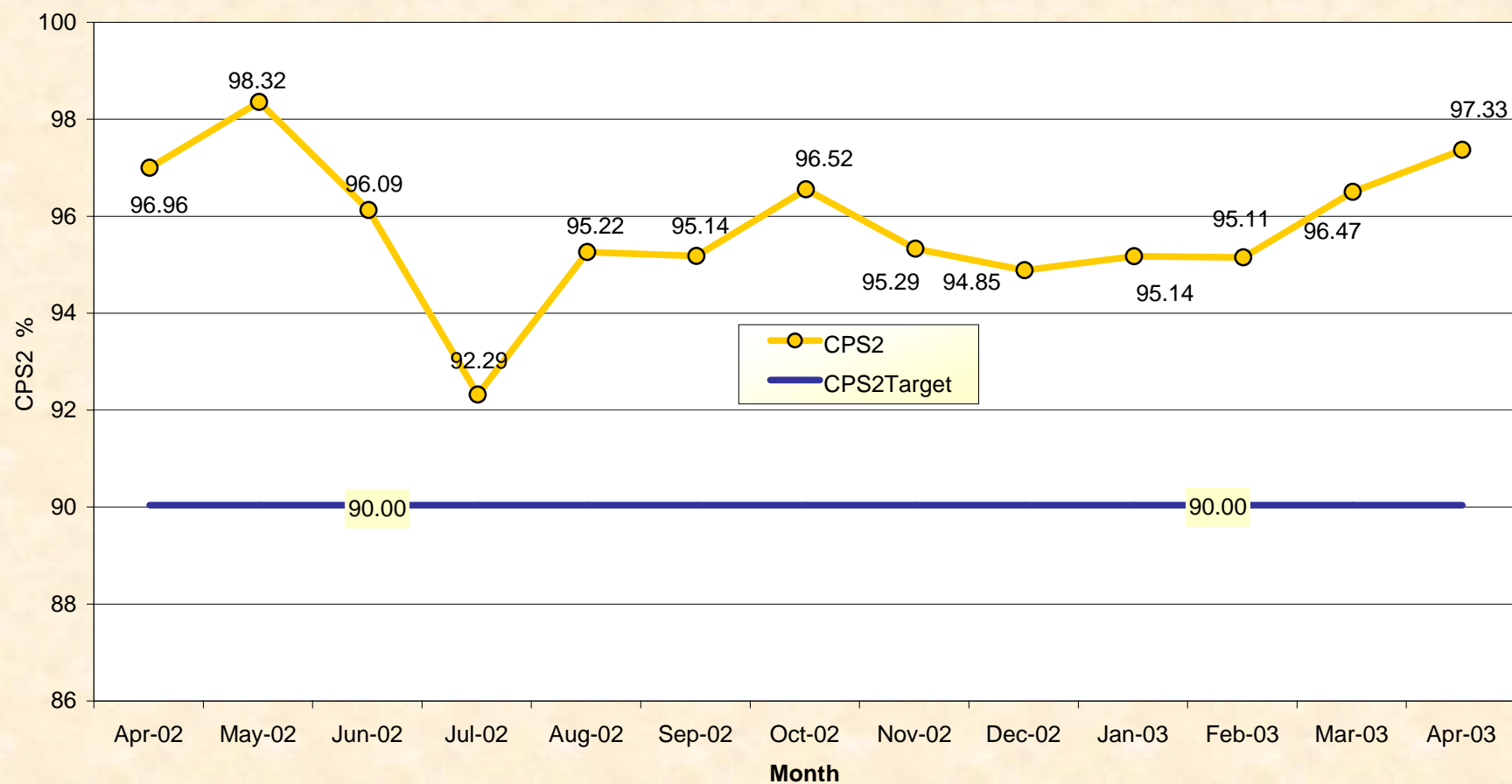
1) Reliability Indicators

- *NERC Criteria (CPS-2 Curve)*

2) Market Performance Highlights

NERC Control Performance Standard

NYISO Compliance
Year 2002/2003



CPS2 for April = 97.33% Compliance Threshold = 90%
CPS2 measures excessive unscheduled power flow resulting from large Area Control Error (ACE)

April 2003

NYISO Market Performance Highlights

- Total monthly energy prices dropped by 29% between March and April
- Uplift for April increased somewhat, tracking historical seasonal trends
- Price reservation/corrections rose sharply in April, drivers include:
 - Zonal NYC Generator Modeling errors
 - OSS deployment in April
- Internal procedures and software implementation coordination has been improved to reduce price reservations

FRP Confirmation / Trust Relationship Summary

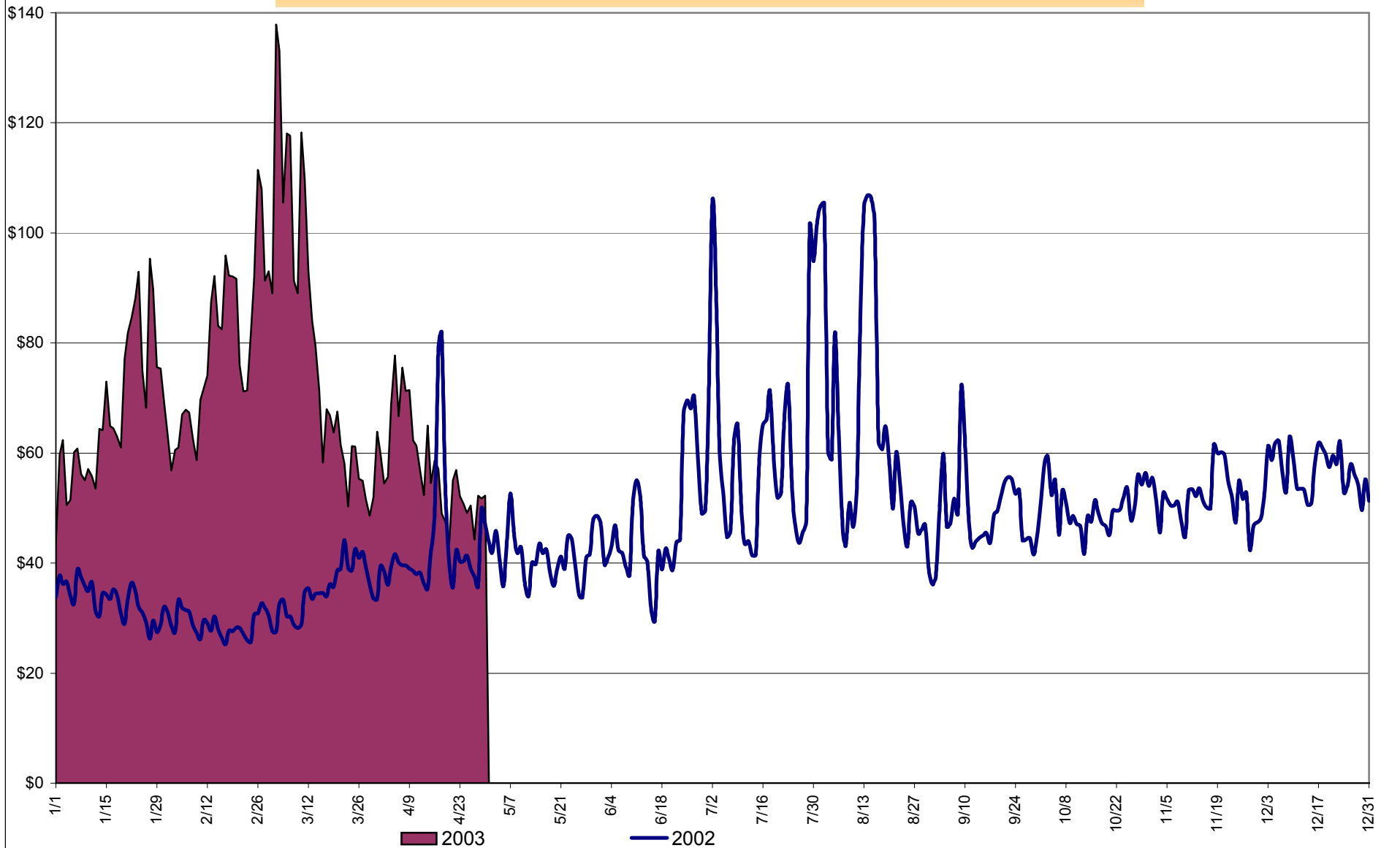
- ➔ New feature of “FRP (Financially Responsible Party) Confirmation” was introduced on April 13, 2003.
- ➔ Provides transaction (contract) owner an opportunity to verify any changes made to transaction bids by other authorized parties.
- ➔ This new control can be automated by creating a “Trust Relationship” with other organizations (MIS admin function).
 - ➔ With Trust Relationships in place, MIS confirmation logic behaves exactly as it did prior to April 13, 2003.
- ➔ There is **NO CHANGE** to existing MIS source/sink authorization and confirmation rules (including “auto-confirm” at source/sink).
 - ➔ Trust relationships ONLY relevant to FRP confirmation.
- ➔ Transactions requiring FRP confirmation can be identified in MIS (using new “OSS Status” column in conjunction with “MIS Status”).
- ➔ If “FRP Confirmation” is not automated with a Trust Relationship, the confirmation can be provided manually in either MIS or OSS.

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

2002 Annual Average \$49.77/MWH

April 2002 YTD Average \$35.71/MWH

April 2003 YTD Average \$72.20/MWH



4-A

Preliminary

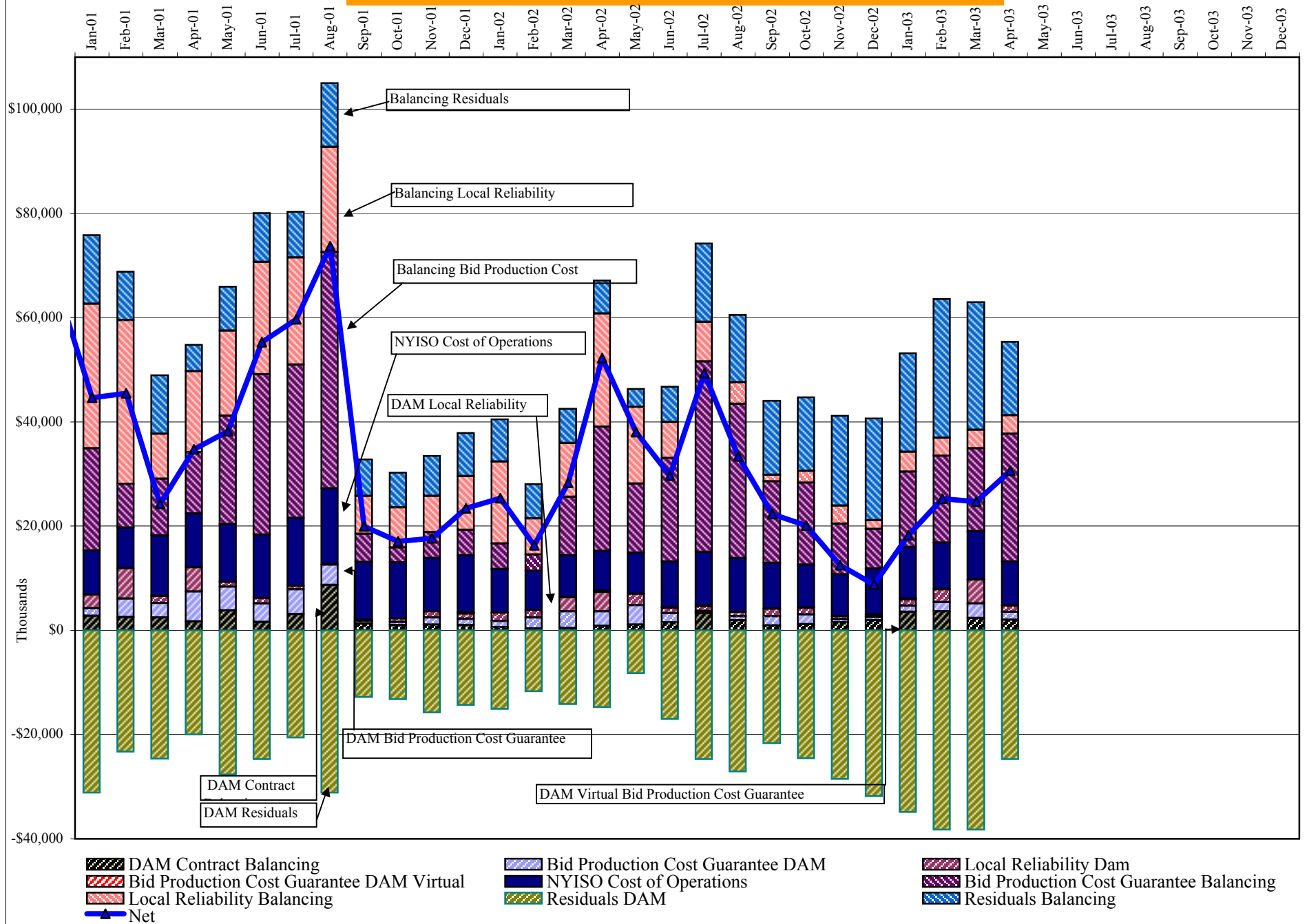
5/5/2003 8:52 PM
Market Monitoring

NYISO Administered Total Price (Energy and Ancillary Services)

from the LBMP Customer point of view

| 2003 | January | February | March | April | May | June | July | August | September | October | November | December |
|---------------------------------|---------|----------|--------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| LBMP | 66.36 | 76.58 | 78.36 | 54.26 | | | | | | | | |
| NTAC | 0.41 | 0.35 | 0.66 | 0.45 | | | | | | | | |
| Reserve | 0.48 | 0.36 | 0.47 | 0.41 | | | | | | | | |
| Regulation | 0.26 | 0.27 | 0.38 | 0.31 | | | | | | | | |
| NYISO Cost of Operations | 0.68 | 0.68 | 0.68 | 0.68 | | | | | | | | |
| Uplift | 0.34 | 1.02 | 0.97 | 1.72 | | | | | | | | |
| Voltage Support and Black Start | 0.33 | 0.33 | 0.33 | 0.33 | | | | | | | | |
| Avg Monthly Price | 68.86 | 79.60 | 81.84 | 58.16 | | | | | | | | |
| Avg YTD Price | 68.86 | 73.99 | 76.57 | 72.20 | | | | | | | | |
| 2002 | January | February | March | April | May | June | July | August | September | October | November | December |
| LBMP | 30.32 | 26.58 | 32.02 | 39.03 | 37.48 | 45.59 | 60.80 | 65.60 | 46.88 | 48.07 | 50.05 | 54.73 |
| NTAC | 0.53 | 0.48 | 0.45 | 0.43 | 0.47 | 0.61 | 1.04 | 0.52 | 0.49 | 0.63 | 0.39 | 0.35 |
| Reserve | 0.19 | 0.19 | 0.24 | 0.29 | 0.21 | 0.19 | 0.30 | 0.33 | 0.22 | 0.22 | 0.31 | 0.41 |
| Regulation | 0.19 | 0.19 | 0.17 | 0.16 | 0.26 | 0.24 | 0.18 | 0.20 | 0.27 | 0.26 | 0.25 | 0.25 |
| NYISO Cost of Operations | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.62 | 0.63 |
| Uplift | 1.19 | 0.67 | 1.36 | 3.70 | 2.34 | 1.35 | 2.28 | 1.32 | 0.86 | 0.74 | 0.23 | (0.08) |
| Voltage Support and Black Start | 0.34 | 0.33 | 0.33 | 0.34 | 0.34 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| Avg Monthly Price | 33.39 | 29.08 | 35.21 | 44.58 | 41.72 | 48.94 | 65.56 | 68.94 | 49.68 | 50.88 | 52.19 | 56.63 |
| Avg YTD Price | 33.39 | 31.37 | 32.69 | 35.71 | 36.83 | 39.06 | 44.35 | 48.39 | 48.54 | 48.77 | 49.09 | 49.77 |
| 2001 | January | February | March | April | May | June | July | August | September | October | November | December |
| LBMP | 61.52 | 44.29 | 49.98 | 48.60 | 52.84 | 50.31 | 46.58 | 71.97 | 35.33 | 31.05 | 31.53 | 29.23 |
| NTAC | 0.39 | 0.21 | 0.59 | 0.35 | 0.51 | 0.41 | 0.30 | 0.35 | 0.38 | 0.39 | 0.40 | 0.61 |
| Reserve | 0.47 | 0.29 | 0.42 | 0.43 | 0.59 | 0.44 | 0.55 | 1.40 | 0.43 | 0.25 | 0.27 | 0.25 |
| Regulation | 0.07 | 0.07 | 0.10 | 0.10 | 0.13 | 0.08 | 0.08 | 0.06 | 0.14 | 0.18 | 0.15 | 0.18 |
| NYISO Cost of Operations | 0.65 | 0.59 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.83 | 0.88 | 0.88 |
| Uplift | 2.62 | 2.85 | 0.88 | 2.04 | 2.98 | 3.12 | 3.71 | 4.27 | 0.67 | 0.54 | 0.52 | 0.94 |
| Voltage Support and Black Start | 0.34 | 0.34 | 0.34 | 0.34 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| Avg Monthly Price | 66.05 | 48.64 | 53.20 | 52.75 | 58.27 | 55.58 | 52.44 | 79.28 | 38.17 | 33.57 | 34.10 | 32.44 |
| Avg YTD Price | 66.05 | 58.08 | 56.55 | 55.72 | 56.21 | 56.09 | 55.41 | 59.68 | 57.12 | 54.63 | 52.99 | 51.42 |
| 2000 | January | February | March | April | May | June | July | August | September | October | November | December |
| LBMP | 46.01 | 41.33 | 32.62 | 32.05 | 50.39 | 79.35 | 51.46 | 63.48 | 54.29 | 53.84 | 52.16 | 62.85 |
| NTAC | 0.47 | 0.20 | 0.25 | 0.65 | 0.60 | 0.46 | 0.39 | 0.42 | 0.22 | 0.32 | 0.30 | 0.20 |
| Reserve | 1.44 | 5.64 | 2.68 | 0.27 | 0.68 | 0.66 | 0.31 | 0.49 | 0.64 | 0.44 | 0.33 | 0.37 |
| Regulation | 0.19 | 0.35 | 0.42 | 0.33 | 0.14 | 0.01 | 0.10 | 0.04 | 0.07 | 0.09 | 0.08 | 0.07 |
| NYISO Cost of Operations | 1.14 | (0.46) | (0.61) | 0.47 | 0.76 | 0.89 | 0.88 | 1.81 | 1.89 | 0.43 | 0.48 | 0.49 |
| Uplift | 0.16 | 0.05 | (0.29) | 0.27 | 3.37 | 3.31 | 1.13 | 3.80 | 2.85 | 0.96 | 0.38 | 3.70 |
| Voltage Support and Black Start | 0.38 | 0.37 | 0.37 | 0.37 | 0.38 | 0.38 | 0.38 | 0.37 | 0.39 | 0.40 | 0.40 | 0.40 |
| Avg Monthly Price | 49.78 | 47.49 | 35.45 | 34.40 | 56.33 | 85.06 | 54.64 | 70.43 | 60.36 | 56.48 | 54.13 | 68.07 |
| Avg YTD Price | 49.78 | 48.70 | 44.05 | 41.62 | 45.14 | 53.74 | 53.91 | 56.57 | 57.09 | 57.02 | 56.75 | 57.90 |

NYISO Dollar Flows - Uplift - OATT Schedule 1 components



| NYISO Markets 2003 Transactions | | | | | | | | | | | | |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | January | February | March | April | May | June | July | August | September | October | November | December |
| Transactions by Market | | | | | | | | | | | | |
| DAM LSE Internal LBMP Energy Sales | 46% | 48% | 46% | 49% | | | | | | | | |
| DAM External TC LBMP Energy Sales | 1% | 1% | 1% | 1% | | | | | | | | |
| DAM Bilateral - Internal Bilaterals | 50% | 49% | 50% | 46% | | | | | | | | |
| DAM Bilateral - Import/Non-LBMP Market Bilaterals | 1% | 1% | 1% | 1% | | | | | | | | |
| DAM Bilateral - Export/Non-LBMP Market Bilaterals | 1% | 1% | 2% | 1% | | | | | | | | |
| DAM Bilateral - Wheel Through Bilaterals | 1% | 1% | 1% | 2% | | | | | | | | |
| Day Ahead Market | 100% | 100% | 100% | 100% | | | | | | | | |
| Balancing Energy LSE Internal LBMP Energy Sales | 61% | 42% | 52% | 72% | | | | | | | | |
| Balancing Energy External TC LBMP Energy Sales | 54% | 73% | 95% | 73% | | | | | | | | |
| Balancing Energy Bilateral - Internal Bilaterals | -6% | -9% | -2% | 0% | | | | | | | | |
| Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals | 4% | 1% | 1% | 1% | | | | | | | | |
| Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals | 0% | 0% | -38% | 0% | | | | | | | | |
| Balancing Energy Bilateral - Wheel Through Bilaterals | -13% | -6% | -8% | -46% | | | | | | | | |
| Balancing Energy + | 100% | 100% | 100% | 100% | | | | | | | | |
| Transactions Summary | | | | | | | | | | | | |
| LBMP | 49% | 50% | 49% | 52% | | | | | | | | |
| Internal Bilaterals | 48% | 47% | 48% | 45% | | | | | | | | |
| Import Bilaterals | 1% | 1% | 1% | 1% | | | | | | | | |
| Export Bilaterals | 1% | 1% | 1% | 1% | | | | | | | | |
| Wheels Through | 1% | 1% | 1% | 1% | | | | | | | | |
| Market Share of Total Load | | | | | | | | | | | | |
| Day Ahead Market | 97.46% | 97.58% | 97.21% | 98.07% | | | | | | | | |
| Balancing Energy + | 2.54% | 2.42% | 2.79% | 1.93% | | | | | | | | |
| Total MWH | 14,557,243 | 13,010,139 | 13,502,785 | 12,233,455 | | | | | | | | |
| NYISO Markets 2002 Transactions | | | | | | | | | | | | |
| | January | February | March | April | May | June | July | August | September | October | November | December |
| Transactions by Market | | | | | | | | | | | | |
| DAM LSE Internal LBMP Energy Sales | 44% | 42% | 43% | 45% | 40% | 43% | 50% | 51% | 46% | 46% | 49% | 47% |
| DAM External TC LBMP Energy Sales | 0% | 1% | 1% | 1% | 1% | 2% | 3% | 1% | 2% | 1% | 1% | 2% |
| DAM Bilateral - Internal Bilaterals | 51% | 52% | 51% | 49% | 55% | 51% | 45% | 45% | 49% | 50% | 46% | 49% |
| DAM Bilateral - Import/Non-LBMP Market Bilaterals | 1% | 1% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% |
| DAM Bilateral - Export/Non-LBMP Market Bilaterals | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |
| DAM Bilateral - Wheel Through Bilaterals | 3% | 3% | 3% | 3% | 2% | 2% | 1% | 2% | 2% | 1% | 1% | 1% |
| Day Ahead Market | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Balancing Energy LSE Internal LBMP Energy Sales | -17% | 410% | 821% | 182% | -10% | 148% | 311% | 18% | -77% | 61% | 52% | 59% |
| Balancing Energy External TC LBMP Energy Sales | 5% | 39% | -36% | -15% | 44% | -95% | -165% | 89% | 189% | 37% | 44% | 30% |
| Balancing Energy Bilateral - Internal Bilaterals | 1% | -51% | 8% | 12% | 10% | 14% | -19% | 27% | 17% | -2% | 3% | 3% |
| Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals | 13% | 27% | 24% | 3% | 8% | 15% | 24% | 19% | 14% | 8% | 9% | 9% |
| Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals | 0% | 0% | 0% | 0% | 1% | 2% | 0% | 1% | 0% | 0% | 0% | 0% |
| Balancing Energy Bilateral - Wheel Through Bilaterals | -103% | -524% | -717% | -84% | -154% | -183% | -52% | -55% | -42% | -4% | -8% | -2% |
| Balancing Energy + | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Transactions Summary | | | | | | | | | | | | |
| LBMP | 45% | 44% | 46% | 48% | 42% | 46% | 53% | 52% | 49% | 49% | 52% | 50% |
| Internal Bilaterals | 52% | 52% | 51% | 49% | 55% | 51% | 45% | 45% | 48% | 48% | 45% | 47% |
| Import Bilaterals | 1% | 1% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 1% | 1% |
| Export Bilaterals | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |
| Wheels Through | 1% | 2% | 1% | 1% | 1% | 2% | 1% | 1% | 1% | 1% | 1% | 1% |
| Market Share of Total Load | | | | | | | | | | | | |
| Day Ahead Market | 101.60% | 100.25% | 99.75% | 98.14% | 100.79% | 100.50% | 99.46% | 99.51% | 99.20% | 97.34% | 97.35% | 96.35% |
| Balancing Energy + | -1.60% # | -0.25% # | 0.25% | 1.86% | -0.79% # | -0.50% # | 0.54% | 0.49% | 0.80% | 2.66% | 2.65% | 3.65% |
| Total MWH | 13,366,052 | 11,986,216 | 12,792,696 | 12,088,196 | 12,462,759 | 13,974,041 | 16,385,032 | 16,245,862 | 14,035,422 | 13,210,317 | 12,809,561 | 14,094,395 |

The sign convention has changed for the detail of Balancing Energy when the total monthly Balancing Energy is negative. The signs for the detail section more intuitively reflect the direction of power flow eliminating the use of double negatives. This affects Jan., Feb., May, and June 2002.

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

4-D

Preliminary

NYISO Markets 2003 Energy Statistics

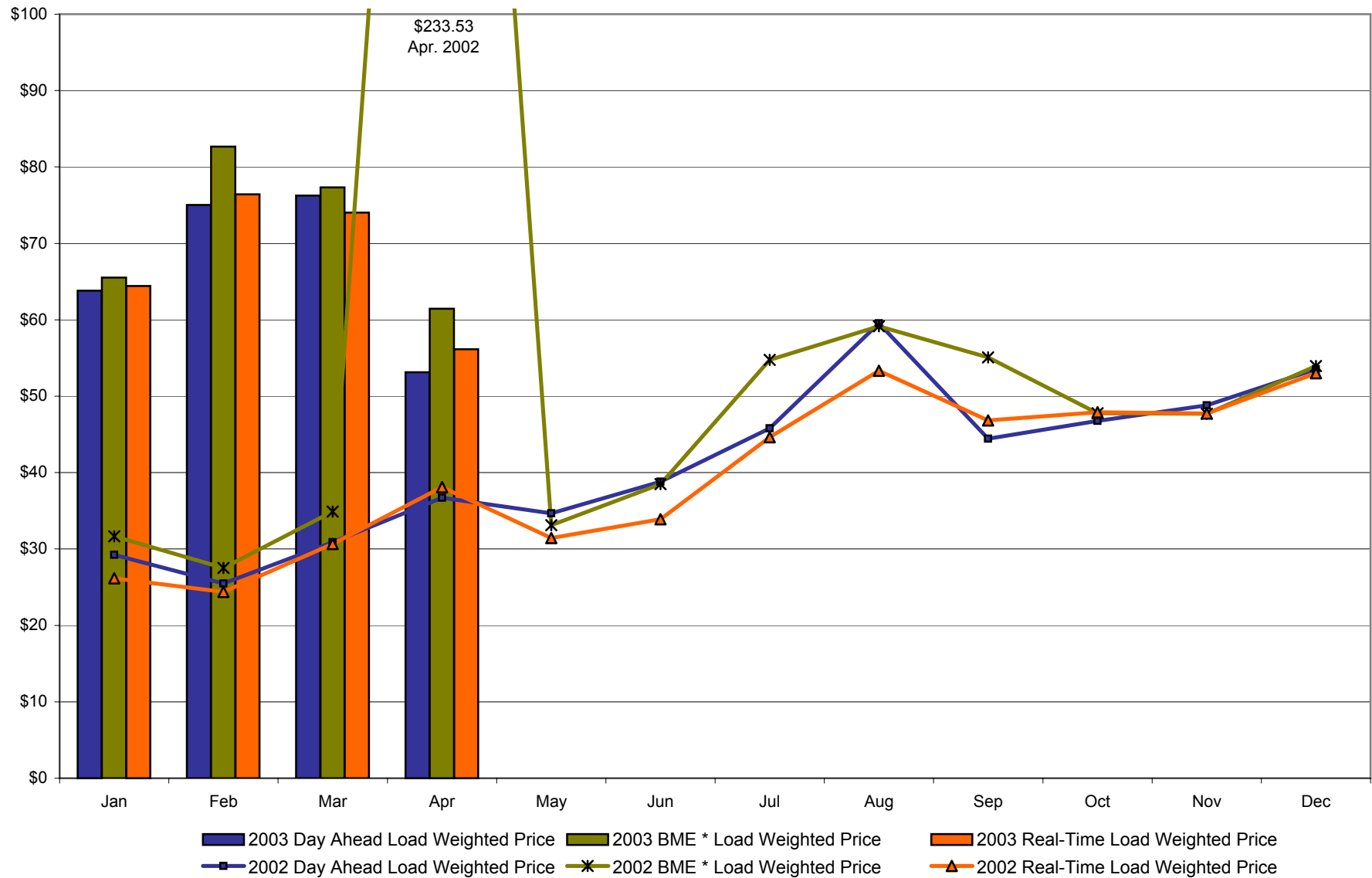
| | January | February | March | April | May | June | July | August | September | October | November | December |
|--|---------|----------|---------|---------|-----|------|------|--------|-----------|---------|----------|----------|
| <u>DAY AHEAD LBMP</u> | | | | | | | | | | | | |
| Unweighted Price | \$61.33 | \$72.81 | \$73.18 | \$51.58 | | | | | | | | |
| Standard Deviation | \$20.09 | \$21.12 | \$29.70 | \$12.47 | | | | | | | | |
| Load Wtg.Price | \$63.81 | \$75.03 | \$76.25 | \$53.14 | | | | | | | | |
| <u>BME * LBMP</u> | | | | | | | | | | | | |
| Unweighted Price | \$63.19 | \$80.25 | \$74.27 | \$59.22 | | | | | | | | |
| Standard Deviation | \$25.43 | \$41.53 | \$32.77 | \$25.00 | | | | | | | | |
| Load Wtg.Price | \$65.54 | \$82.65 | \$77.33 | \$61.45 | | | | | | | | |
| <u>REAL TIME LBMP</u> | | | | | | | | | | | | |
| Unweighted Price | \$61.53 | \$74.03 | \$70.54 | \$53.94 | | | | | | | | |
| Standard Deviation | \$30.16 | \$37.46 | \$37.97 | \$28.70 | | | | | | | | |
| Load Wtg.Price | \$64.43 | \$76.41 | \$74.02 | \$56.14 | | | | | | | | |
| Average Daily Energy Sendout/Month GWh | 458 | 450 | 418 | 393 | | | | | | | | |

NYISO Markets 2002 Energy Statistics

| | January | February | March | April | May | June | July | August | September | October | November | December |
|--|---------|----------|---------|------------|---------|---------|----------|---------|-----------|---------|----------|----------|
| <u>DAY AHEAD LBMP</u> | | | | | | | | | | | | |
| Unweighted Price | \$28.39 | \$24.93 | \$30.07 | \$35.25 | \$33.36 | \$38.96 | \$51.07 | \$54.86 | \$42.58 | \$45.16 | \$47.30 | \$52.01 |
| Standard Deviation | \$7.26 | \$4.61 | \$7.28 | \$11.57 | \$8.76 | \$15.32 | \$23.15 | \$29.88 | \$11.72 | \$11.61 | \$11.72 | \$12.28 |
| Load Wtg.Price | \$29.25 | \$25.50 | \$30.88 | \$36.72 | \$34.66 | \$38.81 | \$45.81 | \$59.54 | \$44.43 | \$46.76 | \$48.79 | \$53.54 |
| <u>BME * LBMP</u> | | | | | | | | | | | | |
| Unweighted Price | \$30.66 | \$26.84 | \$33.53 | \$191.03 | \$31.43 | \$38.57 | \$63.19 | \$55.27 | \$51.96 | \$45.90 | \$46.53 | \$52.44 |
| Standard Deviation | \$11.22 | \$7.60 | \$13.84 | \$1,020.88 | \$13.91 | \$54.74 | \$181.17 | \$29.34 | \$147.55 | \$12.10 | \$11.07 | \$14.74 |
| Load Wtg.Price | \$31.67 | \$27.54 | \$34.88 | \$233.53 | \$33.12 | \$38.49 | \$54.76 | \$59.15 | \$55.08 | \$47.76 | \$47.70 | \$53.95 |
| <u>REAL TIME LBMP</u> | | | | | | | | | | | | |
| Unweighted Price | \$25.36 | \$23.73 | \$29.78 | \$35.44 | \$29.80 | \$33.98 | \$53.70 | \$49.74 | \$44.08 | \$46.16 | \$46.13 | \$51.04 |
| Standard Deviation | \$8.27 | \$8.83 | \$10.97 | \$25.85 | \$13.32 | \$16.92 | \$66.25 | \$24.86 | \$34.24 | \$17.61 | \$18.25 | \$22.41 |
| Load Wtg.Price | \$26.17 | \$24.39 | \$30.67 | \$38.10 | \$31.42 | \$33.91 | \$44.63 | \$53.32 | \$46.85 | \$47.88 | \$47.75 | \$53.01 |
| Average Daily Energy Sendout/Month GWh | 427 | 418 | 403 | 397 | 388 | 449 | 513 | 511 | 444 | 412 | 413 | 440 |

* Commonly referred as Hour Ahead Market (HAM)

NYISO Monthly Average Internal LBMPs 2002 - 2003



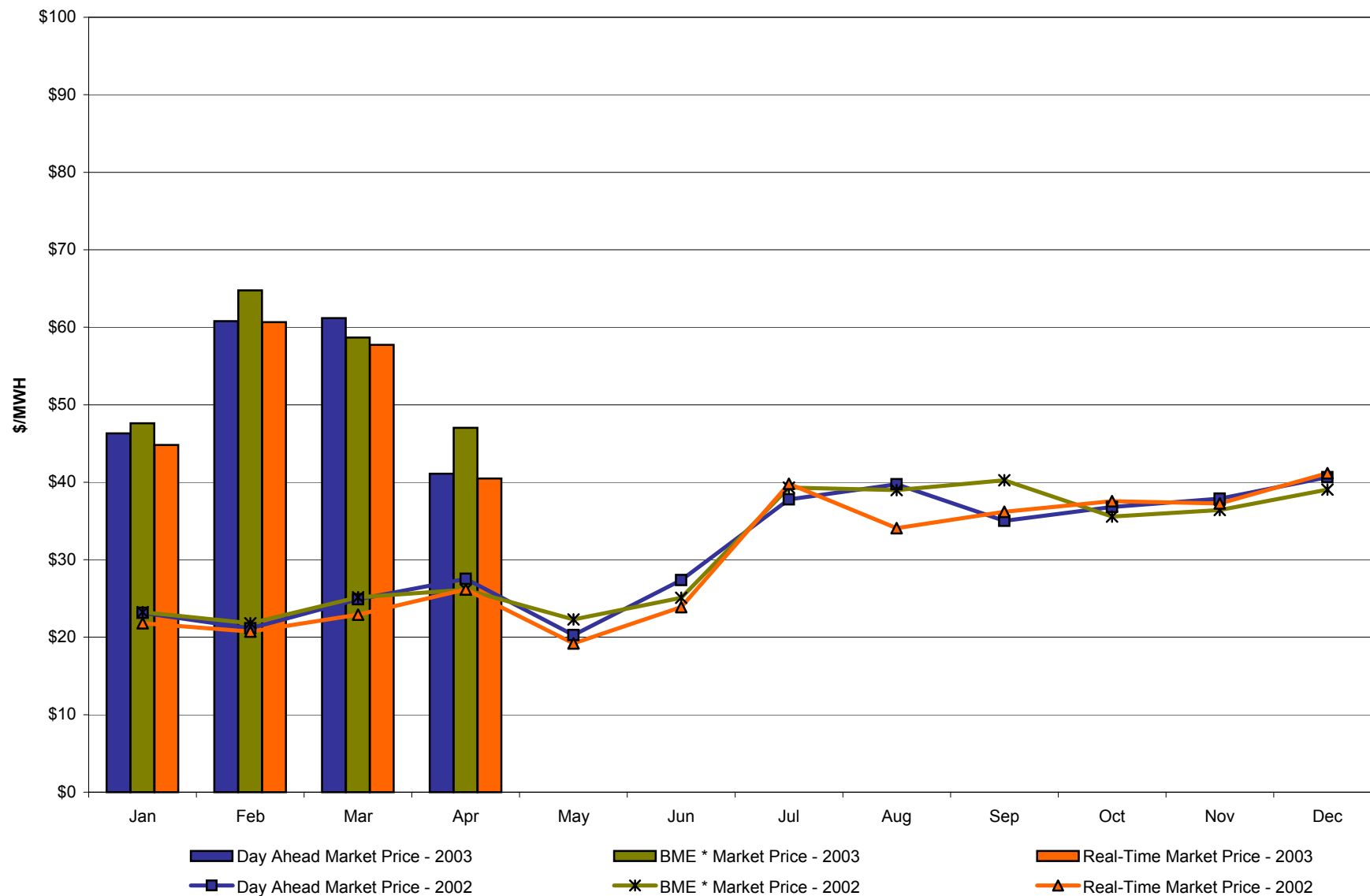
* Commonly referred to as Hour Ahead Market (HAM)

April, 2003 Zonal Statistics for NYISO (\$/MWH)

| | WEST Zone A | CENTRAL Zone C | MOHAWK VALLEY Zone E | CAPITAL Zone F | HUDSON VALLEY Zone G | GENESEE Zone B | LONG ISLAND Zone K | NORTH Zone D | NEW YORK CITY Zone J | MILLWOOD Zone H | DUNWOODIE Zone I |
|------------------------------|---------------------------|--------------------------|----------------------------|-------------------|----------------------------|-------------------|--------------------------|-----------------|----------------------------|--------------------|---------------------|
| <u>DAY AHEAD LBMP</u> | | | | | | | | | | | |
| Unweighted Price | 41.10 | 43.25 | 43.82 | 53.42 | 52.93 | 42.00 | 57.25 | 42.44 | 58.20 | 54.48 | 54.96 |
| Standard Deviation | 10.07 | 10.19 | 10.54 | 14.89 | 13.46 | 10.02 | 15.09 | 9.91 | 15.75 | 14.94 | 15.08 |
| <u>BME * LBMP</u> | | | | | | | | | | | |
| Unweighted Price | 47.04 | 49.38 | 50.12 | 54.90 | 56.02 | 47.33 | 70.01 | 48.82 | 68.44 | 57.71 | 58.15 |
| Standard Deviation | 20.28 | 19.94 | 20.14 | 25.76 | 24.83 | 19.86 | 36.97 | 19.49 | 33.45 | 28.44 | 28.58 |
| <u>REAL TIME LBMP</u> | | | | | | | | | | | |
| Unweighted Price | 40.49 | 40.91 | 40.70 | 56.58 | 53.92 | 40.67 | 63.04 | 39.13 | 63.42 | 57.31 | 57.86 |
| Standard Deviation | 21.63 | 21.84 | 24.03 | 36.74 | 30.30 | 21.84 | 42.76 | 24.50 | 42.63 | 40.76 | 41.00 |
| | HYDRO QUEBEC Zone M | NEW ENGLAND Zone N | ONTARIO HYDRO Zone O | PJM Zone P | | | | | | | |
| <u>DAY AHEAD LBMP</u> | | | | | | | | | | | |
| Unweighted Price | 42.74 | 53.04 | 40.07 | 41.63 | | | | | | | |
| Standard Deviation | 10.21 | 14.39 | 9.83 | 11.95 | | | | | | | |
| <u>BME * LBMP</u> | | | | | | | | | | | |
| Unweighted Price | 48.07 | 50.40 | 45.87 | 45.60 | | | | | | | |
| Standard Deviation | 17.29 | 22.50 | 18.45 | 21.95 | | | | | | | |
| <u>REAL TIME LBMP</u> | | | | | | | | | | | |
| Unweighted Price | 40.83 | 50.50 | 38.01 | 40.36 | | | | | | | |
| Standard Deviation | 24.25 | 30.15 | 20.17 | 22.60 | | | | | | | |

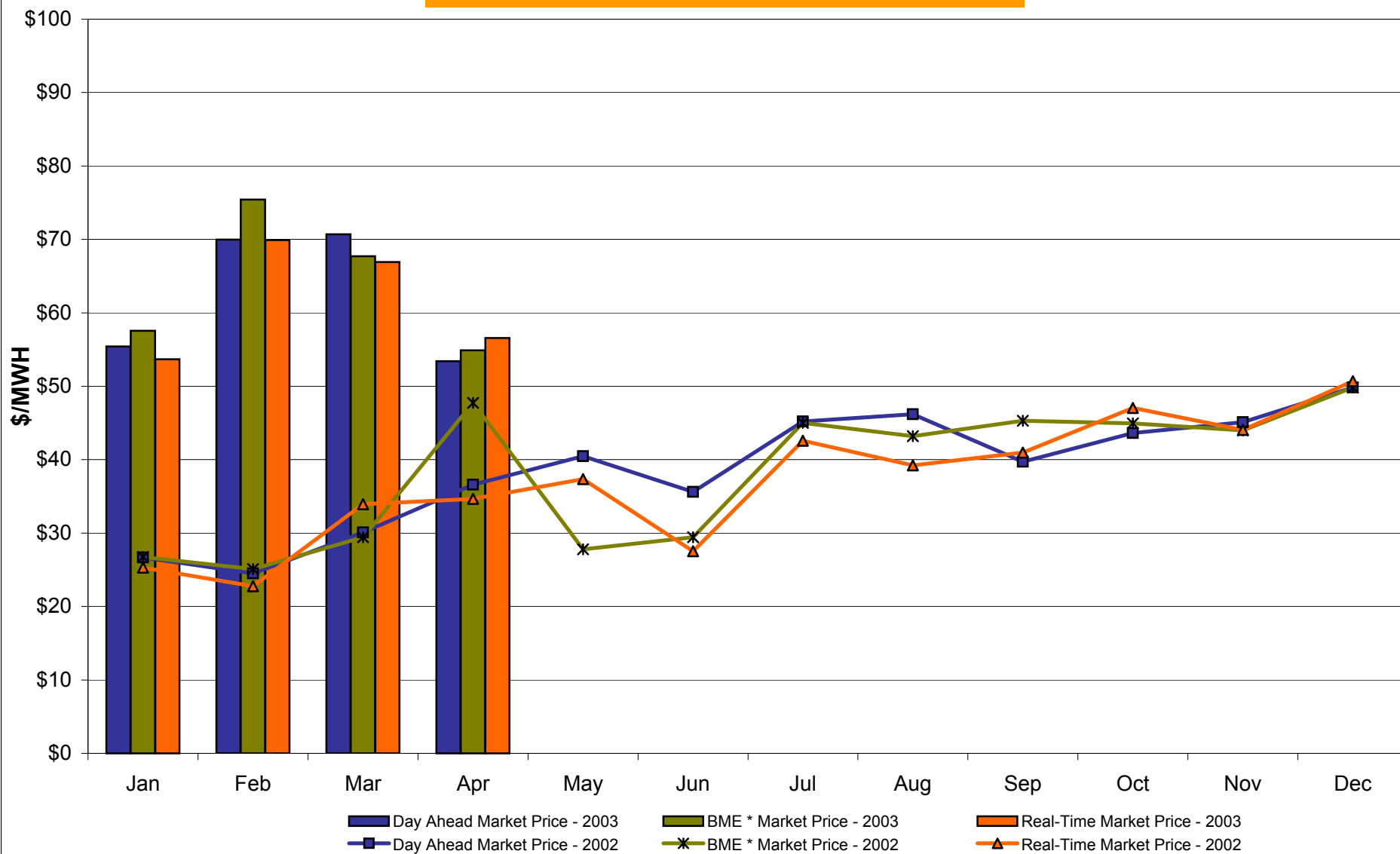
*Commonly Referred as Hour Ahead Market (HAM)

West Zone A Monthly Average LBMP Prices 2002 - 2003



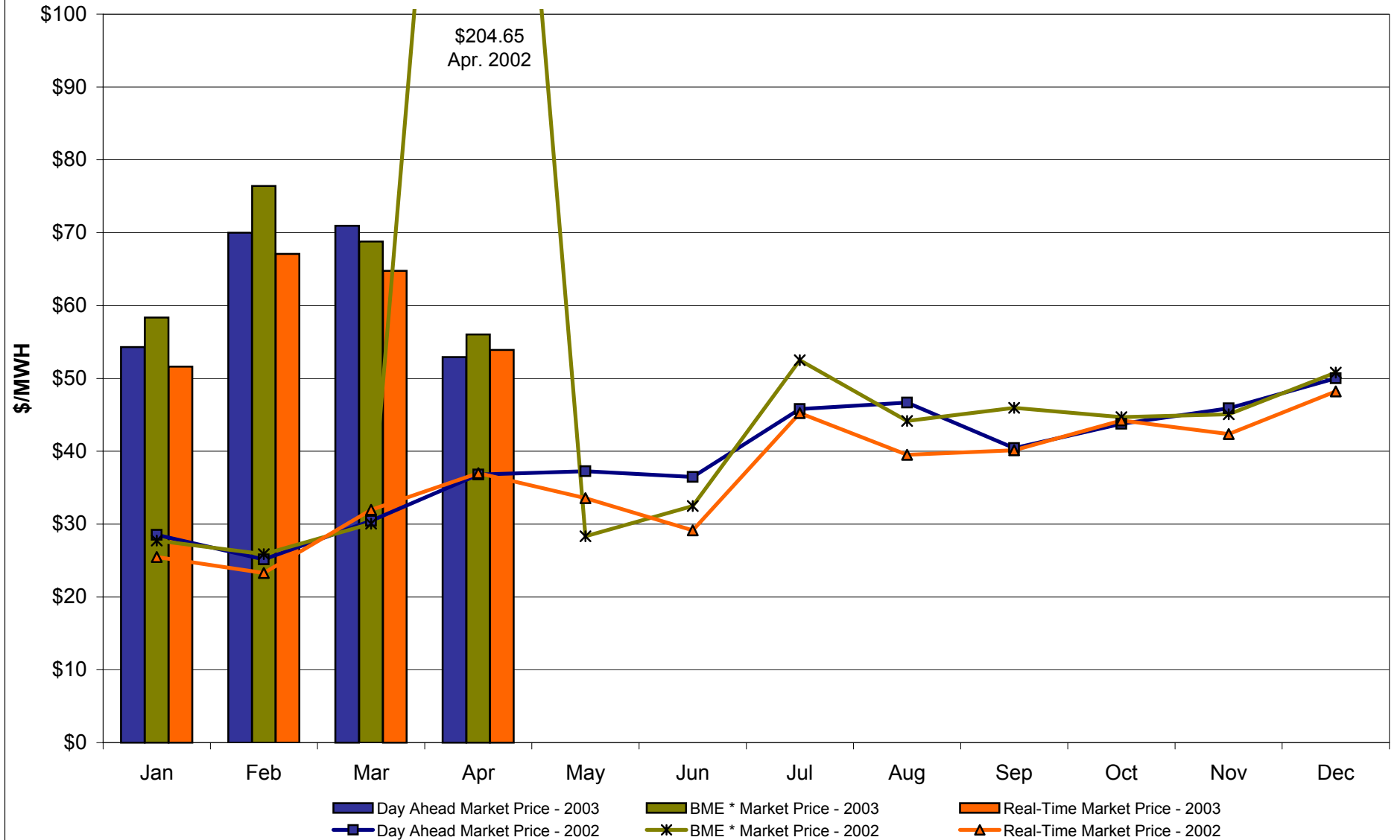
* Commonly referred to as Hour Ahead Market (HAM)

Capital Zone F **Monthly Average LBMP Prices 2002 - 2003**



* Commonly referred to as Hour Ahead Market (HAM)

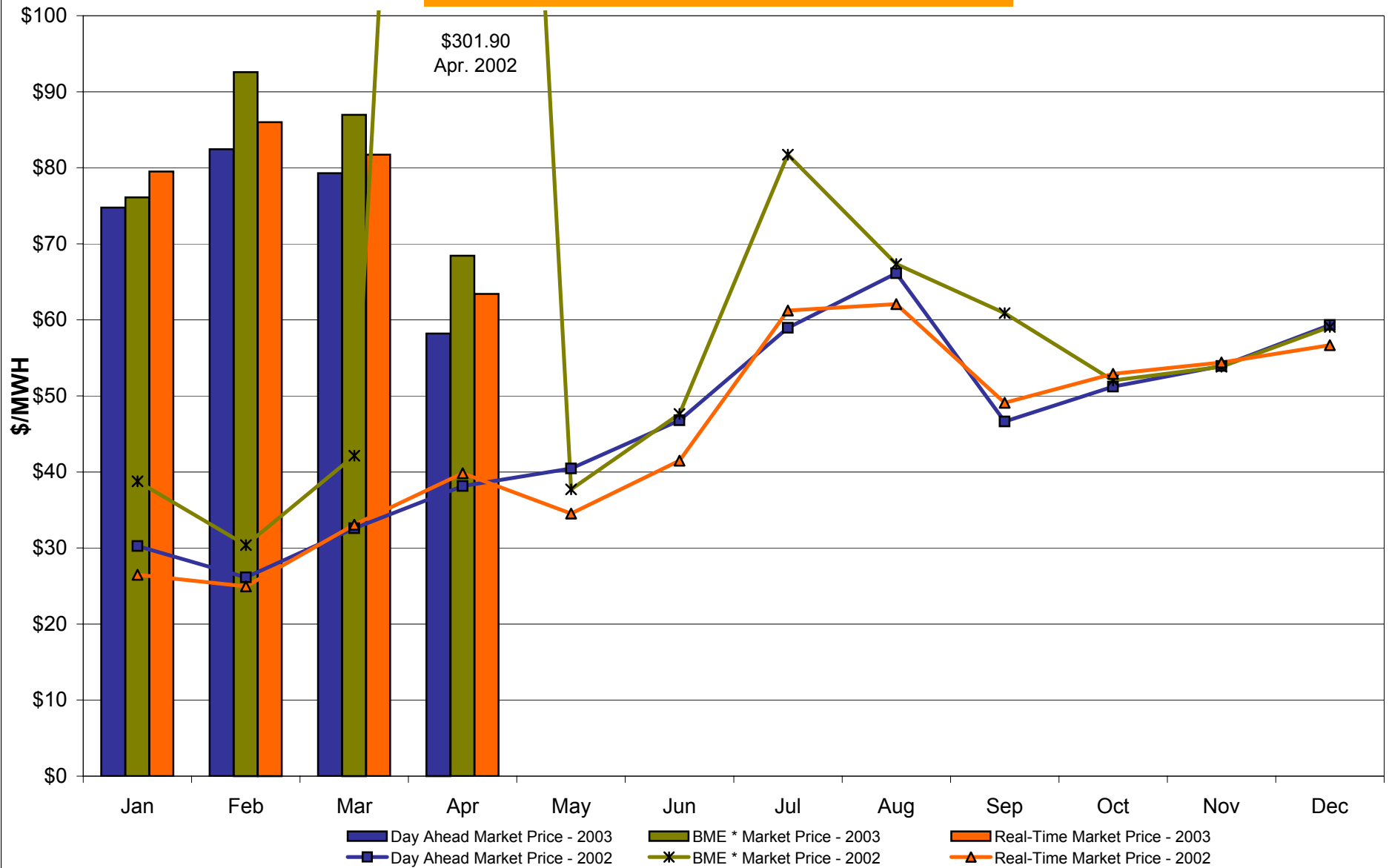
Hudson Valley Zone G Monthly Average LBMP Prices 2002 - 2003



* Commonly referred to as Hour Ahead Market (HAM)

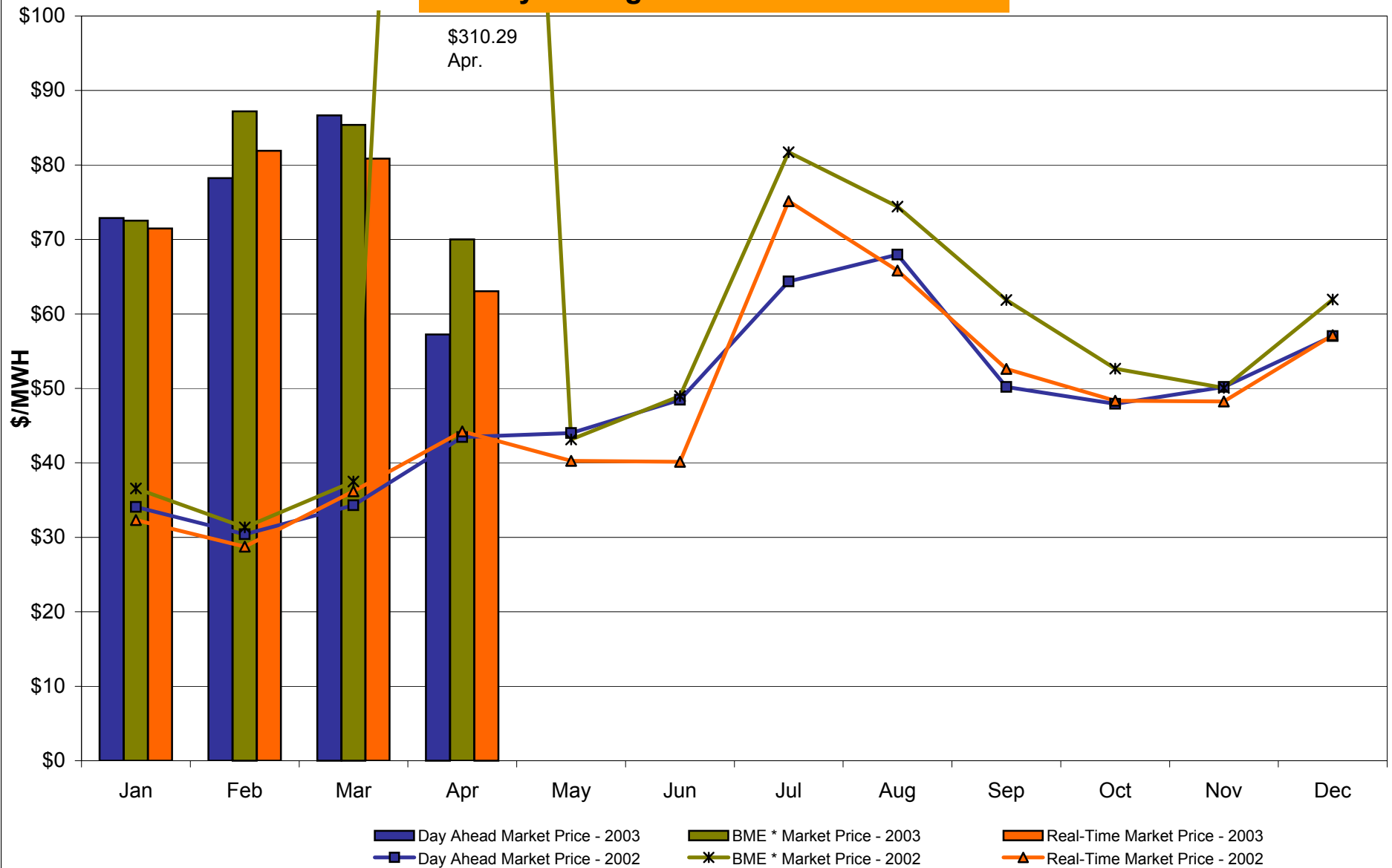
4-J
Preliminary

NYC Zone J **Monthly Average LBMP Prices 2002 - 2003**



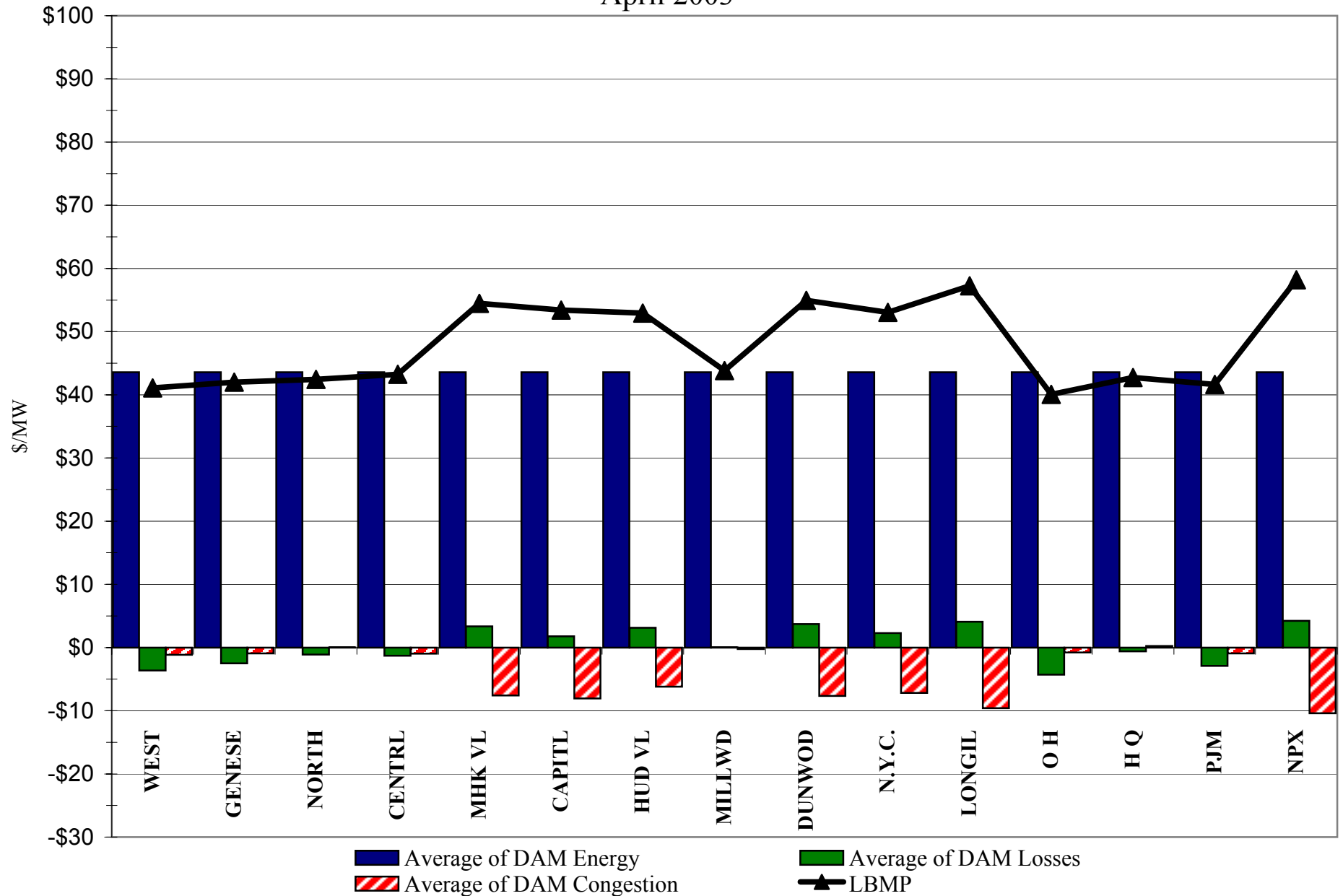
* Commonly referred to as Hour Ahead Market (HAM)

Long Island Zone K Monthly Average LBMP Prices 2002 - 2003

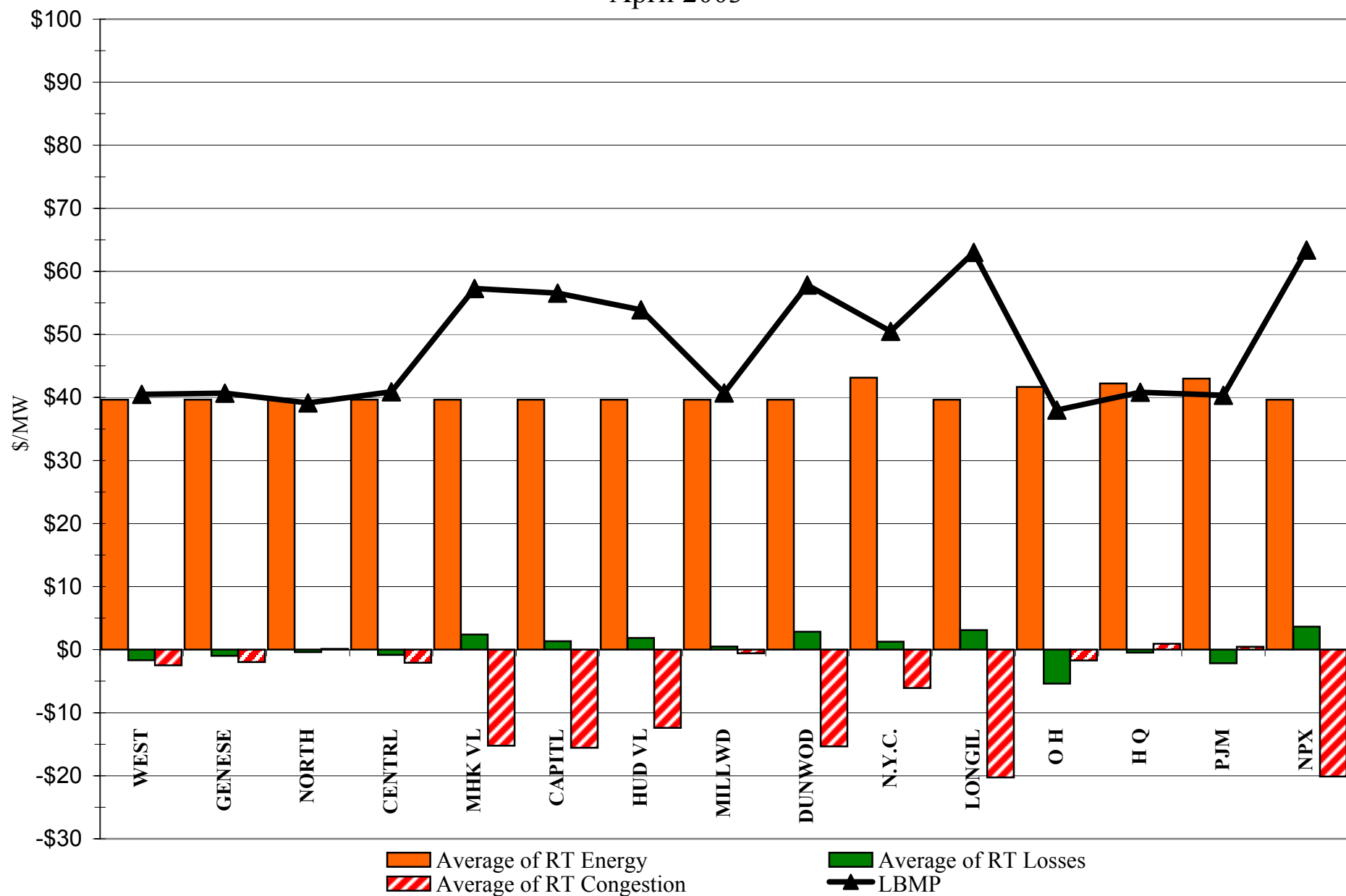


* Commonly referred to as Hour Ahead Market (HAM)

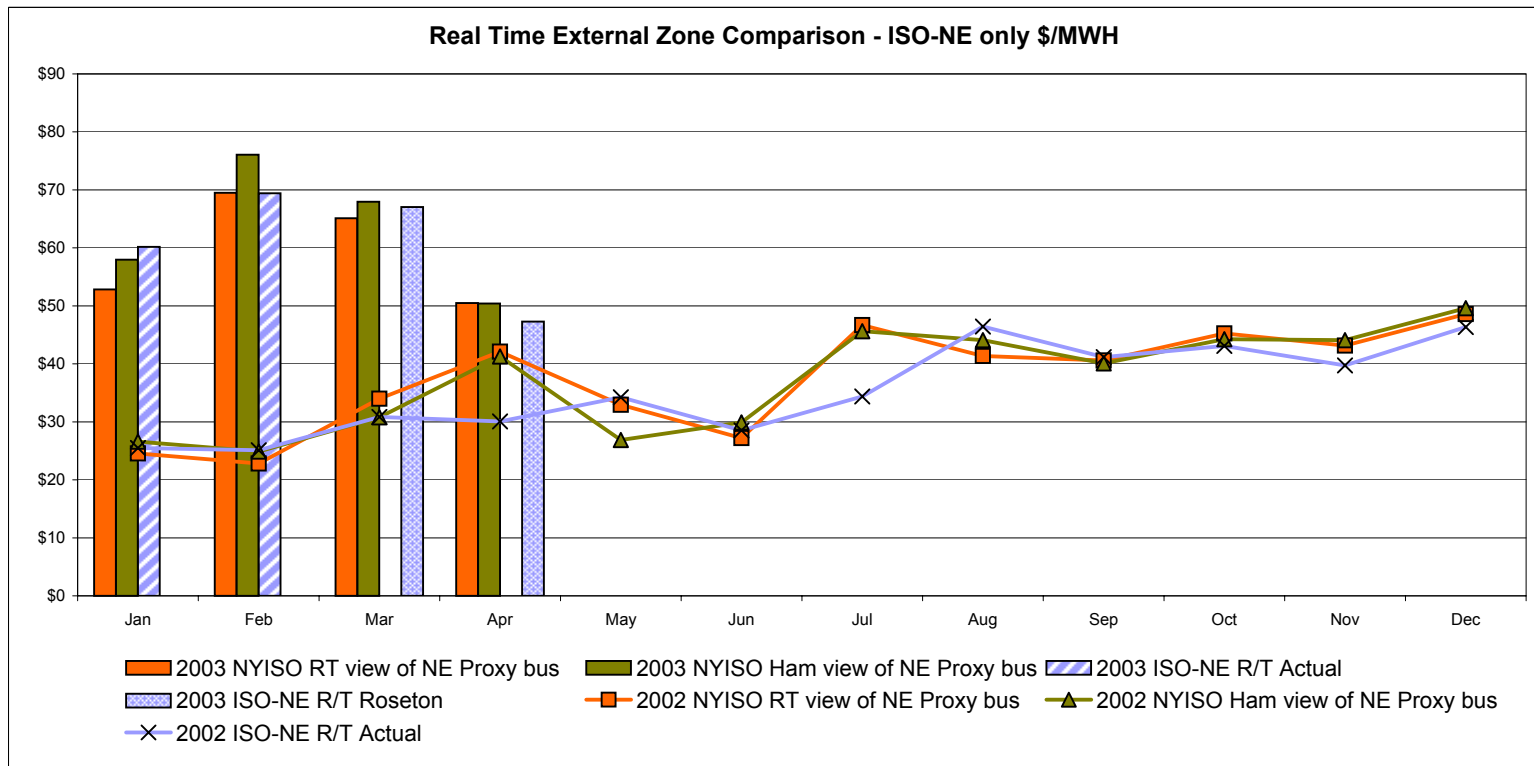
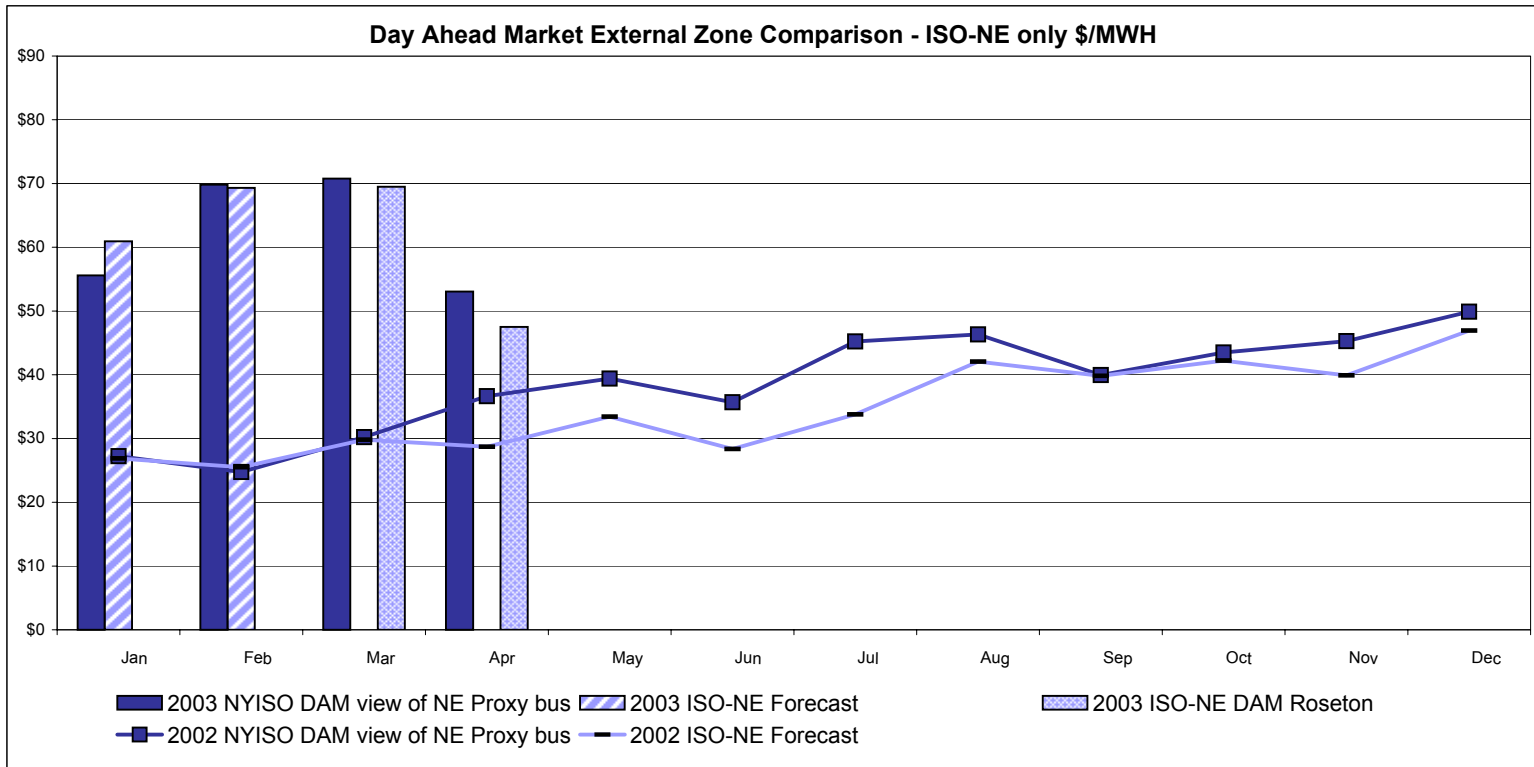
DAM Zonal Unweighted Monthly Average LBMP Components April 2003



RT Zonal Unweighted Monthly Average LBMP Components April 2003



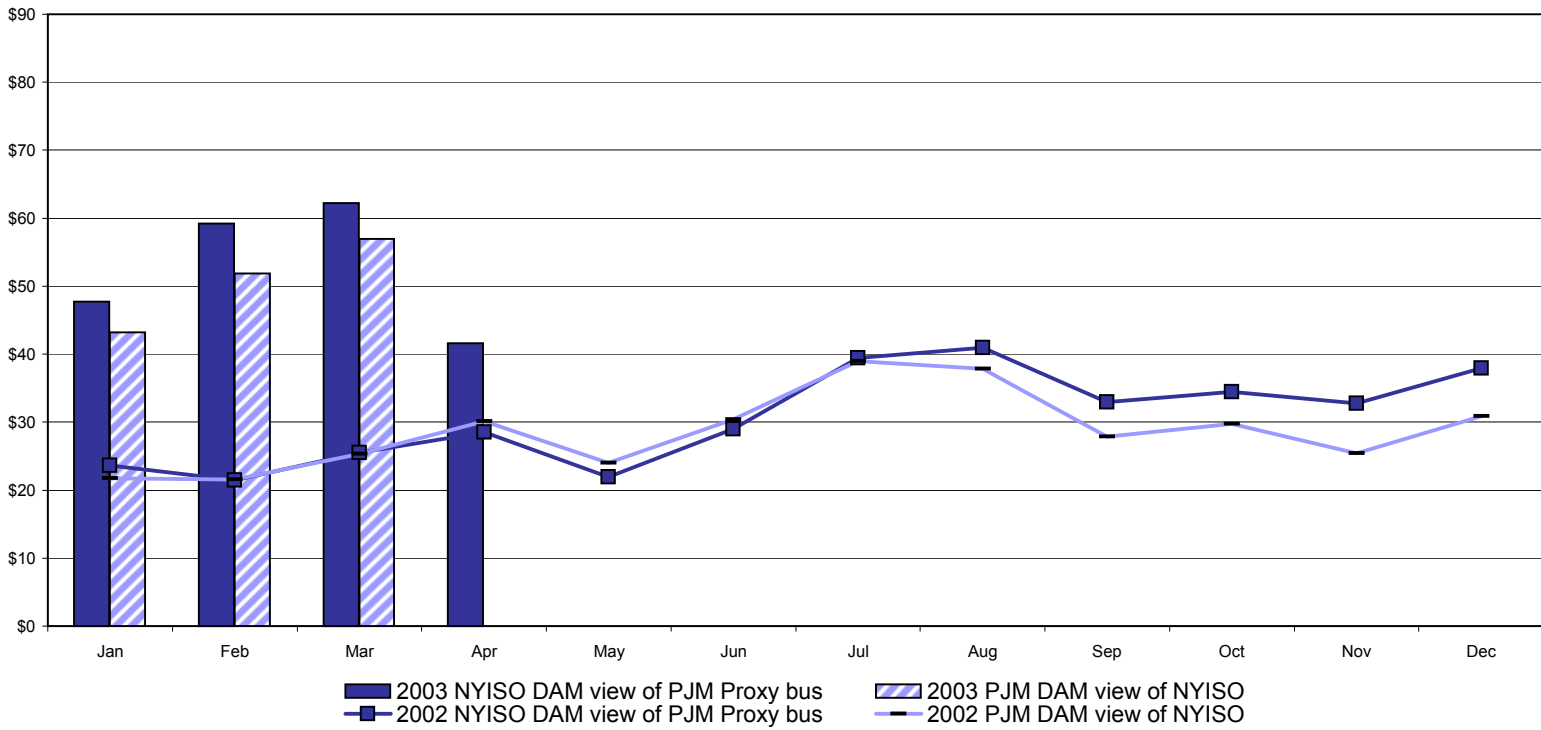
External Comparison ISO-NE



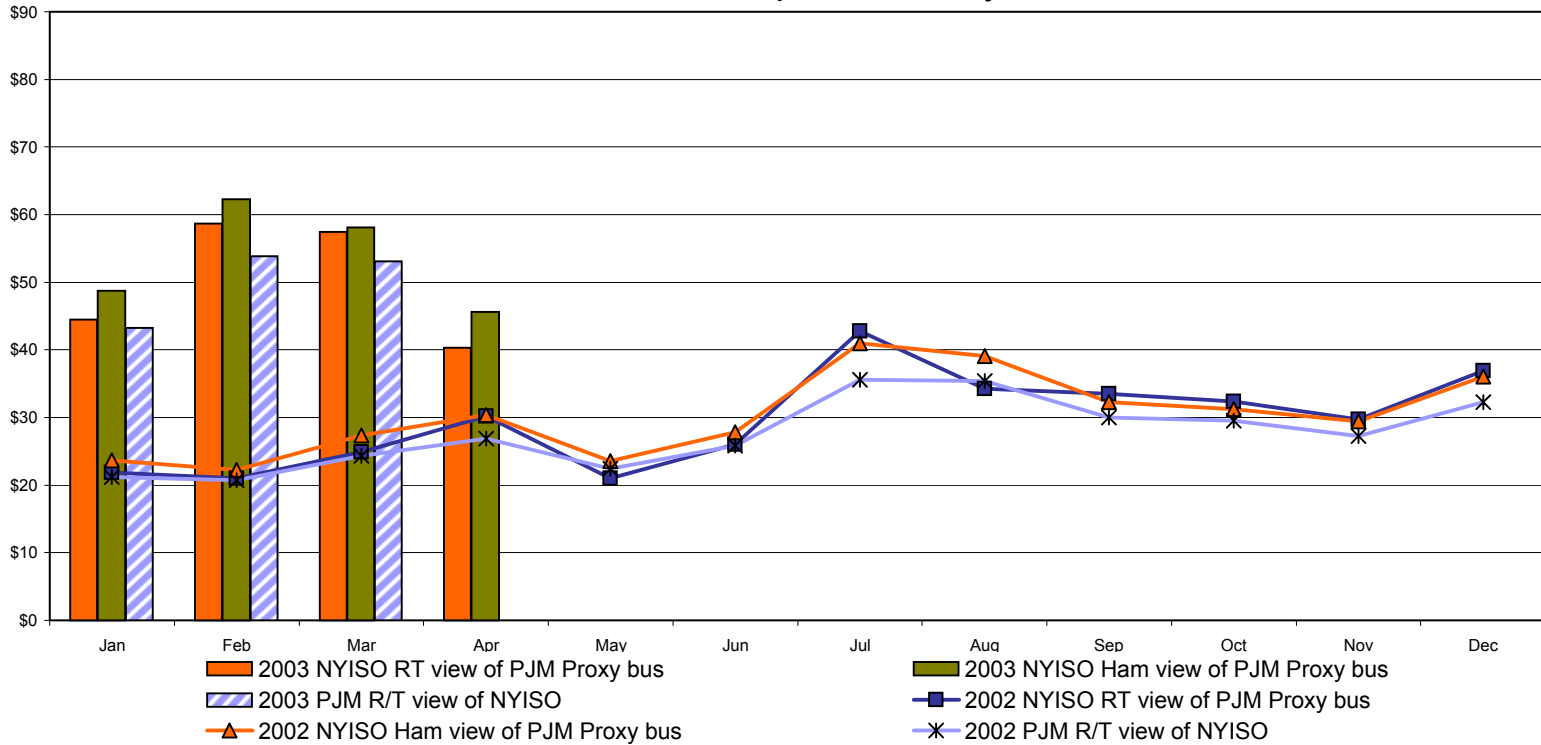
Note:
 ISO-NE Forecast is an advisory posting @ 18:00 day before
 Effective 3/1/2003 SMD implemented by ISO-NE. The DAM and R/T prices at the Roseton interface are now used.

External Comparison PJM

Day Ahead Market External Zone Comparison - PJM only \$/MWH

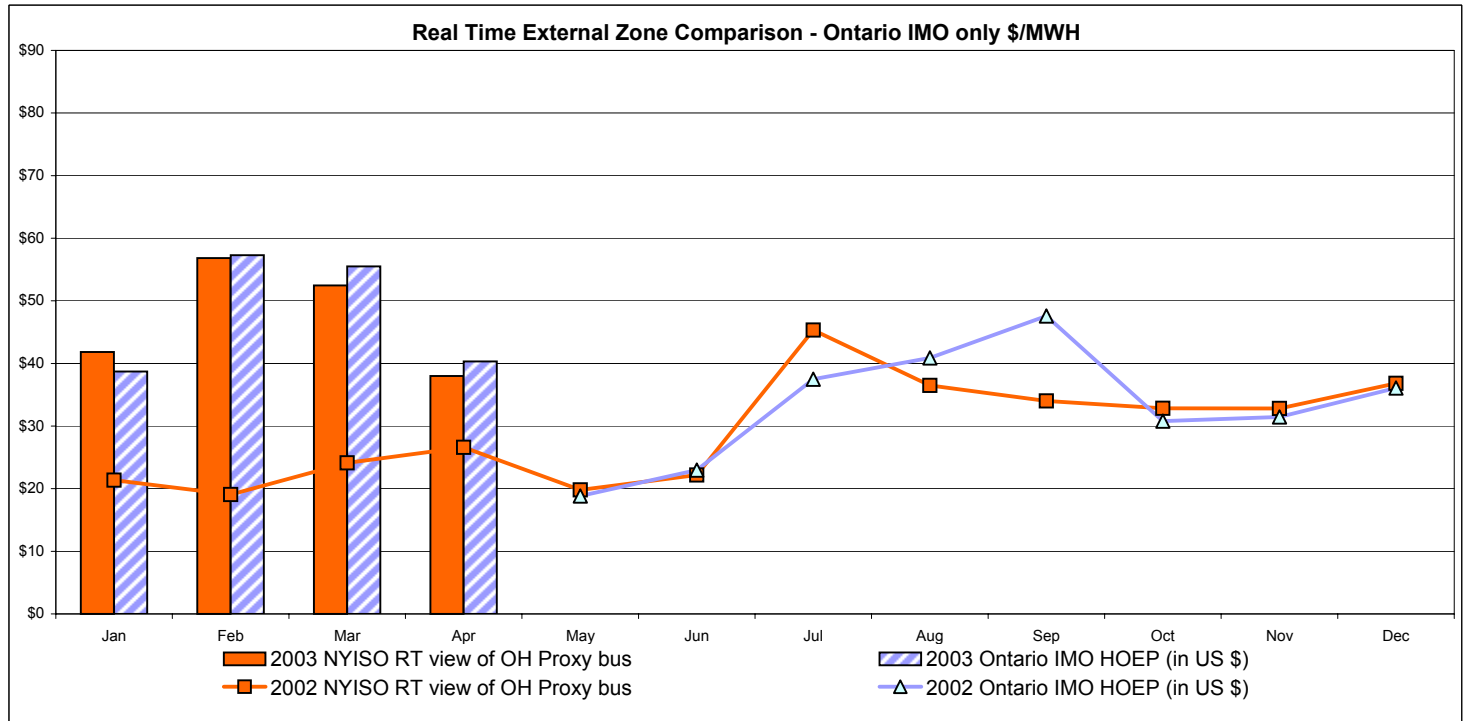
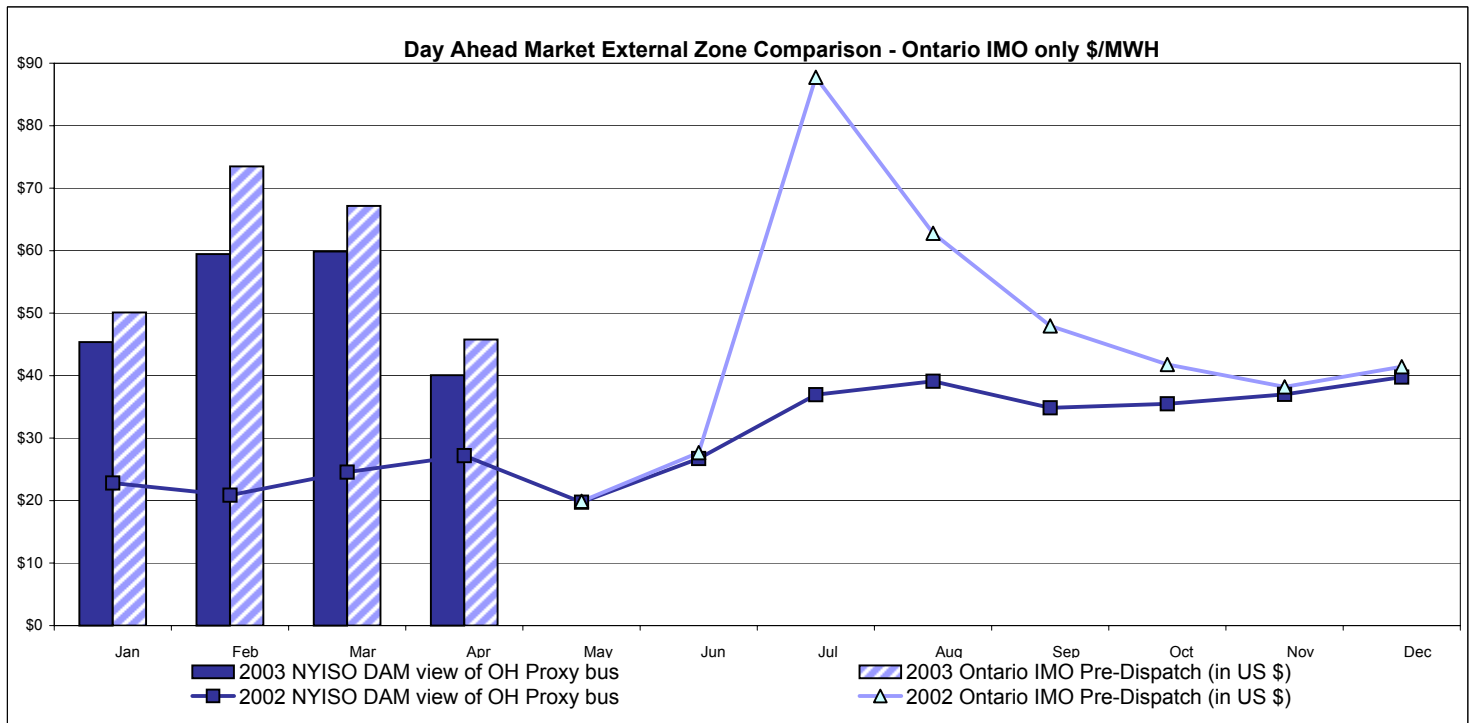


Real Time External Zone Comparison - PJM only \$/MWH



Note:
After 5/1/02 PJM lists only one interface as NYIS
April 2003 data not yet posted by PJM

External Comparison Ontario IMO



Notes: Exchange factor used for March 2003 was .68 to US \$
 HOEP: Hourly Ontario Energy Price
 Pre-Dispatch: Projected Energy Price

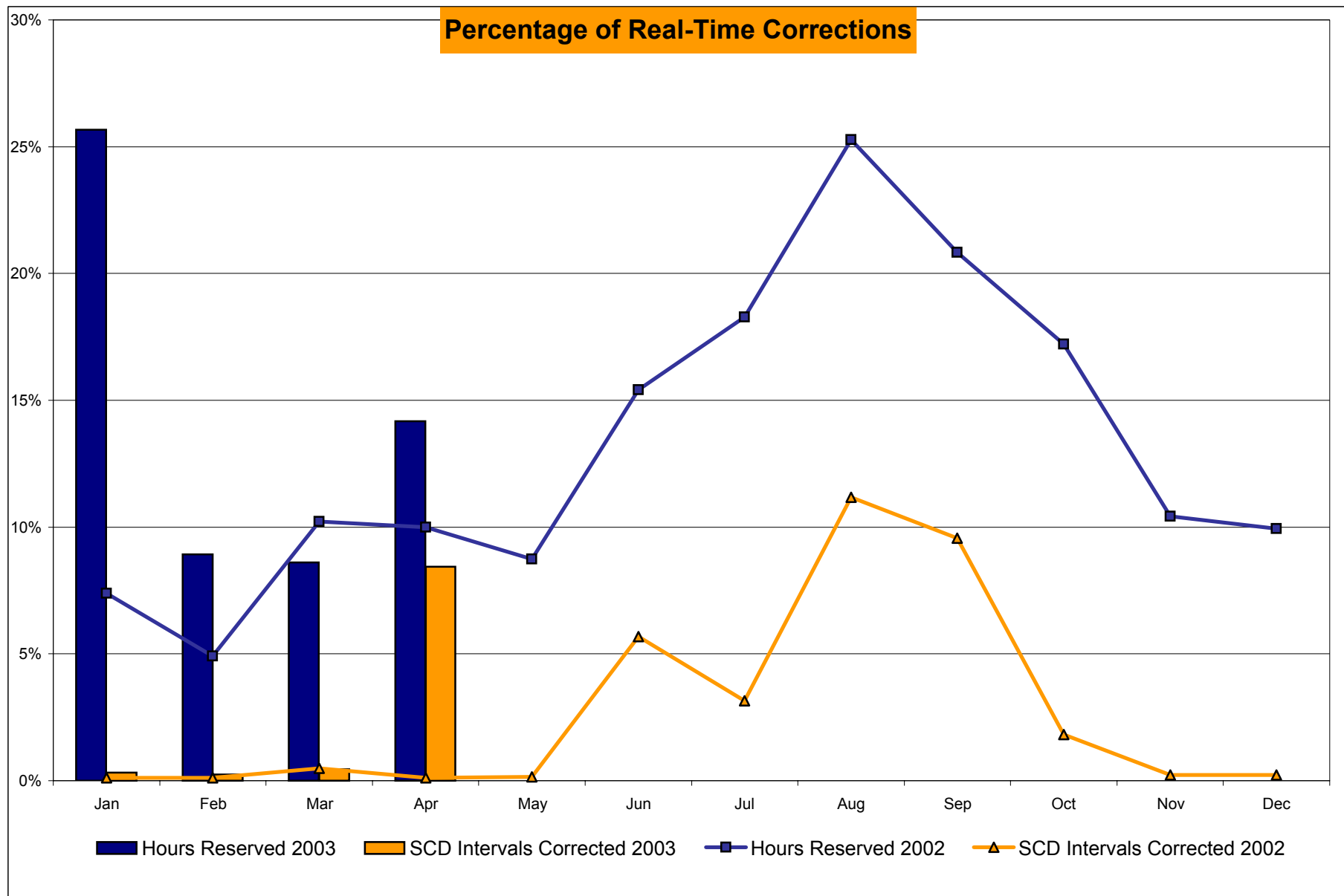
NYISO Price Correction Statistics

NYISO Price Corrections 2003

| <u>Interval Corrections</u> | January | February | March | April | May | June | July | August | September | October | November | December |
|--|---------|----------|--------|--------|-----|------|------|--------|-----------|---------|----------|----------|
| Number of Intervals corrected in the month | 35 | 25 | 49 | 891 | | | | | | | | |
| Number of Intervals in the month | 10,986 | 10,197 | 10,918 | 10,554 | | | | | | | | |
| Percentage of intervals corrected in the month | 0.32% | 0.25% | 0.45% | 8.44% | | | | | | | | |
| Number of Intervals corrected Year-to-date | 35 | 60 | 109 | 1,000 | | | | | | | | |
| Number of Intervals Year-to-date | 10,986 | 21,183 | 32,101 | 42,655 | | | | | | | | |
| Percentage of intervals corrected Year-to-date | 0.32% | 0.28% | 0.34% | 2.35% | | | | | | | | |
| <u>Hours Reserved</u> | | | | | | | | | | | | |
| Number of hours reserved in the month | 191 | 60 | 64 | 102 | | | | | | | | |
| Number of hours in the month | 744 | 672 | 744 | 720 | | | | | | | | |
| Percentage of hours reserved in the month | 25.67% | 8.93% | 8.60% | 14.17% | | | | | | | | |
| Number of hours reserved Year-to-date | 191 | 251 | 315 | 417 | | | | | | | | |
| Number of hours Year-to-date | 744 | 1,416 | 2,160 | 2,880 | | | | | | | | |
| Percentage of hours reserved Year-to-date | 25.67% | 15.74% | 14.58% | 14.48% | | | | | | | | |
| <u>Days Without Corrections</u> | | | | | | | | | | | | |
| Days without price corrections in the month | 18 | 15 | 14 | 9 | | | | | | | | |
| Days without price corrections Year-to-date | 18 | 33 | 47 | 56 | | | | | | | | |

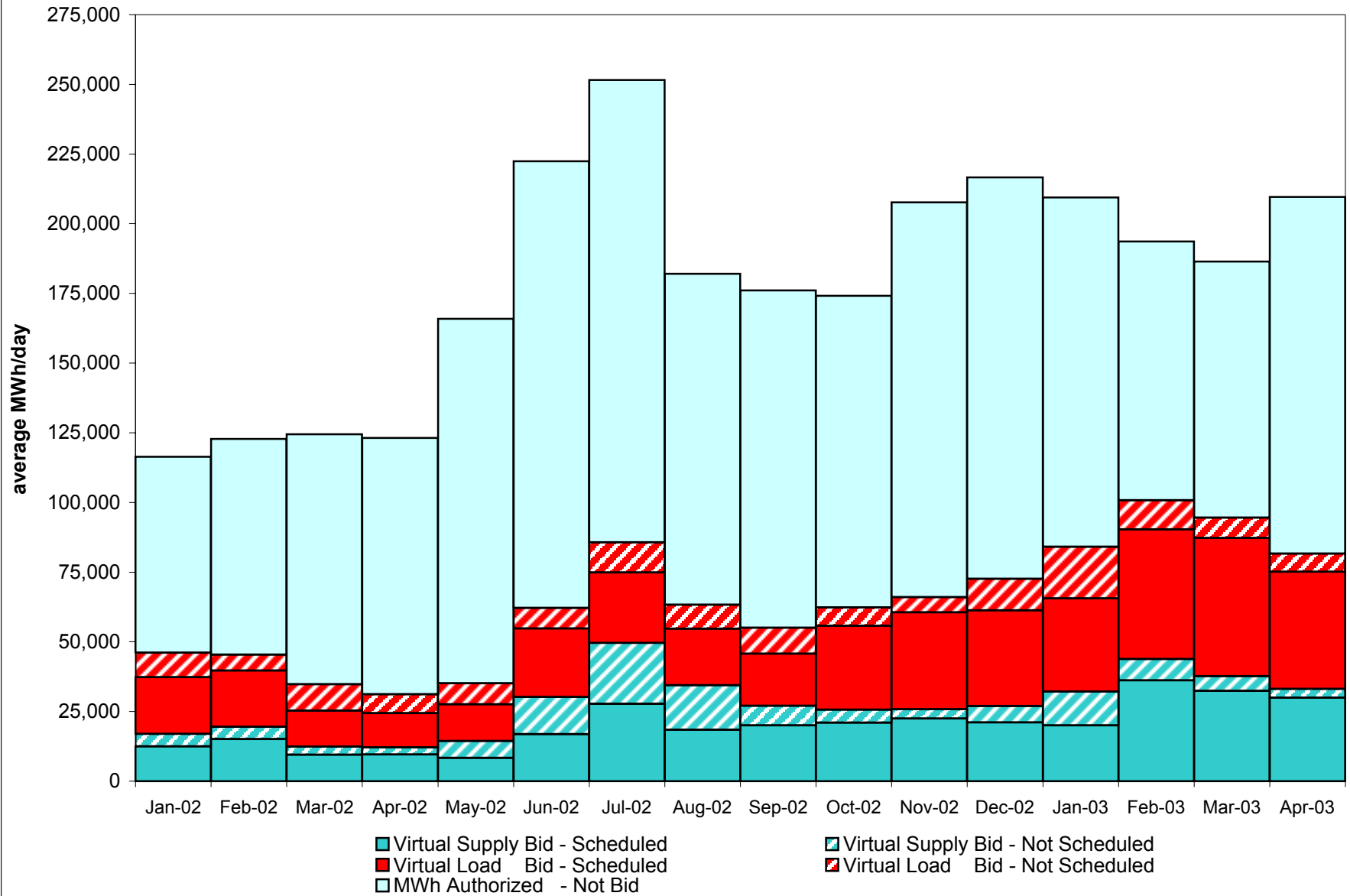
NYISO Price Corrections 2002

| <u>Interval Corrections</u> | January | February | March | April | May | June | July | August | September | October | November | December |
|--|---------|----------|--------|--------|--------|--------|--------|--------|-----------|---------|----------|----------|
| Number of Intervals corrected in the month | 12 | 11 | 55 | 13 | 16 | 616 | 346 | 1,261 | 1,016 | 201 | 23 | 24 |
| Number of Intervals in the month | 11,129 | 10,111 | 11,231 | 11,075 | 11,330 | 10,845 | 11,014 | 11,291 | 10,632 | 11,068 | 10,568 | 11,043 |
| Percentage of intervals corrected in the month | 0.11% | 0.11% | 0.49% | 0.12% | 0.14% | 5.68% | 2.28% | 11.17% | 9.56% | 1.82% | 0.22% | 0.22% |
| Number of Intervals corrected Year-to-date | 12 | 23 | 78 | 91 | 107 | 723 | 1,069 | 2,330 | 3,346 | 3,547 | 3,570 | 3,594 |
| Number of Intervals Year-to-date | 11,129 | 21,240 | 32,471 | 43,546 | 54,876 | 65,721 | 76,735 | 88,026 | 98,658 | 109,726 | 120,294 | 131,337 |
| Percentage of intervals corrected Year-to-date | 0.11% | 0.11% | 0.24% | 0.21% | 0.19% | 1.10% | 1.27% | 2.65% | 3.39% | 3.23% | 2.97% | 2.74% |
| <u>Hours Reserved</u> | | | | | | | | | | | | |
| Number of hours reserved in the month | 55 | 33 | 76 | 72 | 65 | 111 | 136 | 188 | 150 | 128 | 75 | 74 |
| Number of hours in the month | 744 | 672 | 744 | 720 | 744 | 720 | 744 | 744 | 720 | 744 | 720 | 744 |
| Percentage of hours reserved in the month | 7.26% | 4.91% | 10.22% | 10.00% | 8.74% | 15.42% | 18.28% | 25.27% | 20.83% | 17.20% | 10.42% | 9.95% |
| Number of hours reserved Year-to-date | 55 | 88 | 164 | 236 | 301 | 412 | 548 | 736 | 886 | 1,014 | 1,089 | 1,163 |
| Number of hours Year-to-date | 744 | 1,416 | 2,160 | 2,880 | 3,624 | 4,344 | 5,088 | 5,832 | 6,552 | 7,296 | 8,016 | 8,760 |
| Percentage of hours reserved Year-to-date | 7.26% | 6.14% | 7.55% | 8.16% | 8.31% | 9.48% | 10.77% | 12.62% | 13.52% | 13.90% | 13.59% | 13.28% |
| <u>Days Without Corrections</u> | | | | | | | | | | | | |
| Days without price corrections in the month | 25 | 20 | 27 | 23 | 20 | 12 | 11 | 5 | 10 | 15 | 19 | 17 |
| Days without price corrections Year-to-date | 25 | 45 | 72 | 95 | 115 | 127 | 138 | 143 | 153 | 168 | 187 | 204 |

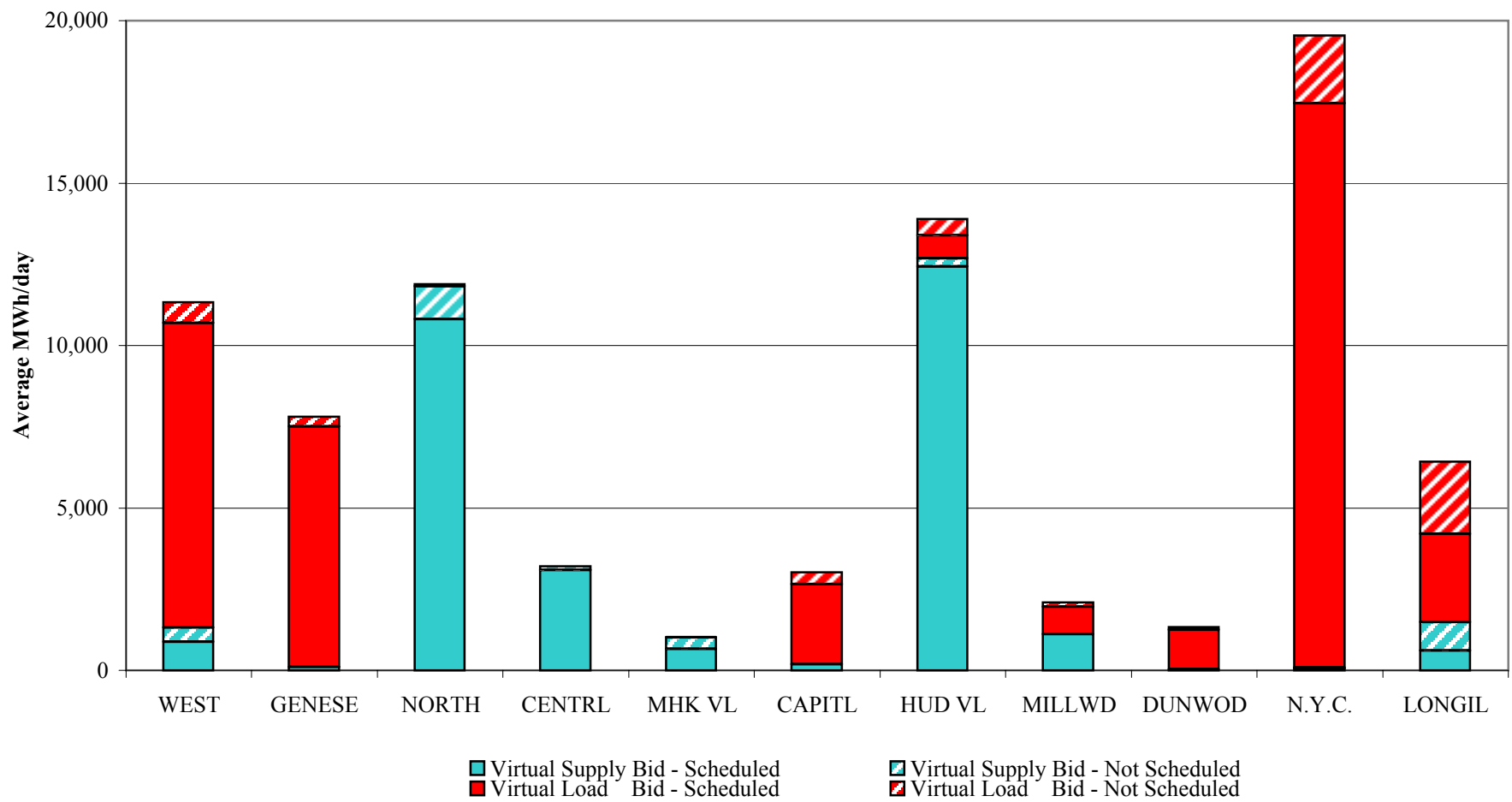


4-R

NYISO Virtual Trading Average MWh per day

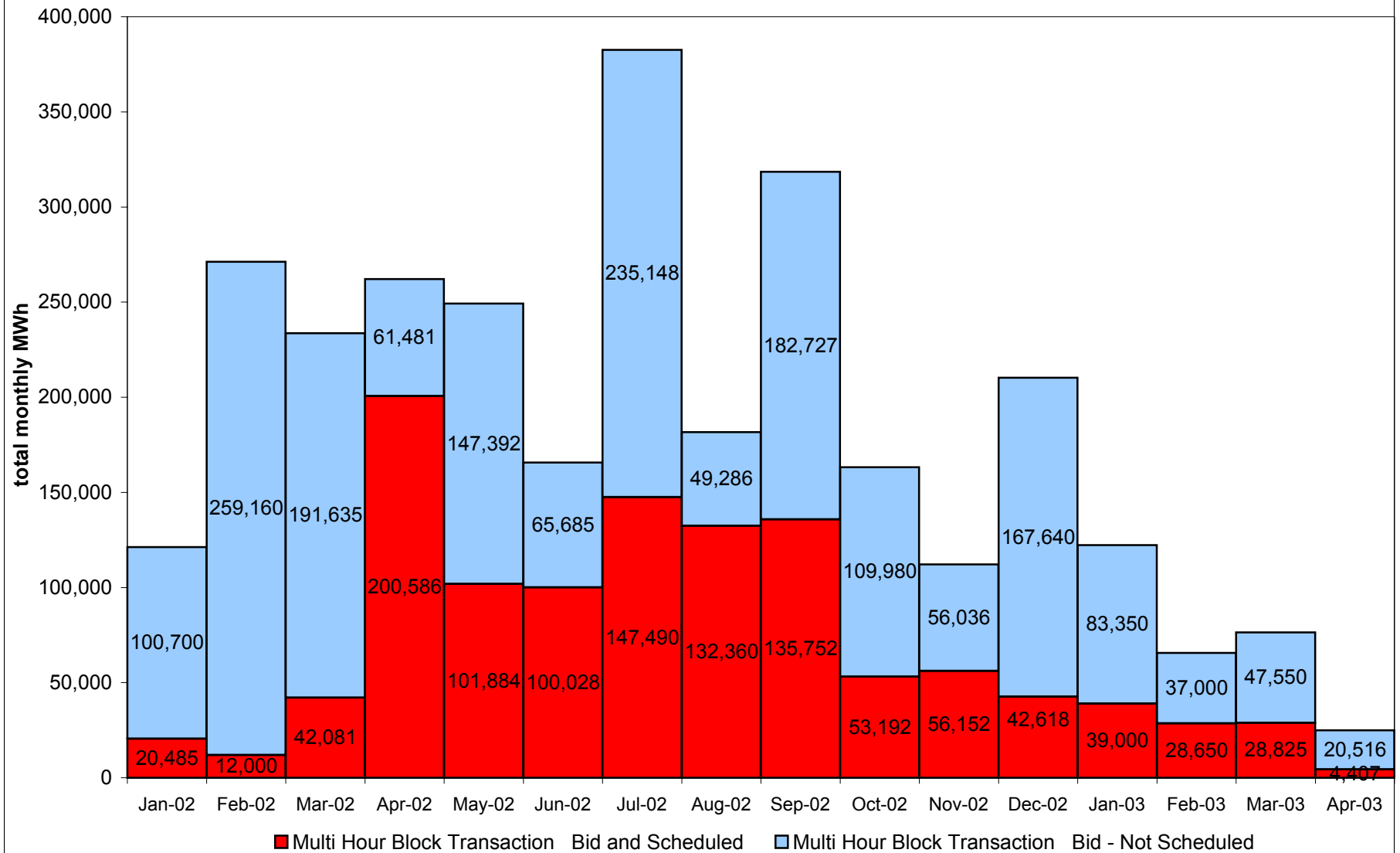


Virtual Load and Supply Zonal Statistics **April 2003**



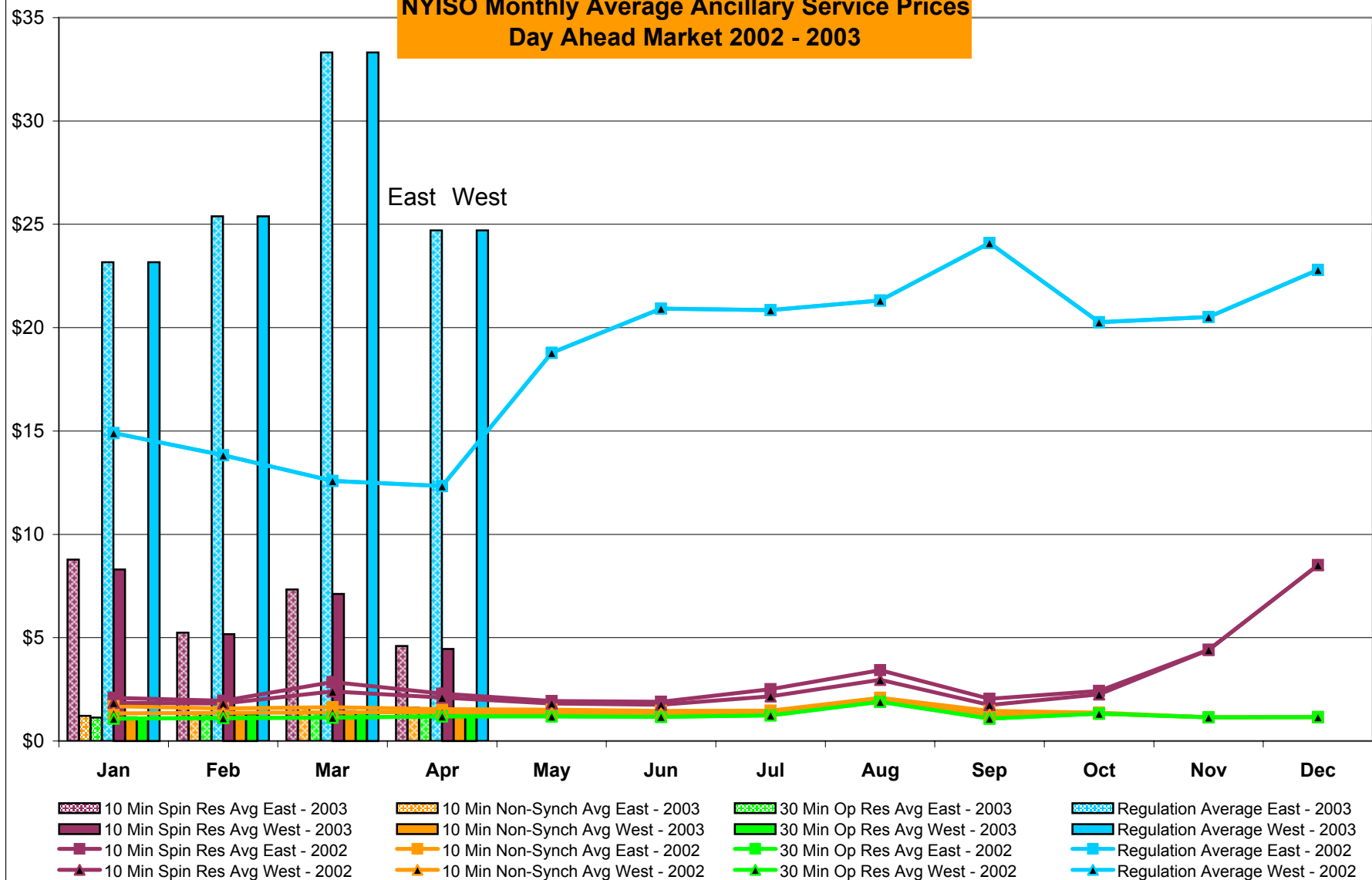
4-T

NYISO Multi Hour Block Transactions Monthly Total MWh

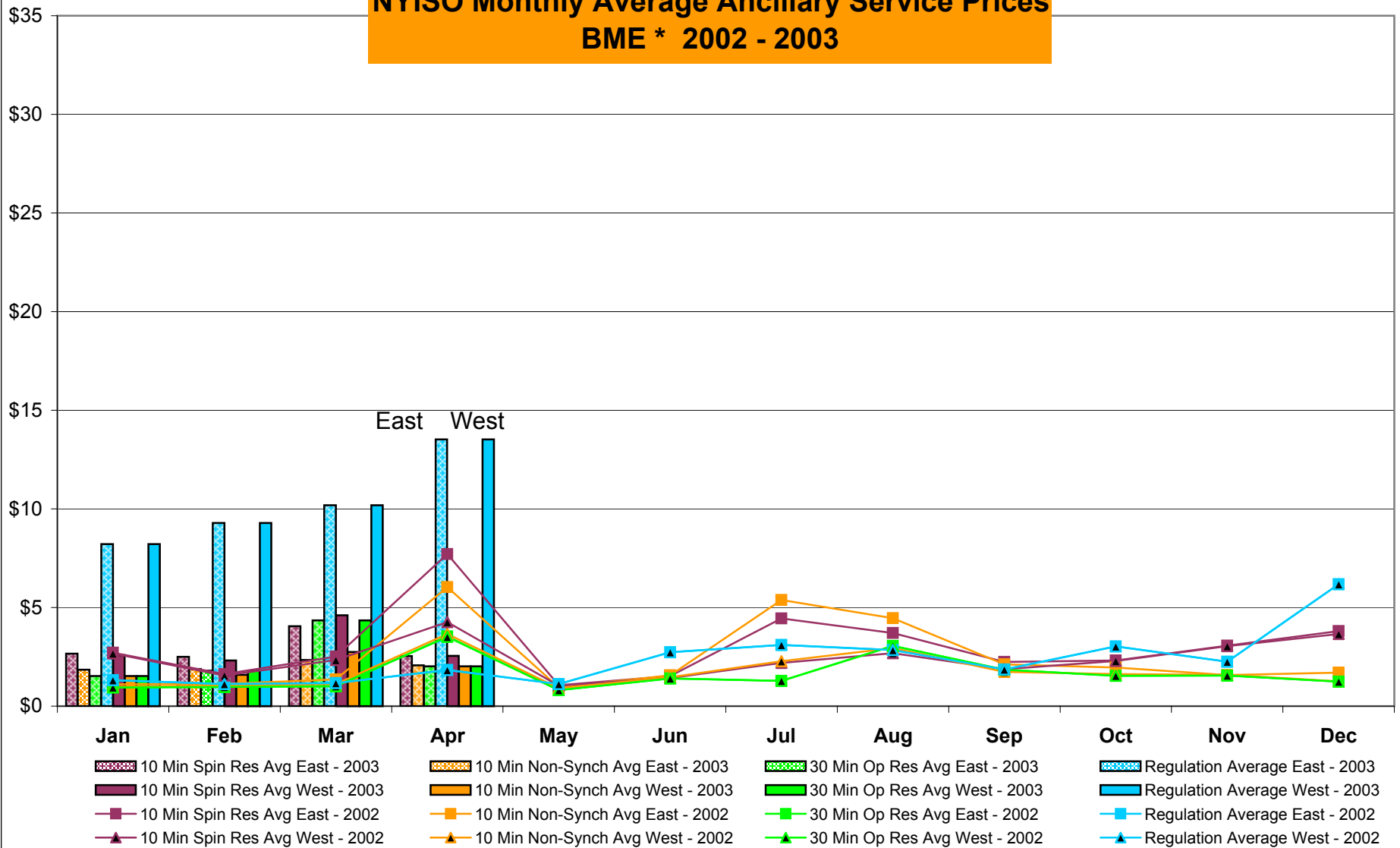


4-U

NYISO Monthly Average Ancillary Service Prices Day Ahead Market 2002 - 2003



NYISO Monthly Average Ancillary Service Prices **BME * 2002 - 2003**



* Commonly referred to as Hour Ahead Market (HAM)

NYISO Markets Ancillary Services Statistics

| | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---------|----------|-------|-------|-------|-------|-------|--------|-----------|---------|----------|----------|
| <u>ANCILLARY SERVICES Unweighted Price (\$/MWH) 2003</u> | | | | | | | | | | | | |
| <u>Day Ahead Market</u> | | | | | | | | | | | | |
| 10 Min Spin East | 8.78 | 5.24 | 7.33 | 4.60 | | | | | | | | |
| 10 Min Spin West | 8.30 | 5.17 | 7.12 | 4.45 | | | | | | | | |
| 10 Min Non Synch East | 1.22 | 1.36 | 1.60 | 1.61 | | | | | | | | |
| 10 Min Non Synch West | 1.15 | 1.32 | 1.45 | 1.54 | | | | | | | | |
| 30 Min East | 1.14 | 1.30 | 1.41 | 1.48 | | | | | | | | |
| 30 Min West | 1.14 | 1.30 | 1.41 | 1.48 | | | | | | | | |
| Regulation East | 23.17 | 25.39 | 33.31 | 24.70 | | | | | | | | |
| Regulation West | 23.17 | 25.39 | 33.31 | 24.70 | | | | | | | | |
| <u>BME* Market</u> | | | | | | | | | | | | |
| 10 Min Spin East | 2.67 | 2.50 | 4.05 | 2.54 | | | | | | | | |
| 10 Min Spin West | 2.59 | 2.32 | 4.61 | 2.55 | | | | | | | | |
| 10 Min Non Synch East | 1.85 | 1.89 | 2.34 | 2.07 | | | | | | | | |
| 10 Min Non Synch West | 1.53 | 1.59 | 2.75 | 2.02 | | | | | | | | |
| 30 Min East | 1.52 | 1.80 | 4.34 | 2.02 | | | | | | | | |
| 30 Min West | 1.52 | 1.80 | 4.34 | 2.02 | | | | | | | | |
| Regulation East | 8.21 | 9.28 | 10.19 | 13.52 | | | | | | | | |
| Regulation West | 8.21 | 9.28 | 10.19 | 13.52 | | | | | | | | |
| <u>ANCILLARY SERVICES Unweighted Price (\$/MWH) 2002</u> | | | | | | | | | | | | |
| <u>Day Ahead Market</u> | | | | | | | | | | | | |
| 10 Min Spin East | 2.09 | 1.95 | 2.85 | 2.29 | 1.93 | 1.90 | 2.51 | 3.43 | 2.04 | 2.43 | 4.42 | 8.52 |
| 10 Min Spin West | 1.85 | 1.81 | 2.40 | 2.11 | 1.81 | 1.75 | 2.16 | 2.96 | 1.74 | 2.26 | 4.41 | 8.52 |
| 10 Min Non Synch East | 1.68 | 1.58 | 1.64 | 1.55 | 1.52 | 1.46 | 1.47 | 2.09 | 1.46 | 1.37 | 1.15 | 1.16 |
| 10 Min Non Synch West | 1.34 | 1.36 | 1.39 | 1.40 | 1.34 | 1.32 | 1.35 | 1.96 | 1.27 | 1.33 | 1.15 | 1.16 |
| 30 Min East | 1.09 | 1.11 | 1.13 | 1.19 | 1.20 | 1.17 | 1.24 | 1.90 | 1.09 | 1.32 | 1.15 | 1.16 |
| 30 Min West | 1.09 | 1.11 | 1.13 | 1.19 | 1.20 | 1.17 | 1.24 | 1.90 | 1.09 | 1.32 | 1.15 | 1.16 |
| Regulation East | 14.90 | 13.83 | 12.59 | 12.33 | 18.78 | 20.92 | 20.85 | 21.31 | 24.10 | 20.27 | 20.51 | 22.80 |
| Regulation West | 14.90 | 13.83 | 12.59 | 12.33 | 18.78 | 20.92 | 20.85 | 21.31 | 24.10 | 20.27 | 20.51 | 22.80 |
| <u>BME* Market</u> | | | | | | | | | | | | |
| 10 Min Spin East | 2.70 | 1.62 | 2.51 | 7.71 | 1.06 | 1.53 | 4.45 | 3.71 | 2.25 | 2.32 | 3.07 | 3.81 |
| 10 Min Spin West | 2.67 | 1.55 | 2.34 | 4.26 | 1.03 | 1.43 | 2.19 | 2.69 | 1.88 | 2.29 | 3.04 | 3.66 |
| 10 Min Non Synch East | 1.11 | 1.13 | 1.35 | 6.03 | 0.94 | 1.56 | 5.38 | 4.45 | 2.12 | 1.96 | 1.58 | 1.70 |
| 10 Min Non Synch West | 0.99 | 1.05 | 1.12 | 3.65 | 0.91 | 1.46 | 2.27 | 2.94 | 1.74 | 1.63 | 1.58 | 1.26 |
| 30 Min East | 0.95 | 0.97 | 1.01 | 3.54 | 0.82 | 1.41 | 1.28 | 3.05 | 1.85 | 1.54 | 1.55 | 1.24 |
| 30 Min West | 0.95 | 0.97 | 1.01 | 3.51 | 0.82 | 1.41 | 1.28 | 3.05 | 1.85 | 1.54 | 1.55 | 1.24 |
| Regulation East | 1.32 | 1.12 | 1.17 | 1.84 | 1.12 | 2.73 | 3.11 | 2.85 | 1.86 | 3.03 | 2.25 | 6.18 |
| Regulation West | 1.32 | 1.12 | 1.17 | 1.84 | 1.12 | 2.73 | 3.11 | 2.85 | 1.86 | 3.03 | 2.25 | 6.18 |

* Commonly Referred to as Hour Ahead Market (HAM)

NYISO LBMP ZONES

