

Temporal Optimization – MIO Pricing

Market Pricing Working Group
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Percentage Change in Daily Prices Compared to the 12X Ramp MCP

| Date | MIO MCP (INC.) | MIO HSP | MIO MHSP #1 | MIO MHSP #2 | MIO Modified Incremental (NEW) |
|-----------------------------------|----------------------|-------------|----------------|----------------|---|
| Sat Dec 11, 2004 | -1.4 | 2.44 | 1.48 | 0.02 | -0.60% |
| Sun Dec 12, 2004 | 1.65 | 0.99 | 4.51 | 3.09 | 2.69% |
| Mon Dec 13, 2004 | 2.32 | 3.01 | 4.63 | 3.48 | 3.76% |
| Sat Feb 05, 2005 | 6.44 | 14.68 | 9.31 | 7.96 | 7.69% |
| Sun Feb 06, 2005 | 0.54 | 5.83 | 2.45 | 1.49 | 2.17% |
| Mon Feb 07, 2005 | -0.61 | 2.91 | 1.12 | 0.25 | 0.35% |
| Fri Mar 11, 2005 | 0.03 | 1.8 | 1.07 | 0.55 | 0.32% |
| Sat Mar 12, 2005 | -1.24 | -0.36 | -0.73 | -0.98 | -1.19% |
| Sun Mar 13, 2005 | -1.21 | 2.36 | 0.79 | -0.21 | -0.09% |
| Mon Mar 14, 2005 | -8.21 | -3.66 | -5.97 | -7.1 | -7.00% |
| Tues Mar 15, 2005 | -3.42 | -0.91 | -1.81 | -2.62 | -2.16% |
| Wed Mar 16, 2005 | -0.86 | 1.75 | 1.82 | 0.48 | 0.61% |
| Average All days | -0.5 | 2.57 | 1.57 | 0.53 | 0.55% |
| Average Excluding Feb 5/05 | -1.13 | 1.47 | 0.85 | -0.13 | -0.10% |

- **Enforcing unit minimum loading point**
 - Units are not scheduled below minimum load except during start up and shut down
- **Dispatching during start up and shut down**
 - Units are assumed to self-dispatch straight to P_{min} once synchronized and straight to zero once shutdown decision is made
- **Forbidden operating ranges for hydraulic units**
 - Units are not scheduled to a level that is forbidden
- **No operating reserve available below unit minimum loading point**
 - Units below P_{min} cannot provide OR

- **Further analysis is required before a decision on MIO pricing can be made**
 - On/off peak
 - Stressed days
 - Further use of Sandbox and/or MACD simulator
- **Analysis and recommendation from a third-party would be beneficial**