

**MANITOBA HYDRO****2012/13 & 2013/14 ELECTRIC GENERAL RATE APPLICATION****UNDERTAKING PROVIDED BY: D. CORMIE**

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**Manitoba Hydro Undertaking #18**

Manitoba Hydro to provide an analysis of day ahead versus real time prices.

**Response**

Table 1 provides summary statistics on the differences between Day-Ahead and Real-Time Locational Marginal Prices (LMPs) at the MHEB node. On average the Day-Ahead price was higher than the Real-Time price by \$US 0.77/MWh for this period.

Consistent with the MISO market design, Manitoba Hydro participates mainly in the Day-Ahead market. On average this provides a better return compared to real time sales, price certainty on both sales and purchases, and avoids the risk of real time Revenue Sufficiency Guarantee (RSG) charges which have been as high as \$80/MWh. Real-Time RSG charges are assessed after the fact to market participants who deviate from Day-Ahead schedules and cause non-optimal dispatch.

More noteworthy is the difference in price volatility between the Day-Ahead and Real-Time markets. The standard deviation of hour-to-hour changes in Real-Time LMPs was \$US 25.23/MWh, which is over three times that of the Day-Ahead hour-to-hour changes. As a result Manitoba Hydro is at significant risk of being paid a price below its cost for sales into the Real-Time market. This is in contrast to the Day-Ahead market where Manitoba Hydro has the ability to define its price offers and have certainty that its sale costs will be recovered.

Table 1- Pricing Statistics at the MHEB node

| <b>Price Differences of Day-Ahead LMP minus Real-Time LMP</b><br>April 1, 2006 through March 31, 2012. |          |
|--|----------|
|  | \$US/MWh |
| Maximum  | 547.13   |
| Minimum  | (354.85) |
| Average  | 0.77     |
| <b>Hour-to-Hour Volatility of LMPs</b>   |          |
| standard deviation of hour-to-hour change in Day-Ahead LMP   | 8.18     |
| standard deviation of hour-to-hour change in Real-Time LMP   | 25.23    |

Figure 1 is a distribution of the differences in Day-Ahead LMPs and Real-Time LMPs for the same operating hour from April 1, 2006 through March 31, 2012. Positive differences indicate that for the same hour that the Day-Ahead LMP exceeded the Real-Time LMP. For the period of record analyzed, Day-Ahead prices exceeded Real-Time prices 56% of the time.

