

# Twelve Times Ramp Rate Recap – Next Steps

Market Pricing Working Group – Jan 20, 2005



- **Recap/Refresher**
  - MPWG Principles
  - History of 12X
  - List of presentations made in the past
- **Next Steps**
  - Objectives for Solution
  - Possible Solutions Discussed So Far
  - How To Proceed

## MPWG – Guiding Principles

1. Efficiency
  2. Fairness
  3. Reliability
  4. Transparency
  5. Robustness
- "practicality and implementability" is worthy of explicit recognition when applying these principles within the group's stated objectives.

- A sample of some of the initial expectations of the MPWG (from May 7/04 meeting notes)
  - The MPWG should assess the overall philosophy of pricing (i.e. What are we trying to accomplish?).
  - A more transparent pricing process that is easier to understand.
  - Recognize and discuss how decisions on pricing issues affect investment & their impact on other stakeholders.
  - Assess and determine the impact of MIO on market prices.
  - Assist in creating an efficient balanced market with “fair” pricing.

- Twelve Times Ramp Rate is one of the first issues looked at by the MPWG – May 2004.
- From the Issue Paper (June 25/04)
  - Within the real-time unconstrained (market) schedule sequence, the energy ramping capability of all dispatchable facilities is assumed to be 12 times higher than the actual ramping ability.
  - based on results during the last phase of market testing in April of 2002, where there was extreme real-time price volatility during periods of large change in market demand.

- From the Issue Paper (cont'd)
  - price volatility resulted from a lack of ramp depth of scheduled lower priced resources in a single interval, so higher priced resources were required to be dispatched to meet the large demand change.
  - When approved by the IMO Board, it was approved as a temporary measure with the intent that a more efficient long-term solution would be found to replace it.

- From the Issue Paper (cont'd)
  - 12 times ramp rate impacts the principles of efficiency and transparency. When affected by the 12 times ramp rate, the market clearing price is not reflective of the precise cost of producing the energy required to meet the market demand at that time.
  - The use of 12 times ramp rate reduces the simplicity of the price calculation, including the added complication of congestion management settlement credits (CMSC).

- **Original market design:**
  - Pricing should reflect actual dispatch to the maximum extent possible
    - Calculating price ex-post is a prime example of this.
  - Differences between unconstrained schedule and actual dispatch should be caused by limitations of the Ontario grid only.
  - CMSC payments keep operating profit of dispatchable participants to that of the unconstrained (i.e. What it would have been in the absence of grid limitations).

- 12 times ramp rate was introduced in April of 2002, creating another difference between the constrained and unconstrained algorithms.
- CMSC now triggered for ramp issues.
- In spring of 2004, MIO was introduced to the constrained algorithm but not the unconstrained.
- Created an even greater difference between the two algorithms.

- MIO in the constrained dispatch algorithm:
  - Still uses one times ramp rates (as the previous constrained did).
  - Optimizes over multiple intervals while the unconstrained algorithm uses myopic optimization, one interval at a time.
  - Respects minimum output levels of a generator. Will not dispatch a generator below it's minimum output unless the generator is coming off line.
  - These differences result in CMSC.

- MIO has become a central aspect of the 12X pricing discussion.
- Numerous presentations and discussions since June/04 on pricing methods (see handout with summary of presentations and actions).

- Dec. 7 IESO Board resolution regarding Day Ahead Commitment Process included the following text:
  - “...the Board recognizes the need to give focussed attention to resuming and advancing work with stakeholders on the Day-Ahead Market, **the appropriate ramp rate multiplier, if any, to be employed in the market schedule** and whether intertie transactions should be considered in the calculation of the Ontario Market Clearing Price. To the extent feasible without jeopardizing the June 1 DACP in-service date, this work should proceed in parallel with the implementation of the DACP.”

# Twelve Times Ramp Rate Next Steps



- An enduring real-time price solution is desired:
  - Reducing ramp rate to a lower value (6x, 3x) is an arbitrary solution.
- RT Price should provide a basis for:
  - future market evolution (eg. DAM)
  - forward price curves
    - Forward contracts, strip auctions
- Minimize “unhedgeable” charges
  - avoid or decrease uplift

- Return to the original philosophy of the market design – price follows dispatch
  - Strongest possible linkage between price and dispatch is the linkage that must exist for participants to develop forward price curves with any confidence.

## **HENCE:**

- Ramp rate used for pricing should match facilities' actual capabilities.
- Dispatchable facilities can't operate below minimum generation level.

- Reflects actual ramping capability of dispatchable facilities.
- Does not reflect actual dispatch
  - Dispatch uses MIO to address ramp deficiencies
- Does not currently reflect unit minimums.
- Simple to implement

- Reflects actual unit dispatch and unit minimums
- Removes three existing causes of CMSC
  - 12x vs. 1x
  - Myopic vs. look-ahead
  - Dispatch below unit minimums
- MIO will dispatch units out-of-merit
  - Some additional compensation for this may be required
  - Depends on which MIO pricing method is chosen

- A change to the unconstrained algorithm to incorporate MIO is expected to take roughly 6 months to prepare.
- Early cost estimate is in the order of \$200-500 thousand for the algorithm work.

- To be provided at meeting

- What is needed to move this issue forward?
  - What information (if any) does the MPWG need in order to support a recommendation?